

CI 1871 Computer Literacy and Problem Solving

Study Guide for Fall 2022

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Course Details

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Prerequisites

You should have some familiarity with Microsoft Windows, which is the operating system¹ most PCs run on. The textbook and this Study Guide are written for Microsoft Windows 10. Globally, there are about 74% Windows users compared to about 16% Macintosh users.

Mac: Even though the course is written for the Windows versions of the apps, it is possible to do the course on a Macintosh computer, but it will be more difficult. For the most part, Macs and PCs can do the same things, but the interfaces, menus, and keyboard shortcuts often are different. For example, the  (**Command**) key on the **Mac** usually does the same thing as the **Ctrl (Control)** key in Windows. So, for example, **Ctrl + s** will save a file ² in Windows; this corresponds to **Command + s** on the **Mac**. If the directions say to use the **Ctrl** key, try that on the **Mac**. If it does not work, try the **Command** key. The textbook and this Study Guide have tips for **Mac** users to help you get through some of the rough spots, but some places will be a challenge. If it becomes too frustrating, you can do the work in one of the public computer labs on campus. For locations, see <https://it.umn.edu/services-technologies/computer-labs>

If you have never used Windows, you will find it useful to read the first hundred or so pages in the textbook. These pages contain basic information on Windows that will make the rest of the course go more smoothly for you. You do not have to do the activities on those pages.

Computer Access

You may use any Windows or Macintosh computer that has the 2019 version of Microsoft Excel, Word, and PowerPoint. Or, you may use the apps contained in Office 365, which you may get free through the U. See the syllabus for details.

Browser versions of the apps generally do not have all the features you will need to complete the assignments so **do NOT use** those.

¹ An **operating system**, like Windows 10 or Mac OS, is a program that manages other programs, like Microsoft Word. A **program** (AKA **application** or simply **app**) is a set of instructions that accomplishes specific tasks.

² A **computer file** is electronic information, such as a Word document, an Excel workbook, or a photo, that is stored and organized in a container known as a **folder**.

Honesty

You may get help and work with others on the projects, but you must submit your own work. That is, someone can help you figure out what to do but you must, in the end, do it yourself. Copying the work of someone else is academic misconduct and may result in your receiving a grade of 0 on a project or failing the entire course.

Credits and Workload Expectations

For undergraduate courses, one credit is defined as equivalent to an average of three hours of learning effort per week necessary for an average student to achieve an average grade in the course. Because this is a four-credit course, you should expect to spend $3 \times 4 = 12$ hours per week working on projects and studying for exams.

Course Grade

The course grade will be determined by your scores on 12 required homework projects and three exams. You may earn extra credit on your homework score by submitting Project 6 Excel practice exam questions **OR** Projects 14 and 15, which cover Access, a database app (not available on the Mac). These are **extra credit** and so submission is **NOT** required. If you do them, your scores will be added to your homework total when final grades are calculated. Thus, it is possible to earn up to 110% on homework projects.

The letter grades will be determined according to the following chart.

Letter Grade	Points Needed	Definition
A = 4.00	100 – 96	Represents achievement that is outstanding relative to the level necessary to meet course requirements
A- = 3.67	95 – 90	
B+ = 3.33	89 – 86	Represents achievement that is significantly above the level necessary to meet course requirements
B = 3.00	85 – 82	
B- = 2.67	81 – 80	
C+ = 2.33	79 – 76	Represents achievement that meets the course requirements in every respect
C = 2.00	75 – 73	
C- = 1.67	72 – 70	
D+ = 1.33	69 – 68	Represents achievement that is worthy of credit even though it fails to meet fully the course requirements
D = 1.00	67 – 65	
S none	100 – 73	Represents achievement that is satisfactory, i.e., is equivalent to a 2.00
F = 0.0	under 65	Represents a failure to meet course requirements
N = 0.0	under 73	Represents a failure to meet course requirements

I will email you a four-character **HWID** (HomeWork IDentification number) that I will use to keep track of your homework and exam scores. It will have three digits and a letter, such as **100A**. Be sure to include that on all submissions and any emails you send me.

Student Learning Outcomes (SLOs)

CI 1871 addresses the following **SLOs**:

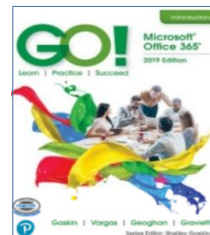
- 1. Identify, define, and solve problems** You will gain experience identifying, defining, and solving problems by creating mathematical models that will help you make predictions to see how a situation will evolve over time. For example, in Project 5 you will use Excel to find out how much a person would need to sell in order to make a certain level of income. The assessment will be based on the computer output you produce.
- 3. Master a body of knowledge and a mode of inquiry** You will increase your technological knowledge base, especially in the area of data analysis, and you will gain insights into how computers can be used to collect, analyze, display, and present data and information. For example, in Project 5 you will use Excel to calculate and summarize sales commissions for employees. The assessment will be based on the computer output you produce and also your performance on exams.
- 5. Communicate effectively** You will use word processing, spreadsheet, and presentation software to communicate ideas, data, and charts from a wide variety of disciplines including business, economics, and social science. For example, in Project 13 you will create a presentation that includes text, tables, charts, audio, animation, and video to inform people about the benefits of computer-mediated instruction. In Project 10 you will modify a thirty-five page book chapter by including a Table of Contents, charts, cross references, mathematical equations, styles, and an index.
- 7. Effective citizenship and life-long learning** The skills, concepts, and knowledge you acquire in this course will help you to be an effective citizen in that you will be better able to understand how yourself and others can use computers to help store and retrieve data, make decisions, predict future events, and communicate with others.

Introduction

In this course, you will learn concepts and develop competencies in the computer technologies that are most often used in the social sciences and in business to help solve problems.

Textbook

Gaskin, Vargas, Geoghan & Graviett. GO! with Microsoft Office 365, 2019 Edition Introductory. New York: Prentice Hall, 2020.



The course is set up to use **Inclusive Access**, which is a textbook model that uses an eText rather than a print text. On the bookstore website, the textbook title will appear as **(Inclusive Access) Go! With Microsoft Office 365 2019 Edition**, Author: Gaskin, ISBN: 9780135417881 You will receive access to this digital course material through Canvas³ on the first day of class by clicking **Modules** in its menu. Then, click the textbook link. The Inclusive Access charge will be automatically billed to your account. Coffman Union Bookstore (612-625-6000, <http://www.bookstore.umn.edu/>) will notify you about the fees, and how and when they will be billed to your student account.

If you want to use a print copy of the textbook, you may **opt out** of Inclusive Access via the link provided to you, or by emailing inclusiveaccess@umn.edu with your course information and requesting to opt out. At your request, the Bookstore will issue a refund to your student account. Opt-outs are only accepted within the first seven days of the semester. If you opt out, you may rent or buy the printed version of the textbook from the bookstore or Amazon.com (search for ISBN 9780135417812).

The print text and eText have the same basic content. So, which should you get?

eText	Print Text
Can use online or offline.	A traditional softcover textbook.
Can electronically search for specific pages, words, or phrases.	Have to page through the text or use the Index to find things.
Pointing to highlighted words opens a box that contains the definition.	Can use the Glossary to find the definitions of words.
Is cheaper than renting a print text.	More expensive.
Have to continually switch between the eText screen and the app screen you are working on (e.g., Excel). This will be very annoying and time-consuming if you have only one monitor.	No need to switch between screens. This will be useful if you have only one screen (e.g., a laptop without an external monitor). Easy to make hand-written notes in the margins.

The front material of the text contains all sorts of information about the book and the specific features it contains to help you learn. Feel free to page through this material but reading it in detail will not be all that useful.

³ Canvas is a cloud-based system that manages digital learning tools and resources. For more information see <https://it.umn.edu/services-technologies/canvas>

In the textbook, the authors use the word **press** when they want you to **tap** one of the keys. So, when you see “press **Enter**” don’t hold down the key but quickly tap it. If you hold down the key it will be like hitting the key multiple times.

In the textbook and in this Study Guide, when you are to hold down one key and then tap another, the two keys will be shown connected with the **+** sign. For example, “Press **Ctrl + s** to save the document.” **Ctrl + s** tells you to hold down the **Ctrl** key and, while holding down that key, tap the **s** key. The first key, **Ctrl**, is called a **modifier** key because it modifies the action of the second key. The **+** in **Ctrl + s** is there to tell you to hold down the first key while you tap the second key; you do **NOT** touch the **+** key on the keyboard.

To save time, when the textbook instructs you to print something **DO NOT PRINT IT**. When you complete all the work for a chapter, return to this Study Guide to find out exactly what output to create and submit for grading.

At the very back of the textbook, page **G-1**, you will find a **Glossary** that you can use to look up the definitions of many words that have particular meanings when used in relation to computing.

G-1

Glossary

3-D

The shortened term for *three-dimensional*, which refers to an image that appears to have all three spatial dimensions—length, width, and depth.

In the print text, the **Index** is located right after the **Glossary**. You can use the **Index** to find places in the textbook that contain instruction on specific topics. If you forget how to do something, look it up in the **Index**. The eText does not contain an index because you can use the search feature to find key words.

Companion Web Site for CI 1871

In addition to a Canvas site, where you will submit homework projects and exams, this course has a website where you will find links that will allow you to download the files you will need, the syllabus, this Study Guide, and exam instructions. The **URL** (Uniform Resource Locator) is <http://www.z.umn.edu/robertson>

Study Guide

This Study Guide has four components.

Introductory material: You are reading that part right now.

Projects: There are 12 required projects for you to complete, each of which contains several parts. The projects tell you what to read in the textbook and which hands-on activities to complete. The projects also contain additional instruction on how to do some things that are not covered in the textbook but which I think are important. The projects contain the details of what to submit for grading.

Project keys: Starting on page **SG399** of this Study Guide ⁴ is a section that contains the keys for the projects. As you complete each assignment, look at the key to see if your computer output matches the one in the key. If so, great. If not, figure out what you did wrong and fix it. Note that since all computers and printers are set up differently, some of your output may not look *exactly* like the output shown. This is especially true for line breaks, which are the points where the text on one line stops and continues on the next line, and page breaks, which are the points where the text on one page stops and continues on the next page. Don't worry about this. When we grade the assignments, we look to see if you have correctly followed the directions. In most cases, your output and the key will match.

Sample Exam Questions and Solutions: At the end of the sections on Excel, Word, and PowerPoint, you will find practice questions that are similar to the ones that will appear on the exams. The worked-out solutions are included after the questions and the keys are in the Keys section at the back of this Study Guide.

The Five Steps of Each Project

To learn the material in the most efficient way, follow the steps given below:

Step 1 Read

Before trying any activities, read the introductory material that is located at the beginning of each textbook chapter. This will help you get the overall picture of what you are going to do when you work on the computer. This will only take a minute or two, but it is time well spent.

Step 2 Activities

The hands-on step-by-step exercises in the textbook are called **Activities**. Carefully read and follow the directions for each activity, and read and understand the explanations. Don't just punch the keys! Note that if the resolution of your display is not 1280 x 768 things may look a bit different from the screenshots in the textbook or this Study Guide. Don't worry if you need to make minor adjustments, especially to spacing, when working on your own computer.

It is important that you do every step, except for printing, of every activity assigned. You will need some of the workbooks, documents, and presentations you create for later homework projects. If you skip something you will eventually have to go back and do it later, and this will be confusing.

⁴ Page numbers with **SG** in front of them refer to pages in this **Study Guide**.

Step 3 Homework Projects

When you finish all the assigned textbook activities for a chapter, return to this Study Guide and begin work on the homework. The problems are designed to get you to think about what you have learned in the chapter and to show that you have mastered the concepts and skills described in the textbook and this Study Guide. If you get stuck, refer back to those pages in the textbook that cover relevant material. In the eText, you can search for specific words or phrases. In the print text the Index at the end of the textbook will be a big help.

You may have to go back through a chapter to see how to do something if you did not learn it well enough through your reading and doing the activities.

When you complete an assigned problem, compare your output with the key at the end of this Study Guide and make changes as needed.

Rather than produce printed copy, you will save your output as pdf files and submit those to Canvas. **PDF (Portable Document Format)** was developed in 1991 by Adobe Systems. It is designed to represent documents in a manner independent of application software, hardware, and operating systems.

Step 4 Submit

When you complete all the assigned problems for a project, place the pdf files in a folder, compress it (see page **SG13**) and submit it to Canvas for grading.

Step 5 Backup

It is good practice to backup your files every so often, especially if they are stored on a USB drive (also known as Thumb drive, Memory stick, and Flash drive)⁵. These can be lost or broken. To backup, drag your CI 1871 folder from one device to the other, e.g., from your USB drive to your computer's hard drive or to Google Drive (a cloud storage facility described on page **SG28**).



The more important the file the more often you should back it up. For example, if you are writing a paper saving drafts with different names every hour is a good idea. Use names like **SocPaper-1**, **SocPaper-2**, **SocPaper-3**, etc. as you progress. That way you can always go back to a previous draft if you need to. When you have completed the paper, you can delete all drafts but the final one, and then copy that one to another device as a backup.

⁵ **USB** stands for **U**niversal **S**erial **B**us. It is a specification to establish communication between devices, such as a USB flash drive, mouse, keyboard, or printer and a host controller, usually a personal computer. USB connectors also supply electric power, so many devices connected by USB do not need a power source of their own.

What If Something Doesn't Work?

The textbook gives step-by-step instructions on how to do many spreadsheet, word processing, and presentation operations. If you follow the directions as described your results will be as shown. Sounds simple, doesn't it? However, sometimes what you think you are doing may not be what you are really doing. You can get into trouble if you try to rush through the material or because you simply miss a step.

So, pay attention to what you are doing. If it doesn't work, carefully read the directions and try it again.

For computer operations problems, **restarting the computer usually helps**. For Windows, restarting usually is better than shutting down. This is because when Windows shuts down it may be set to save some temporary files so it starts up faster from a cold boot.⁶ Those files may cause problems so restarting usually is better than shutting down and then starting up again. But, both may help.

Schedule Your Time

For the textbook chapters, you should set aside a two- to four-hour block of time to go through the activities and complete the reading (there are two guided textbook projects for each chapter). Then, when you begin the homework projects, set aside several more hours. The projects vary quite a bit in the time needed to complete them so be prepared to be flexible. Don't hesitate to go back to the textbook to redo some of the activities—there is a lot to learn and sometimes you need to do it more than once before it sinks in.

Now, let's get started with the coursework.

⁶ Booting a computer means turning it on (an old term from the expression "picking up oneself by one's bootstraps"). A **cold** boot means the computer starts from a power off state. A **warm** boot (restart) means the startup process begins without turning off the power.

Project 1

Getting Started

Step 1 Read For this project, there are no pages to read in your textbook.



However, if you have never used Windows or any Microsoft Office apps (e.g., Excel, Word, PowerPoint) you will find it useful to work through the activities at the beginning of the textbook. These activities contain basic information that will make the rest of the course go more smoothly for you.

Step 2 Activities For this project, there are no textbook activities. To complete this project, do the following:

Set Up Your Computer Filing System

To reduce the typing that you will need to do, the textbook authors and I have created a set of files for you to get started on for most of the assignments. The files are located on **Google Drive**. This is a cloud storage service that allows you to store files online. Since the U of M is a Google campus, we all have access to unlimited free storage. Google Drive has lots of features that you might find useful. You can get more information at <https://it.umn.edu/technology/google-drive?km>

a. To download the files, follow the steps given below. Most of the screenshots are from my computer running Windows 10. If you are using a different version, or a **Mac**, things may look a bit different, but you should be able to follow the instructions without too much difficulty.

1. On the desktop, right-click and select **New** and then **Folder**.
2. Right-click the folder and select **Rename**. Type **CI 1871** as the new name and then tap **Enter**.
3. Open a web browser such as **Firefox**  or **Safari** .
4. Type the following in the address bar near the top of the screen

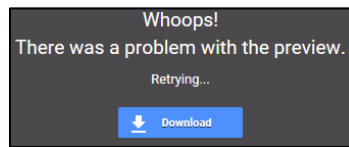
<http://z.umn.edu/1871f22> ⁷ This is a “shortened” URL that actually points to

<https://drive.google.com/file/d/1txOSNb3XGWmY-40Ny-BL6XWAb0YnVGkV/view?usp=sharing>

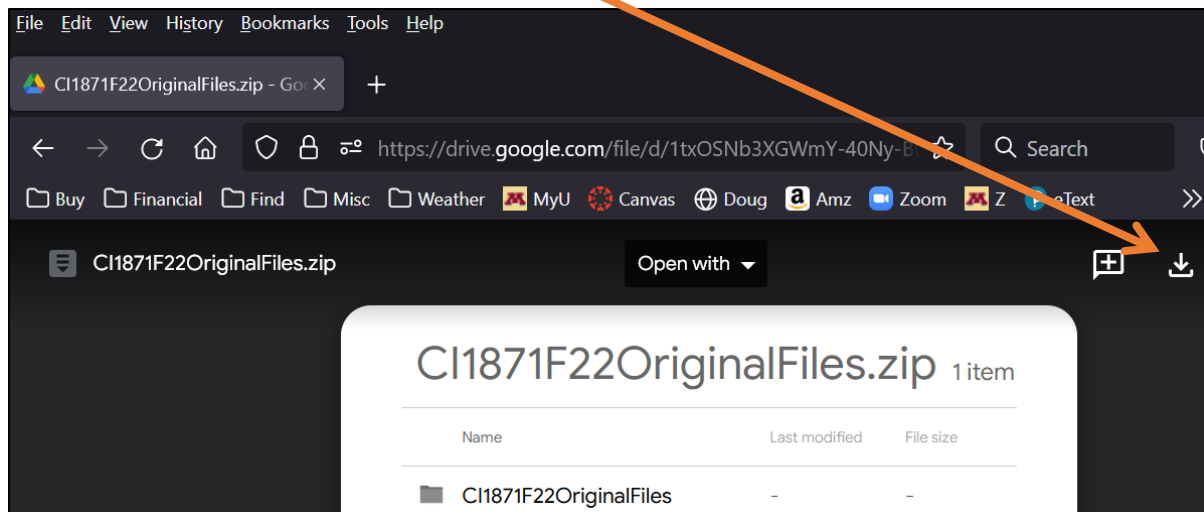
At the U, shortened URL’s all have the same first part, **z.umn.edu/**, which is easy to remember, and a unique second part, in this case **1871F22**, which is easy to remember within the context of this course. There is a short introduction to this service, which anyone can use, at z.umn.edu/zhelp

⁷ **HTTP** stands for **HyperText Transfer Protocol**. It is an application-layer protocol for transmitting hypermedia documents, such as HTML. It was developed in 1989 by Tim Berners-Lee at CERN to facilitate communication between web browsers and web servers. **HTTPS** is an extension of HTTP. It is used for **Secure** (encrypted) communication over a computer network.

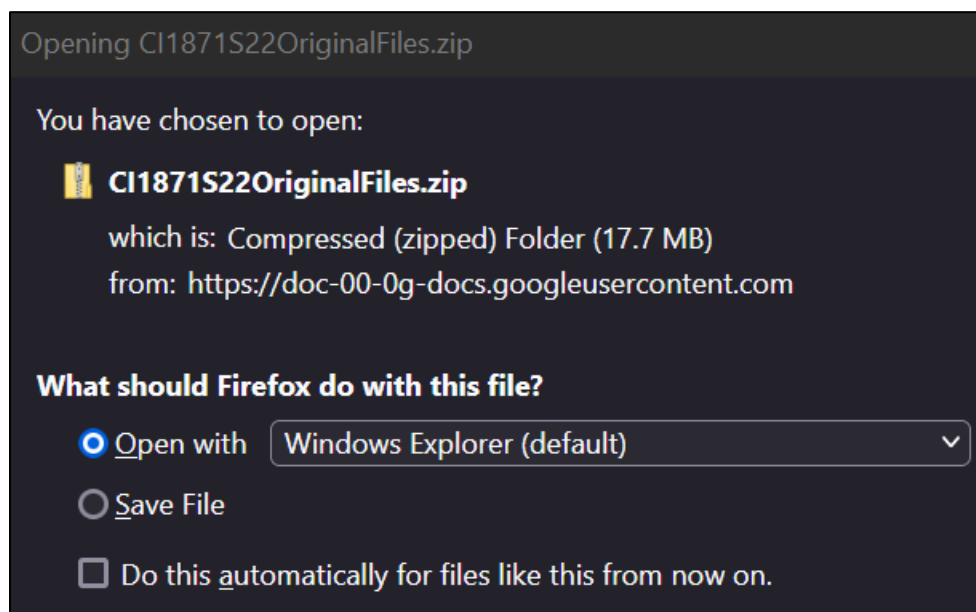
5. Tap **Enter**. Depending on your setup, you may have to sign into your U of M account. Google Drive will open and show the file. If you get this message



click **Download**. Otherwise, move the cursor to the icon in the upper right and click the download arrow.



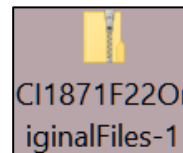
6. Google Drive may give you a warning that the file is too large to scan for viruses. In that case, click **Download anyway**. Depending on how your browser is set up, the **CI1871F22OriginalFiles** file may automatically go to your computer's **Downloads** folder or you might get a message like this:



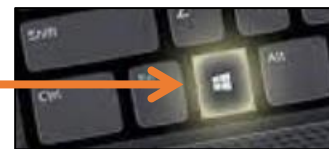
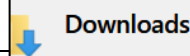
If you get the above message, click the button next to **Save File**.

7. Click **OK**.

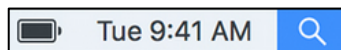
8. Close your browser. On your **Desktop** or in your **Downloads** folder, you should see the folder you just downloaded. Notice the zipper on the icon. To save time and space, the folder is compressed in **ZIP**⁸ format. If you do not see the zipper, your system may be set up to automatically UNZIP folders.



If you do not see the folder on your desktop, check your downloads folder by tapping the **Windows** key, typing **downloads** and clicking



Mac: Click the **Spotlight** icon, (the magnifying glass on the menu bar),



Type **downloads folder**. Under **Folders**, click **Downloads**

- b. If the folder has the zipper, **UNZIP** the folder by doing the following.

1. Point to the folder, right-click, and click **Extract All**.

Mac: Double-click the zipped folder to extract the files. Go to step 3.

The **Extract** dialog will appear. The box shows the location where the folder will be saved. Here is the location as it looks like on my computer:

Select a Destination and Extract Files

Files will be extracted to this folder:

C:\Users\droberts\Desktop\CI1871F22OriginalFiles

C:\Users\droberts\Desktop\CI1871F22OriginalFiles

C: represents the hard drive of my computer.

**** is a subdirectory delimiter (folder separator).

Users means my computer is set up for multiple users.

droberts is the part of the computer's hard drive I am using.

Desktop means the folder will be put on my desktop.


CI1871F22OriginalFiles is the name of the folder.

If the shown location is not what you want, click **Browse** and then navigate to your preferred location.

2. Once you have the proper location displayed, click **Extract**. In a few seconds you will see a new folder called **CI1871F22OriginalFiles**. The new folder contains folders for each section of the course (Excel, Word, PowerPoint, and Access, which is extra credit). Each folder contains the UNZIPPED files you will need. Notice that this folder has no zipper.
3. Open the folder and drag the four folders (**Access Files – EXTRA CREDIT**, **Excel Files**, **PowerPoint Files**, and **Word Files**) to your **CI 1871** folder.
4. You will not need the ZIPPED folder or the **CI1871F22OriginalFiles** folder any more so drag them to the Recycle bin.
5. Close any open windows. If you will be using your own computer, you can drag the **CI 1871** folder to any location you wish.

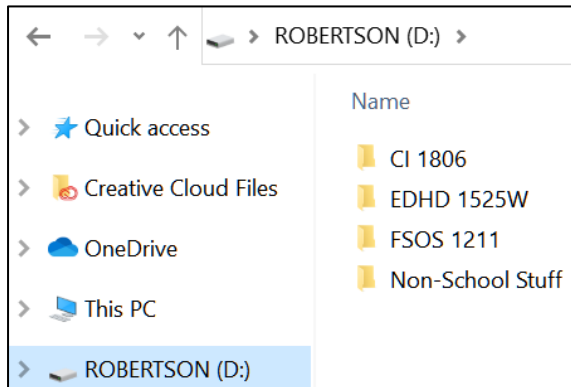
⁸ **ZIP** is an archive file format that may contain one or more files or folders that have been compressed. ZIP was created in 1989 by Phil Katz, who named it ZIP as in "move at high speed".

- c. **Skip this part c and go to part d if you will *not* be storing your work on a USB drive.** If you are not working on your own computer, you should store your files on a USB drive. To do so, insert it into one of the computer's USB ports. It should go in easily. There is a **right side up** so if it does not fit one way turn it over and try again, but gently.

To see the contents of your drive, click **File Explorer**  on the taskbar (or, hold down the Windows key  and tap the letter **e**, which stands for **Explorer**). Click your USB drive. It probably has a drive designator **D:** or **E:**

Mac: The USB drive will automatically appear on your desktop.

My screen looks like this:



The name of my USB drive is **ROBERTSON**. Several drive designators may be shown:

A: is for a floppy diskette drive (no longer used).

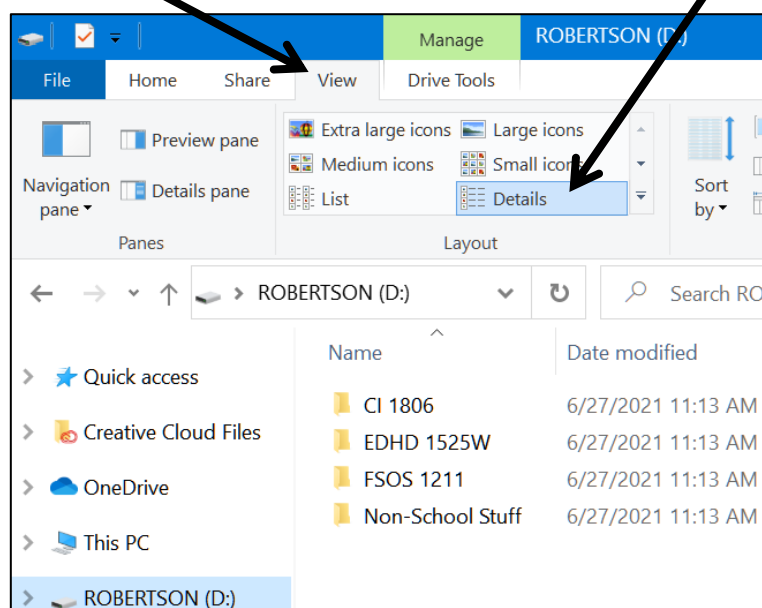
B: is for a second floppy diskette drive (no longer used).

C: is for the hard drive.

D: is for the DVD/CD drive. My computer has none, so D: is for my USB drive.

E: is for a USB drive.

Click the **Manage View** tab and, in the **Layout** group, click **Details**.



Drag the **CI 1871** folder to the USB drive window. This will copy the folder.

- d. When the textbook or this Study Guide asks you to save a file, save it to one of the folders in the **CI 1871** folder. To see how this works, do the following (this is part of your first homework project that you will submit for grading). Note that:

Word files are called **documents**

Excel files are called **workbooks**

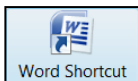
PowerPoint files are called **presentations**

Access files are called **databases**

1. Start Word by doing one of the following:



Option 1 If your computer has a tiny Word icon on the taskbar, click it **once**.



Option 2 If your computer has a Word icon on the desktop, click it **twice**.

Option 3 Tap the Windows key  type **word** and select **Word**.

Mac: Click the **Spotlight** icon (the magnifying glass), type **word**, and tap **Enter**.

2. After Word starts, click **Blank document**.

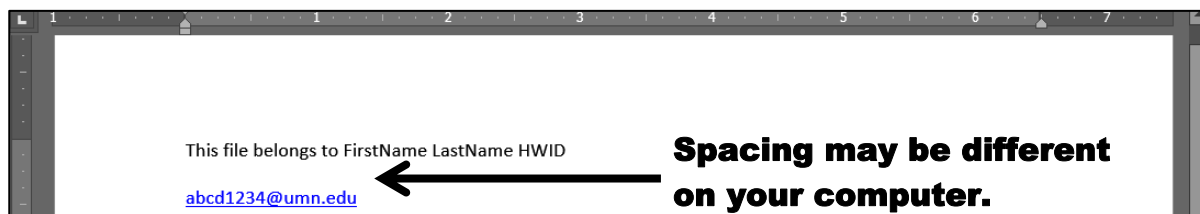
3. Type the following: **This file belongs to FirstName LastName HWID**, where **HWID** is the four-character homework ID I emailed you. Use your own names.



4. Tap the **Enter** key. The usual default line spacing in Word is 1.08 inch. The spacing on your computer may be different. It does not matter.

5. Type your **U of M email address**.

6. Tap the **Enter** key. Word may automatically underline the text, change its color to blue, and attach a hyperlink to it. Word does this because it recognizes the text as an email address and so applies its hyperlink style. If this happens, leave it as is. You will learn about inserting hyperlinks on page **SG148** and more on page **SG230**.



7. Tap **Ctrl + s** (that is, hold down the **Ctrl** key and, while keeping that key held down, tap the **s** key). This will open the **Save As** dialog box. This allows you to specify where you want your file saved and what name you would like to give it. You can also get here by tapping the **F12** function key.



If you are using a laptop, you may notice a key labeled **fn** on the bottom row of the keyboard. Because laptops have extra features, their keyboards typically do not have room for all the keys that are needed. The **fn** key allows the **function** keys to do double duty. For example, on my laptop, tapping the **F12** key increases the volume of the speaker. Holding down the **fn** key while tapping the **F12** key opens the **Save As** dialog box.

Mac: **Shift + Command + s** opens the **Save As** dialog box.

8. On the left, click **Browse** and navigate to the desktop.

File name:	This file belongs to FirstName LastName HWID
Save as type:	Word Document

Notice that Word is suggesting the first line of text in the file for the **File name**.

9. Click **Save**. The title bar shows the file name and that it was saved.

This file belongs to FirstName LastName HWID - Saved to this PC

Your computer may show the file name as **This file belongs to HWID FirstName LastName.docx**. The **.docx** is called a file name extension. It tells the computer what app to use when opening the file. Depending on how your computer is set up, it may or may not display the file name extension (mine does not). Here are some common extensions:

.docx Word	.xlsx Excel	.pptx PowerPoint	.accdb Access
.html Web page source text	.mov QuickTime Audio/Video		
.pdf Portable Document Format	.rtf Rich Text Format		
.wav Windows sound	.zip Compressed Archive		
.gif Graphic Interchange Format – for computer generated images with limited colors			
.jpg Joint Photographic Experts Group – good for photographs			
.png Portable Network Graphics – better than .gif for most purposes			
.tif Tagged Image File format – good for output from a digital camera			
.mp4 – good for storing video and audio			

Now, you are going to save the document using a different name.

10. Tap the **F12** key (**Shift + Command + s** on the **Mac**) or, click the **File** tab and select **Save As**. This will open the **Save As** dialog box. This allows you to save a copy of the file using a different name and/or in a different location.

11. Navigate to your **CI 1871** folder, double-click it, and double-click the **Word Files** folder to open it. You will see a list of all the Word files in that folder. If you do not see any files listed, check to see if the **Save as type:** box is set to

Save as type:	Word Document
---------------	---------------

12. In the **File name:** box, delete the suggested file name and type: **HW01-1 HWID Practice Save Done** where **HWID** is the four-character homework ID I emailed to you. If your **HWID** were **100A**, you would type this:

File name:	HW01-1 100A Practice Save Done	← Type this.
Save as type:	Word Document	← Be sure the file type is this.

13. Click **Save**. The file will be saved in the **Word Files** folder with the name **HW01-1 HWID Practice Save Done**
14. Quit Word by clicking the **X** in the upper right corner of the window.

Mac: Click the **Word** menu and select **Quit Word**, or tap **Command + q**.

Dictating Documents

If you have to type a large document and you are not a good typist, you might try Word's **Dictate** feature. You will need a microphone and Word 365 installed on your computer. The dictate icon is in the upper right corner of the Word window.



Click the icon and a red dot will appear in the icon showing you are being recorded. As you speak, the words will be typed on your screen. The transcription is good but not perfect so you will have to go back and do some editing. The process is a bit slow and in fact a good typist can go faster than the word recognition, but you might want to give this a try just to see how it works. Here's a web reference if you'd like more information <https://support.office.com/en-us/article/dictate-your-documents-d4fd296e-8f15-4168-afec-1f95b13a6408>

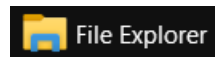
Finding Files

Windows has a powerful search engine that will help you find files without having to sift through layers of folders. You can search for files with particular names, contents, modification dates, and many other characteristics.

Mac: To search on a **Mac**, click the **Spotlight** icon, the little magnifying glass in the right corner of the menu bar. A nice video on **Mac** searching is at <https://www.youtube.com/watch?v=pXIFPtBNt5g>

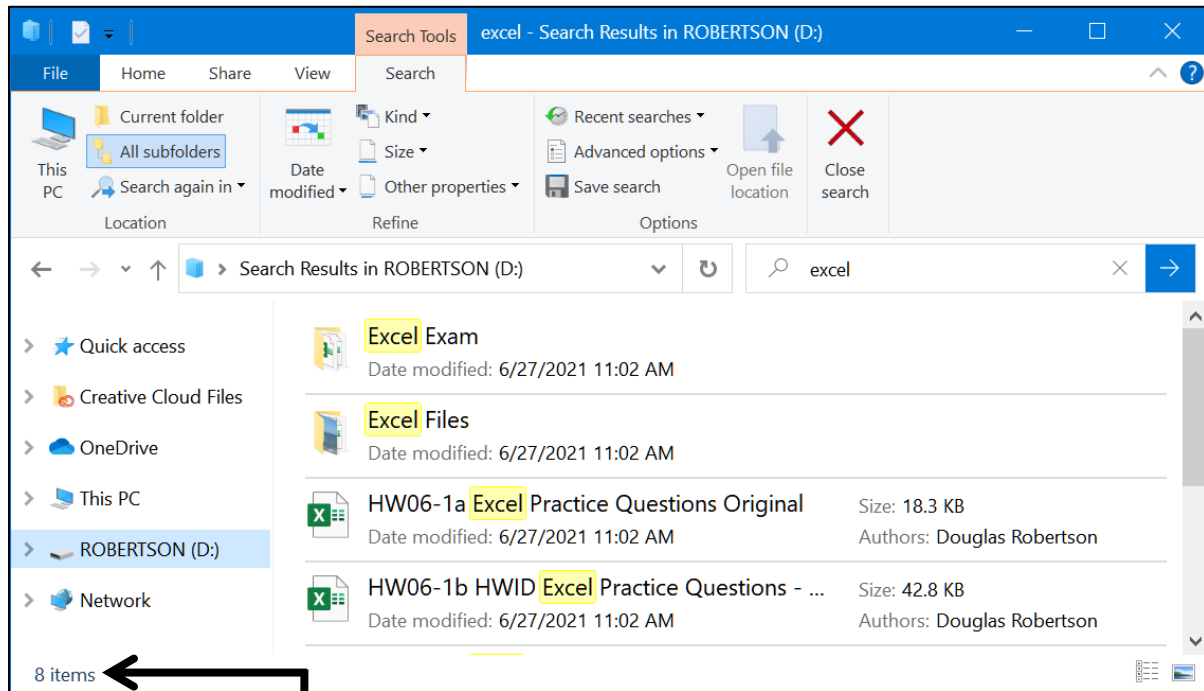
- a. To see how this works, read the following (you don't have to actually do it). If you try this yourself, your results will be different from mine because we are using different computers that contain different files and folders. In the illustration that follows, I searched my USB drive rather than my hard drive.

1. To open the USB drive, I clicked **File Explorer** on the taskbar. Tapping the **Windows key + e** also works (**e** for **Explorer**).



Then, I clicked my USB drive **ROBERTSON (D:)**

2. In the upper right corner of the window, I clicked inside the box that says **Search ROBERTSON (D:)**, typed **excel**, and tapped **Enter**. This searched the USB drive for files and folders whose name contains the letters **excel**. Capitalization of words does not matter so **Excel** or **EXCEL** will give the same result as **excel**.

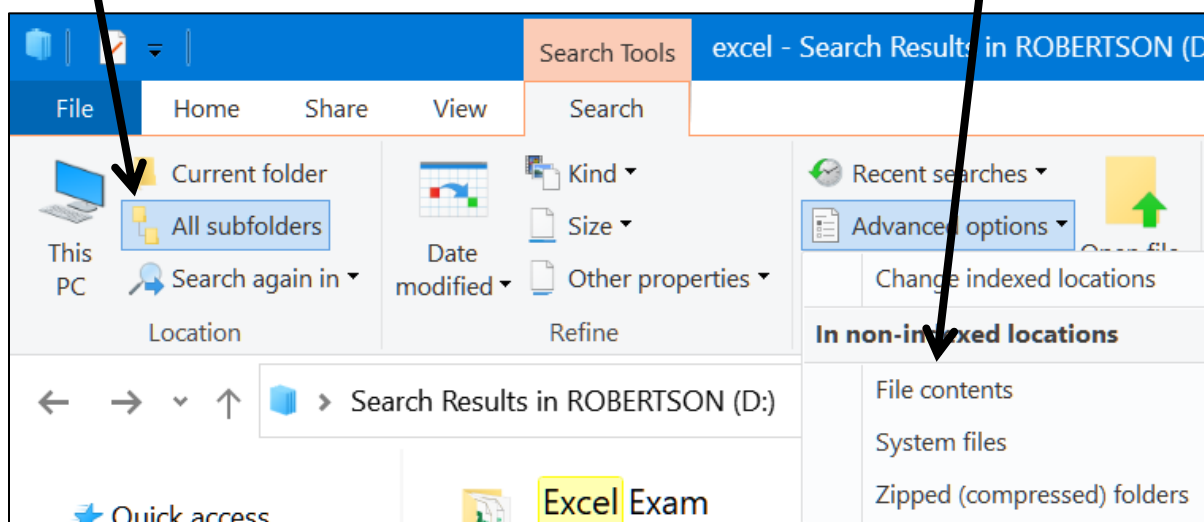


This found **8** items that have the word **excel** in their names (two folders and six files).

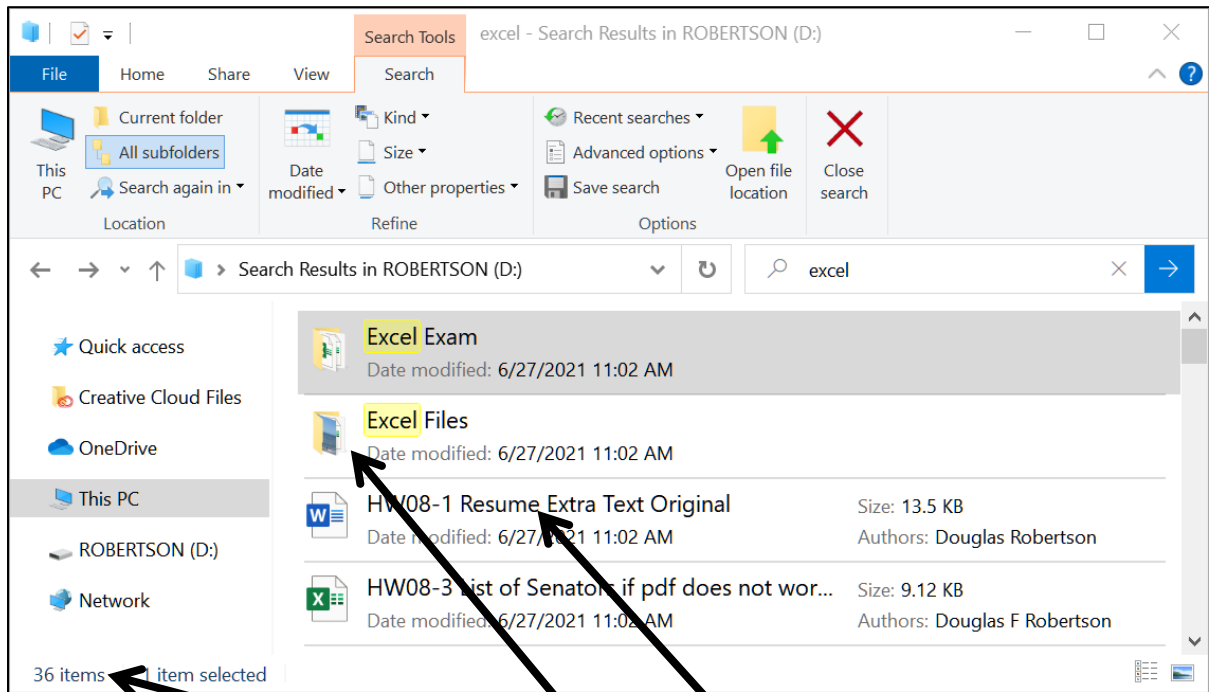
To open a file or folder, double-click its name.

To open the location of the file, right-click its name and select **Open file location**.

A new tab called **Search Tools Search** appears. On the **Search Tools Search** tab, in the **Location** group, be sure **All subfolders** is highlighted. Under **Advanced options**, be sure the three choices are NOT checked.

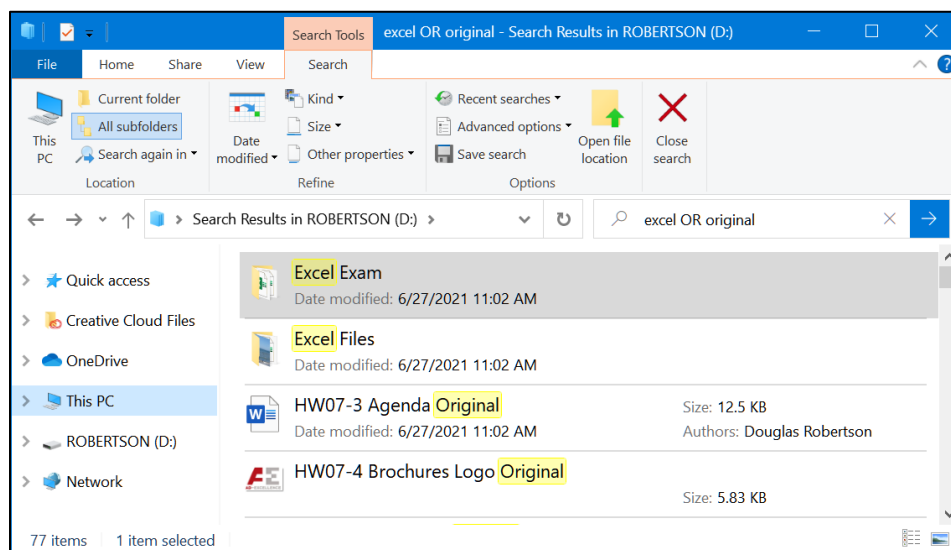


3. In the **Search Tools Search** tab, in the **Options** group, click **Advanced options** and check **File contents**. Now the search will include files that contain the word **excel** (or **Excel** or **EXCEL**) in their names **OR** in their contents.



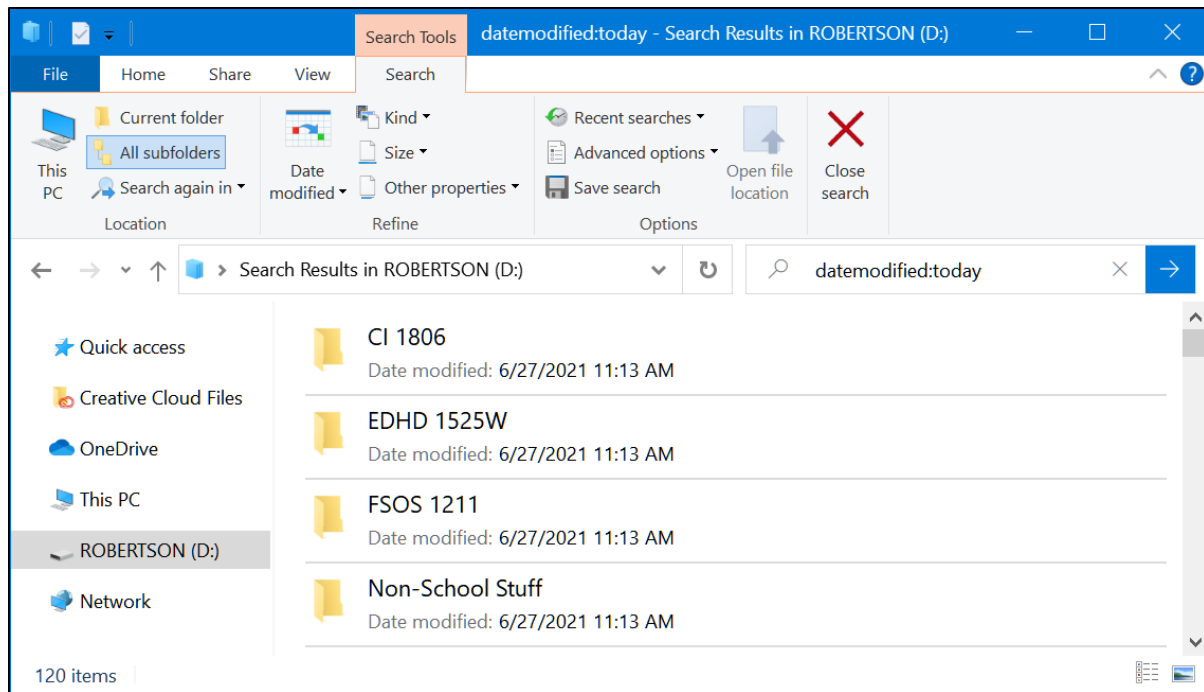
This returns 36 items. It lists folders and files that have **excel** in their names and also files that contain **excel** somewhere inside them.

- b. In searches, you can use Boolean operators⁹ such as **AND**, **OR**, and **NOT**. For example, typing **excel OR original** shows all files that contain either word. Typing **exc OR ori** lists the same files plus others that start with the letters **exc** (e.g., **exciting**) or **ori** (e.g., **origami**). You must use **UPPERCASE LETTERS** for the **operators**. Here, I got 77 hits.



⁹ Named after the 19th century English mathematician, philosopher, and logician George Boole, who is considered one of the founders of the field of computer science.

- c. You can search for items that were modified on specific dates. To show how this works, I deleted the text that was in the search box and then, on the **Search Tools Search** tab, in the **Refine** group, I clicked the **Date modified** arrow and selected **Today**. Notice the search box says **datemodified:today**.



Today is 27 June 2021. So far, I have modified 120 files and folders.

To find files or folders modified on a specific date, type the date (e.g., **7/28/18**).

To find files or folders modified within a range of dates, type the dates with two dots between them. For example, to find the names of files that were modified between April and August 2016, inclusive, in the search box type **datemodified:4/1/16..8/31/16**


Close all open windows. A nice YouTube video on advanced searching in Windows is at <https://www.youtube.com/watch?v=E37h8iyipl8>


Keyboard Shortcuts in Windows 10


An extensive list of Windows 10 keyboard shortcuts can be found at:


<https://support.microsoft.com/en-us/help/12445/windows-keyboard-shortcuts>

Mac: See <https://support.apple.com/en-us/HT201236> for a list of keyboard shortcuts. You can also see shortcuts by going to the **Apple** menu, clicking **System Preferences**, then **Keyboard**, then **Shortcuts**. Here, you can change a keyboard shortcut to a different key combination if you wish.

Below are some keyboard shortcuts that may save you time. The  symbol refers to the **Windows Key**, which is in the bottom row of the keyboard, second from the left and also to the right of the **Spacebar** and **Alt** keys.

 Open the **Start Menu**.

 + **d** **Minimize** all windows and show the desktop. Tapping this again restores all the minimized windows.

 + **e** Open the **File Explorer** (to show drives **C:**, **D:**, **E:**, etc.).


Ctrl + y **Redo** the last action.

Esc **Cancel** the current task.



Ctrl + F1 **Show or hide the Ribbon**. When you open a Word, Excel, or PowerPoint file, the top four lines of the window are called the **Ribbon**. If your computer has a small screen you may want to hide this so you can see more of your work. You can also do this by clicking the **Ribbon Display Options** button in the upper right corner of the window.



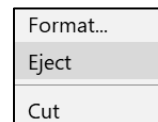
Mac: To show or hide the **Ribbon**, tap **Option + Command + r**.

Using symbols, this written as   r

Shutting Down the Computer

Before you shut down the computer or remove a USB drive, be sure to **close all open windows** (don't minimize them with this button , but click the close box  close them). Otherwise, you may lose some of your work.


If you are using a USB drive, to be doubly sure, right-click the name of the USB drive and click **Eject**. The message **Safe To Remove Hardware** will show in the lower right corner of the screen.



Mac: To eject a USB drive, drag it to the **Trash**. This will NOT erase it but simply unmount it from the operating system.

Pull out your USB drive. Don't wiggle it, just pull it straight out.

You now can safely shut down the computer.

To sign out of a computer in a campus computer lab or classroom, tap the **Windows** key, click your account icon  and select **Sign out**.

If you are using a campus computer anything you save to the hard drive **will be deleted** when the computer restarts so be sure to save all your work to a USB drive.

Step 3 Homework Projects

Do the following **four** homework projects and submit them for grading. Each begins with the statement of a **Problem** and then the activity guides you through the solution.

HW means
HomeWork


01 means
Project 1

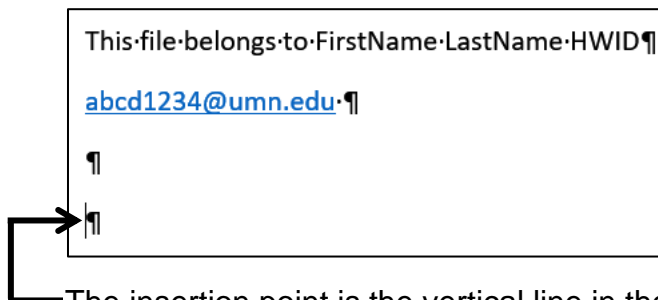
1 means
Problem #1


HW01-1 Practice Save

Problem: How can you open and save Word documents, make videos, and take screenshots?

a. Do the following:

1. Navigate to the **CI 1871** folder and double-click it.
2. Double-click the folder **Word Files**.
3. Double-click the file name **HW01-1 HWID Practice Save Done**, which you created while following the directions on page **SG16** of this Study Guide. This will open the file.
4. Move the insertion point to the end of the text in the document by pressing **Ctrl + End**. On a laptop, you may have to hold down the **Fn** key as well as the **Ctrl** key as you tap the **End** key. If neither work, use the **Down Arrow** key on the keyboard. The insertion point should be just to the right of your email address.
5. Tap **Enter** twice to insert a blank line.
6. So you can see where the **Enter** key was tapped, on the **Home** tab, in the **Paragraph** group, click the **show/hide** button. 



The insertion point is the vertical line in the lower left corner. The  are where the **Enter** key was tapped.

7. Type **I am using a XXX computer**. Here, **XXX** is either **Windows** or **Macintosh**.
8. Tap **Enter** and then type **I am using the YYY textbook**. Here **YYY** is either **Print** or **Electronic**.
9. Tap **Enter** twice to insert a blank line.


10. Type the following on separate lines but replace **DATE** and **TIME** with the proper date and time each exam is to be submitted to Canvas:
1871 Excel exam is due on DATE at or before TIME.
1871 Word exam is due on DATE at or before TIME.
1871 PowerPoint exam is due on DATE at or before TIME.
Mark on your calendar the dates and times for each exam.
11. Tap **Enter** twice to insert a blank line.
12. Type **Below is the screenshot of the name of the video I just made:**
13. Tap **Enter** twice to insert a blank line.
14. Save the file but **do not close it**.

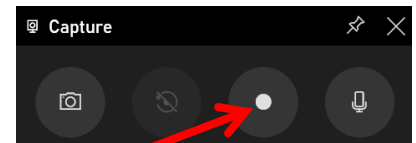
Both Windows and **Mac** have screen recording capabilities that come free with the operating systems. Recording is useful if you want to create a tutorial for someone, such as using an app like Excel, or to capture game play.

b-**Win**. The following directions are for **Windows**. If you are a **Mac** user, skip to page **SG25**.

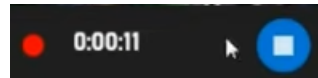
The Windows screen recording utility is called **Xbox Game Bar**. You do NOT need Xbox to use this. The app comes free with Windows 10. Note that the screen recorder cannot capture some programs, such as **File Manager** or the entire **Desktop**. A nice YouTube tutorial on how to do screen recording in Windows is at https://www.youtube.com/watch?v=mVJsm_000c0

To see how it works, do the following. Begin with your **HW01-1 HWID Practice Save Done** open and the insertion point at the top of the file.

1. To open the **Xbox Game Bar**, tap **Win + Alt + g** (that is, hold down the Windows key  and the **Alt** key and tap the **g** key). The **Capture** window is the one you are interested in.




2. To start recording, tap **Win + Alt + r** or click the record button. In a couple of seconds, you will see a small window showing the recording time:



3. Select the first line, **This file belongs to...**, and tap **Ctrl + b** to make it bold.
4. To see how the sound recording works, say something like **I just bolded the first line**
5. Select the third and fourth lines of text. On the **Home** tab, in the **Font** group, click the font icon arrow and select red.

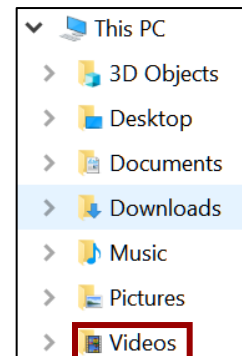
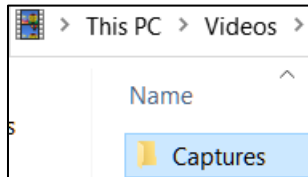


- Stop the recording by tapping **Win + Alt + r** again or click the record button  again. You should see a confirmation of success of the recording.

The recording is in your **Videos** folder.



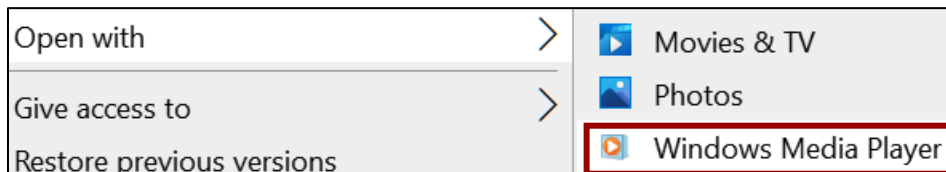
- Tap **Win + e** and under **This PC**, double-click your **Videos** folder. Then, double-click the **Captures** folder.



There you will see the **MP4** file you just created.




- Right-click the file name, click **Open with**, and select **Windows Media Player**.

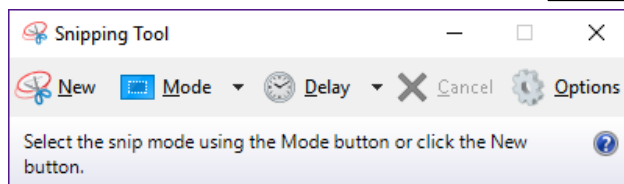
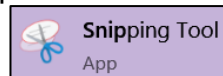



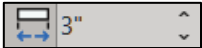
The video should start automatically. If not, click the **Play** button. 

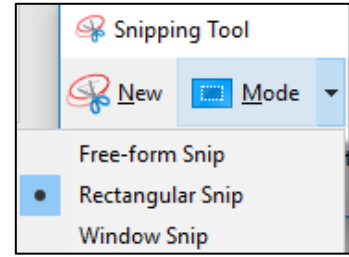
When the video stops, close the **Media Player** window by clicking the **X** in the upper right corner of its window, or by tapping **Alt + F4** (that is the **F4** key, not the letter f and the numeral 4).

c-Win. Take a screenshot of the properties of the **MP4** video file in the **Captures** folder and paste it into your **HW01-1 HWID Practice Save Done** file by doing the following:

- With the **Captures** folder open, right-click the **MP4** file name and select **Properties**.
- Tap the Windows key  and type **snip**. Windows will list files on your computer that contain the word **snip**. Windows puts the names of apps at the top of the list.
- Click **Snipping Tool** to open the app.



4. Click **Options** and be sure **Always copy snips to the Clipboard** is checked.
5. Click **OK**.
6. Click **Mode** and select **Rectangular Snip**. The screen will look washed out and a white cross will appear.
7. Drag the white cross around the **Properties** dialog box. When you let up the mouse button a picture will be placed on the clipboard and a sample of what you have captured will be shown.
8. Close the **Snipping Tool** by clicking the **X** in the upper right corner of its window. If asked to save changes, click **No**.
9. Move the cursor to the bottom of your **HW01-1 HWID Practice Save Done** window, tap **Enter**, and then tap **Ctrl + v** to paste the screenshot.
10. Double-click the image. On the **Picture Format** tab, in the **Picture Styles** group, click **Picture Border**. 
11. On the **Picture Format** tab, in the **Size** group, type **3** in the width box. 
12. Save the file and close all windows.




If you are a **Windows** user, skip the next two sections, b-**Mac** and c-**Mac** and continue your work on section **d** on page **SG26**.

d-**Mac**. The following directions are for **Mac** users.

The **Mac** screen recording utility is done through the QuickTime app. A nice YouTube tutorial on how to do screen recording on the **Mac** is at <https://www.youtube.com/watch?v=RttodbaTXGA>


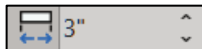
To see how it works, do the following. Begin with your **HW01-1 HWID Practice Save Done** open and the insertion point at the top of the file.

1. Click the **Spotlight** icon (little magnifying glass on menu bar), type **QuickTime**, and tap **Enter**.
2. From the **File** menu, click **New Screen Recording**.
3. At the bottom of the screen, click the **Options** arrow and be sure **Save to** is set to **QuickTime Player**, **Timer** is set to **None**, and **Microphone** is set to **Built-in Microphone**.
4. Click the **Options** menu once more to close it and then click **Record**.
5. Select the first line, **This file belongs to...**, and tap **Command + b** to make it bold.
6. To see how the sound recording works, say something like **I just bolded the first line**

7. Select the third and fourth lines of text. On the **Home** tab, in the **Font** group, click the font icon arrow and select red.
8. To stop the recording, on the **Menu** bar, click the stop button .
9. Quit the **QuickTime** player. The file with the video should be on your **Desktop**.
10. Right-click the file name, click **Open with**, select **QuickTime**, and click the **Play** button. When the video stops, quit **QuickTime**.

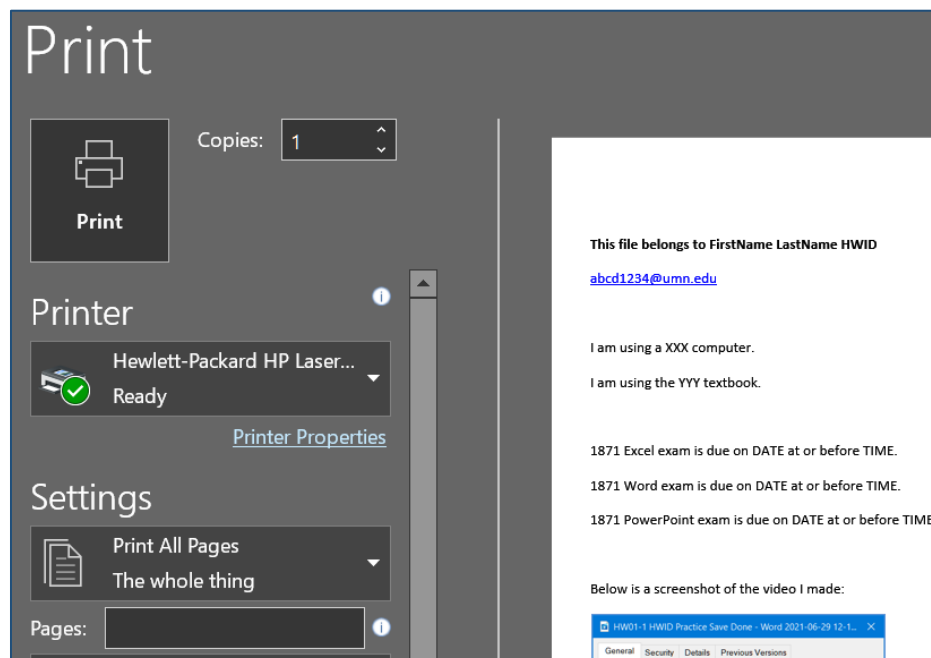


e-**Mac**. Take a screenshot of the properties of the video file and paste the screenshot into your **HW01-1 HWID Practice Save Done** file by doing the following:

1. Right-click the video's icon and select **Get Info**.
2. Tap **Shift + Ctrl + Command + 4**. A black cross will appear.
3. Drag the black cross over the screen recording info window from the top to just above **Comments**.
4. Move the cursor to the bottom of your **HW01-1 HWID Practice Save Done** window, tap **Enter**, and then tap **Command + v** to paste the screenshot.
5. Double-click the image and, on the **Picture Format** tab, in the **Picture Styles** group, click **Picture Border**. .
6. On the **Picture Format** tab, in the **Size** group, type **3** in the width box. 
7. Save the file and close all windows.

f. For this course, you will submit to Canvas electronic copies of your files. However, for other purposes you may want to print your documents on paper. To be sure you know how to do this, make a hard copy of **HW01-1 HWID Practice Save Done** by doing the following:

1. Tap **Ctrl + p** to display the **Print** dialog box.

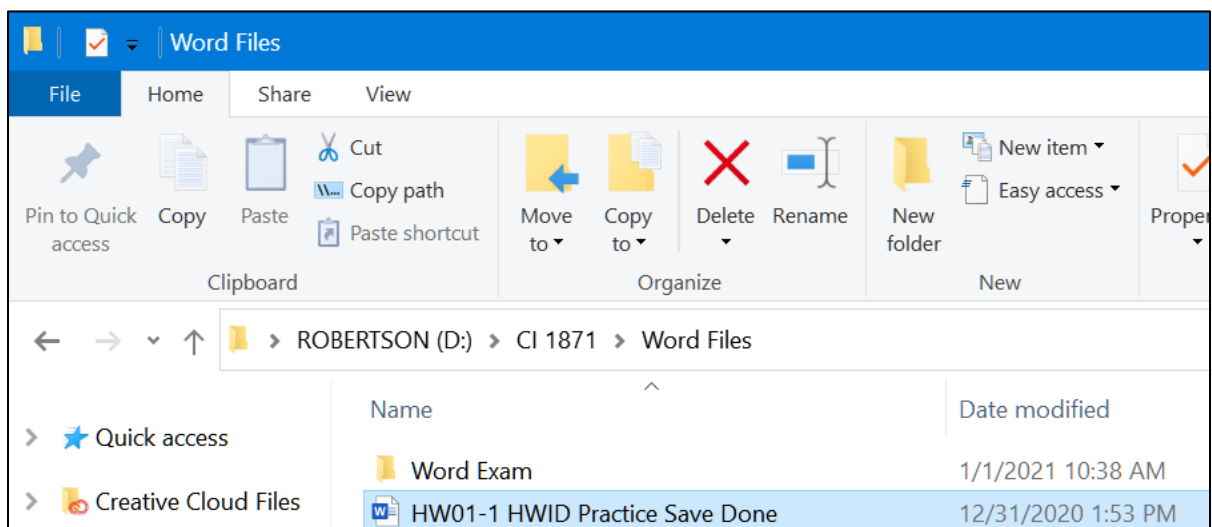
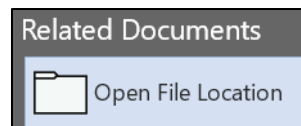


2. Compare the preview with the key on page **SG399** of this Study Guide. If you need to make corrections, tap the **Esc** key (upper left corner of the keyboard) to get back to edit mode and then make your changes. Don't print at this time. Tap the **Esc** key to cancel printing.
- g. Do the following to locate the folder where **HW01-1 HWID Practice Save Done** is saved. This is useful when you are working with several files and drives.

Mac: On the menu bar, click **File**, click **Properties**, and then click the **General** tab. To the right of the word **Location** you will see the path of the file location. If you want to open that folder, copy the path, click the **Finder** icon (smiley face at the bottom of the screen), click **Go** from the menu bar, and select **Go to Folder**. Paste the location in the box and click **Go**. Skip to step **2** below.

1. Click the **File** tab to open **Backstage** view. On the left, click **Info**. This provides information about the file.

In the lower right corner, click **Open File Location**. This opens the folder that contains the file.



Check to be sure your file is in the correct place it (should be in the **Word Files** folder).

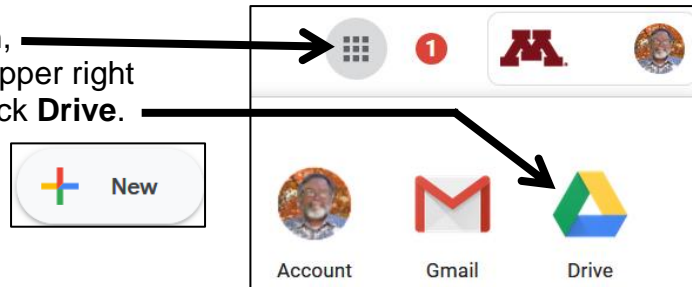
2. Close the folder you just opened.
 3. Tap the **Esc** key to close **Backstage** view and return to normal view.
- h. Save **HW01-1 HWID Practice Save Done**, quit Word, and close all windows. Rather than paper copy, you are going to submit your output to Canvas for grading. Instructions showing how to do this are on page **SG33**. Don't do it now.

HW01-2 Saving Files to Google Drive

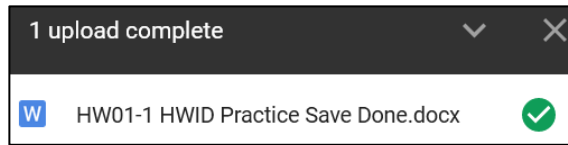
Problem: How can you save files so they can be accessed from any computer that has an internet connection?

When you set up your computer filing system on page **SG11** you accessed files that I had put on **Google Drive**. In this project, you will experience uploading your own file to **Google Drive**.

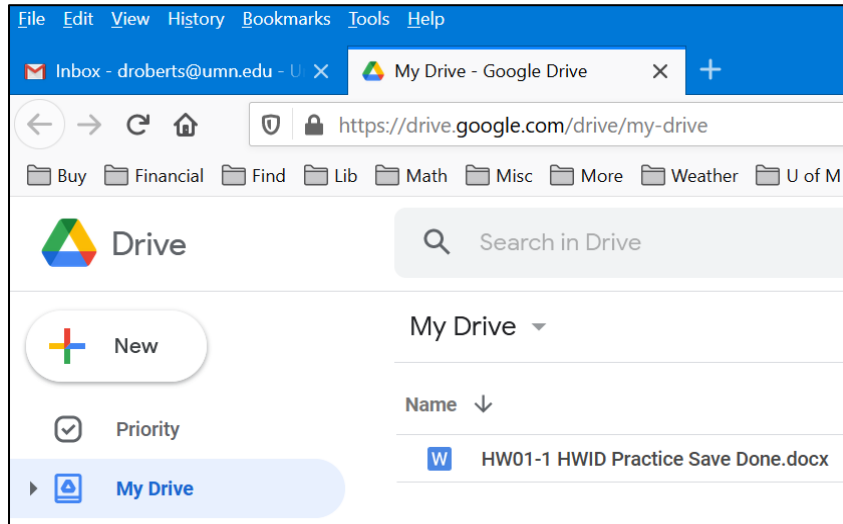
- a. Create a new Word document by doing the following:
 1. Start Word and open a new blank document.
 2. Type **HW01-2 HWID**, where **HWID** is your four-character homework ID.
 3. Tap **Enter**.
 4. Tap **Ctrl + s**, navigate to your **Word Files** folder, and save the document using the name **HW01-2 HWID Google Drive Done**. Do **NOT** close Word.
- b. You can access **Google Drive** by typing **google.com/drive** in the address bar of your internet browser or by selecting **Google Drive** from the **Google apps** button if your U of M email is open. Do the following:
 1. Start a web browser, type **mail.umn.edu** in the address bar, and tap **Enter**.
 2. Type your Internet ID (the characters in your U of M email address to the left of the @ symbol), type your email password, and click **Sign In**.
 3. Click the **Google apps** button, (the nine tiny squares in the upper right corner of the window), and click **Drive**.
 4. At the left of the window, click **New** and then click **File upload**.



5. Navigate to your file **HW01-1 HWID Practice Save Done** and double-click. In a few seconds, you will see the confirmation **1 upload complete** message.



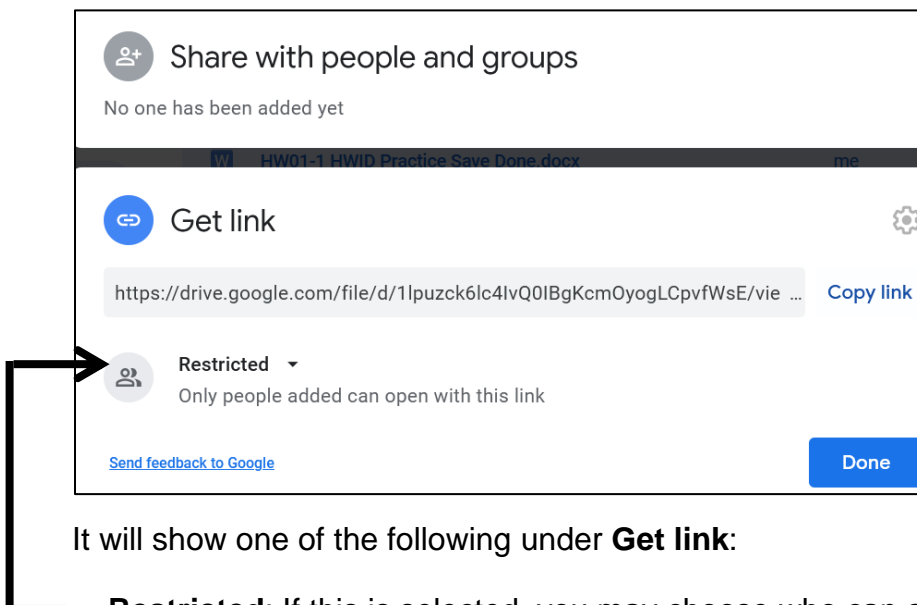
Under **My Drive**, you will see the file name.



6. In the upper right corner of the confirmation window, click the **X** to close the **1 upload complete** window.

Now, you need to specify who can access your uploaded file.

7. Right-click the file name and select **Get link**.



It will show one of the following under **Get link**:

- **Restricted**: If this is selected, you may choose who can access the file by clicking under **Share with people and groups** and then entering the email addresses of those with whom you would like to share the file. Nobody else will be able to access the file.

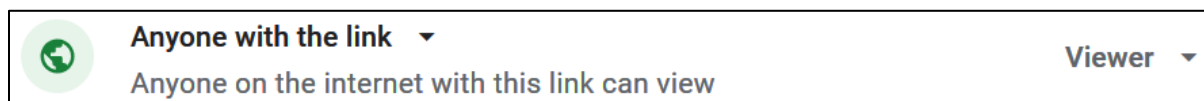
- **University of Minnesota Twin Cities:** If this is selected, only those at the U of M Twin Cities campus with this link will be able to view the file.
- **Anyone with the link:** If this is selected, anyone on the internet who has the link can view the file.

8. Click the down-arrow and choose **Anyone with the link**.

9. On the right, you will see one of the following:

- **Viewer:** People can see the contents and download it.
- **Commenter:** People can post comments on your document.
- **Editor:** People can edit your document.

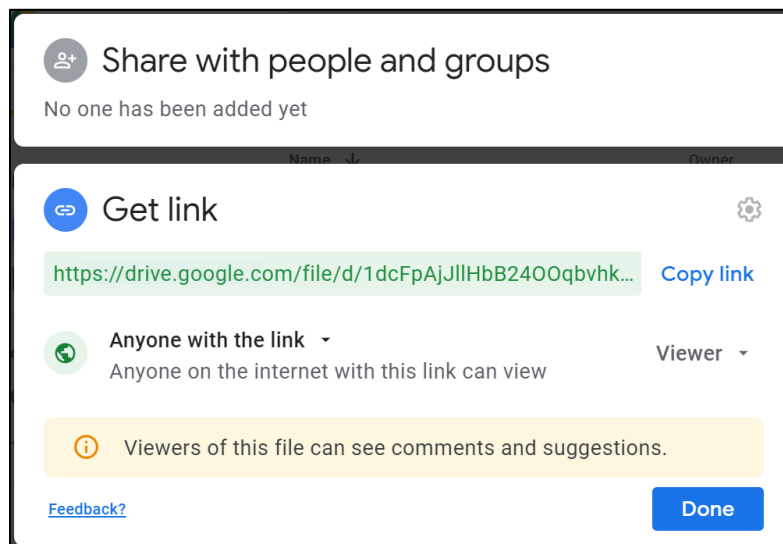
To **not** allow others to change the file, be sure **Viewer** is selected.



10. Click **Copy link**. The link is now on the clipboard. You can send it to anyone you want to be able to view your file.

c. Do the following to paste an image of the **Google Drive Share** window into your **HW01-2 HWID Google Drive Done** file.

1. Take a screenshot of the **Google Drive Share** window:



2. Click **Done** in the **Google Drive Share** window to close it and then close your web browser.

3. Switch to **HW01-2 HWID Google Drive Done** file and tap **Ctrl + v** to paste the screenshot.

d. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save **HW01-2 HWID Google Drive Done**, and close it.

HW01-3 PDF and Compressed Files

Problem: How can you send files to others so that they will be able to view them as they would appear on your computer?

If you want someone to have access to one of your files you could put it up on Google Drive or email it as an attachment. Emailing files to yourself or others may require special handling. Email clients, like Gmail, usually have a size limitation. The file size limit for Gmail is 25 megabytes which means that you can send up to 25 MB in attachments. If you have more than one attachment, they can't add up to more than 25 MB. If your file is greater than 25 MB, Gmail automatically adds a Google Drive link in the email instead of including the file as an attachment.

Also, because different printers require different setup parameters, if you email a file to someone the formatting on that person's computer may not look exactly like it did on your computer. Or, that person may not have Word or Excel or PowerPoint and so could not open the file. You can get around some of these limitations by saving files in **Portable Document Format** (pdf). It is designed to represent documents in a manner independent of application software, hardware, and operating systems. Let's see how this works.

a. Convert a Word file to a pdf file by doing the following:

1. Navigate to your **Word Files** folder and open the document **HW10-1 Character Styles and Declaration Original**, which is one of the files you downloaded at the start of the term. You will use this file again in Project 10.
2. Tap the **F12** key (**Shift + Command + s** on the **Mac**) to open the **Save As** dialog box. Remember, on a laptop, you may have to use the **fn** key also.

In the **File name** box type **HW01-3 HWID-a Pdf Done**

Just below this, on the right, click the **Save as type** arrow (**File Format** on the **Mac**) and select **PDF**.

File name:	HW01-4 HWID-a Pdf Done
Save as type:	PDF

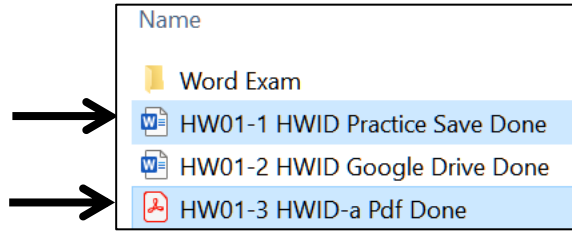
3. Click **Save** (**Export** on the **Mac**). An accurate copy of this file now can be opened by any computer with the aid of **Adobe Acrobat Reader**, an app that is available free from <http://get.adobe.com/reader/?promoid=JZEFU>
4. If necessary, close the newly created pdf file. Also, close **HW10-1 Character Styles and Declaration Original** without saving changes to it.

b. Do the following to email to **yourself** (NOT me!) a compressed folder that contains some files:

1. Navigate to the **Word Files** folder.
2. Click **ONCE** the icon just to the left of file name **HW01-1 HWID Practice Save Done**.

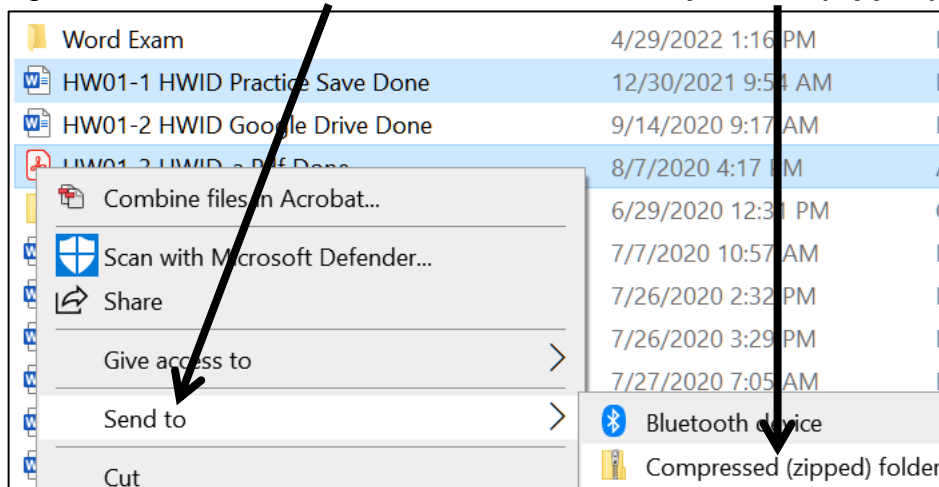


- Hold down the **Ctrl** key (**Command** key on the **Mac**) and click the icon for **HW01-3 HWID-a Pdf Done**.



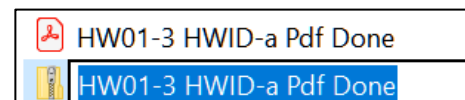
At the bottom of the window, the status bar will show **2 items selected**.

- With the arrow pointing at the icon next to file **HW01-3 HWID-a Pdf Done**, right-click, select **Send to**, and then select **Compressed (zipped)** folder.



Mac: Right-click and select **Compress**.

A new **zipped** file is created. Its icon is a folder with a zipper.




- Right-click the name on the zipped folder, select **Rename**, type **HW01-3 HWID-b ZIPPED Done**, and tap **Enter**.

- Open your email app and compose an email with the message: **Attached is the compressed file**.

- Type **your own** email address in the **To** box and **HW01-3** in the **Subject** box.

To YOUR EMAIL ADDRESS
HW01-3
Attached is the compressed file.

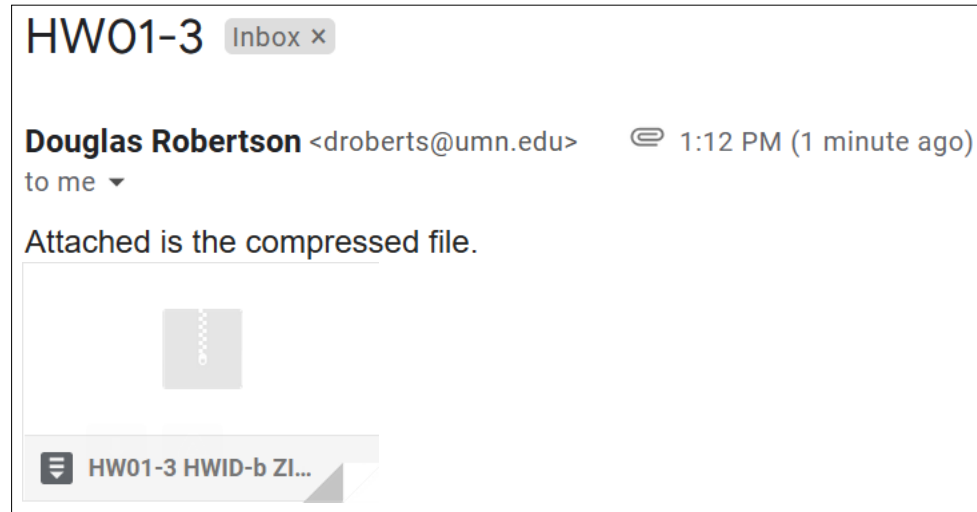
- If you are using Gmail, click the paperclip icon  near the bottom of the window to attach the file to the email. If you are using a different email app it will look a bit different. Navigate to your **Word Files** folder and double-click **HW01-3 HWID-b ZIPPED Done**. The file will be attached to the email.

HW01-4 HWID-b ZIPPED Done.zip (113K)

- Send the email **to yourself** (NOT to me).

c. Do the following to create your homework file:

1. Start Word and open a new blank document.
2. Type **HW01-3 HWID** (use your own **HWID**), and then tap **Enter**.
3. Open your email app and then open the email you just sent to yourself.
4. Take a screenshot of the email. It should look something like this:



5. Click at the end of the new Word document and then tap **Ctrl + v** to paste the screenshot into the document.
 6. Place a black border around the screenshot (**Picture Format**, **Picture Styles**, **Picture Border**).
- d. Tap **Ctrl + p** and compare the preview with the key. Obviously, your screenshot will be different from mine but that is fine. Make needed corrections and then save the document using the name **HW01-3 HWID-c Compressed Files Done**, close it, and exit Word.

Step 4 Submit Now you are ready to submit your first homework project for grading. Rather than submitting paper copy, you will upload to Canvas a ZIPPED folder that contains **pdf versions** of the following files:

HW01-1 HWID Practice Save Done – Saved on page **SG27**

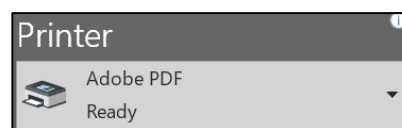
HW01-2 HWID Google Drive Done – Saved on page **SG30**

HW01-3 HWID-c Compressed Files Done – Saved on page **SG33**

Follow the steps below to submit your homework to Canvas:

- a. Create a pdf version of **HW01-1 HWID Practice Save Done** by doing the following:
 1. Open **HW01-1 HWID Practice Save Done**.
 2. Tap **Ctrl + p** to open the **Print** dialog box. Check the print preview to be sure the output is what you want. If necessary, close the **Print** dialog box and fix things.

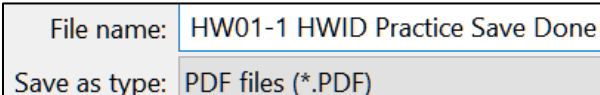
3. If necessary, tap **Ctrl + p** to open the **Print** dialog box again. Click the arrow under **Printer** and select **Adobe PDF**.



4. Click **Print**.

Mac: In the lower left corner, click the **PDF** arrow and select **Save as PDF**.

5. In the **File name** box, enter **HW01-1 HWID Practice Save Done** (use your HWID).



6. Navigate to the **Desktop** and click **Save**.

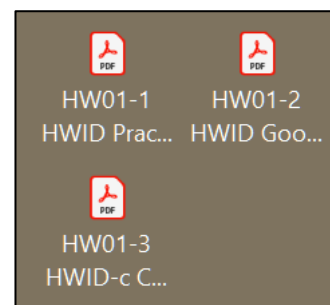
7. Close **HW01-1 HWID Practice Save Done**.

- b. Repeat the process for the other two homework problems for project **HW01** so that all three pdf files are on your Desktop. The pdf file names should be:

HW01-1 HWID Practice Save Done

HW01-2 HWID Google Drive Done

HW01-3 HWID-c Compressed Files Done

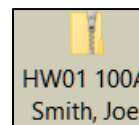


- c. Do the following to create a ZIPPED folder that contains your pdf files:

1. On your desktop, right-click and select **New, Folder**. Name the folder **HW01 HWID LastName, FirstName**. For this example, I will use **HW01 100A Smith, Joe**.
2. Drag the three pdf files for **HW01** into this folder.
3. Right-click the folder, select **Send to**, and then **Compressed (zipped) folder**.

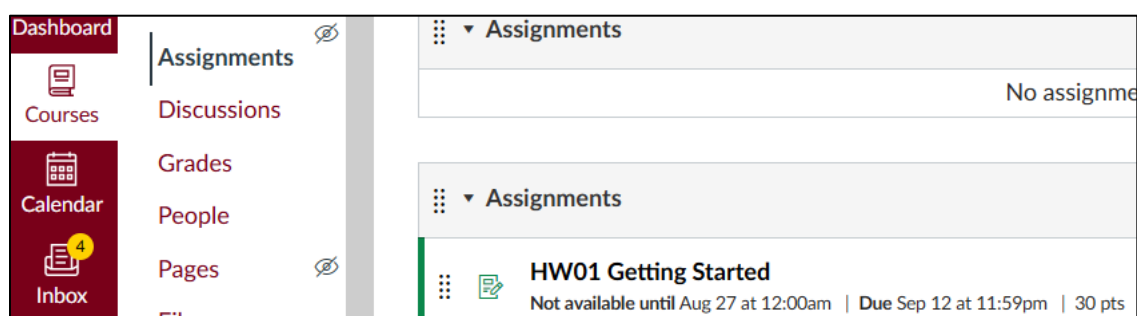
Mac: Click **Compress "HW01 100A Smith, Joe"**

A new **zipped** file will be created. Its icon is a folder with a zipper.

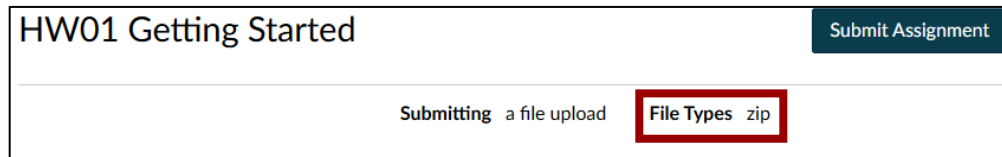


- d. By the due date, upload this folder to Canvas by doing the following:

1. Open your Web Browser, type <https://canvas.umn.edu/> in the address bar, and tap **Enter**. You will be asked to log in using your U of M internet ID.
2. On the menu on the left, click **Courses** and click **CI 1871 (00n) Computer Literacy and Problem Solving (Fall 2021)**. In **00n**, the **n** is your section number (**1, 2, 3, or 4**).
3. On the menu on the left, click **Assignments**.



4. Click **HW01 Getting Started**.



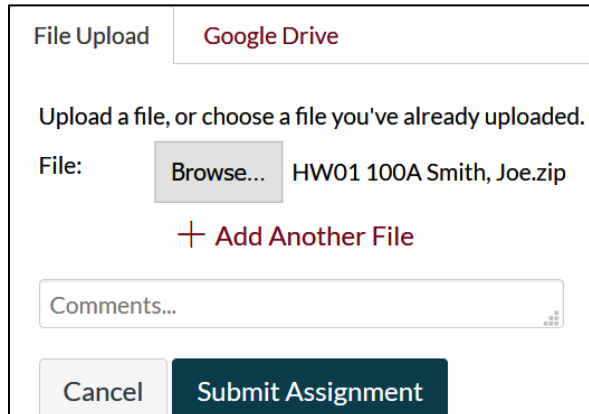
HW01 Getting Started

Submit Assignment

Submitting a file upload

File Types zip

5. On the right, click **Submit Assignment**.
6. Click **Browse**, navigate to your **ZIPPED HW01 100A Smith, Joe** folder, and double-click it.



File Upload Google Drive

Upload a file, or choose a file you've already uploaded.

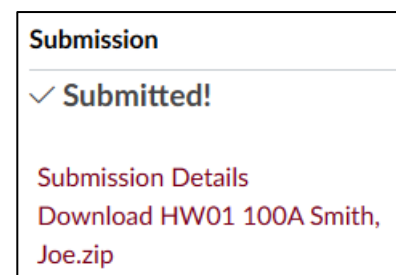
File: Browse... HW01 100A Smith, Joe.zip

+ Add Another File

Comments...

Cancel Submit Assignment

7. Click **Submit Assignment**.
8. On the right, you will see a confirmation.
9. Close your browser.



Submission

✓ Submitted!

Submission Details

Download HW01 100A Smith, Joe.zip

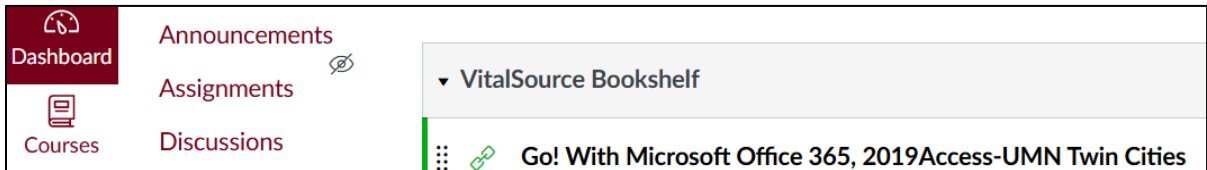
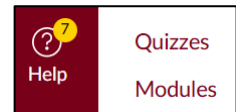
Step 5 Backup Now would be a good time to backup your files. It will take only a minute or two to copy your files from their current location to your computer's hard drive, or to another USB drive, or to upload them to Google Drive.

Project 2

Excel Chapter 1: Creating Worksheets and Charts


This is the first project from the textbook. Some students will be using the **printed textbook** while others will be using the **eText**. Both versions have the same content but look a bit different.

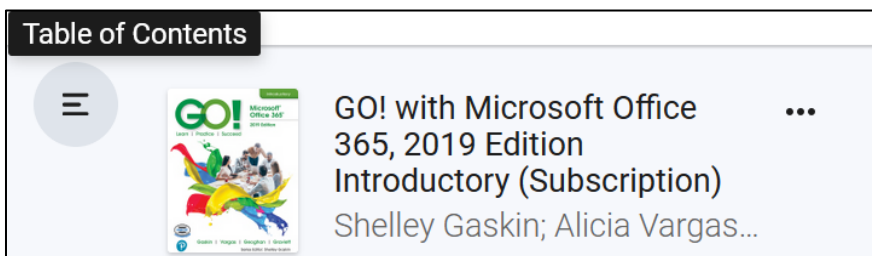
To access the eText, go to your Canvas page and click **Modules**. Then, click the textbook link.




Then, click **Load Go! With Microsoft Office...**

Load Go! With Microsoft Office 365, 2019Access-UMN Twin Cities in a new window

To **see or hide** the Table of Contents, click the **Menu** icon  in the upper left corner.

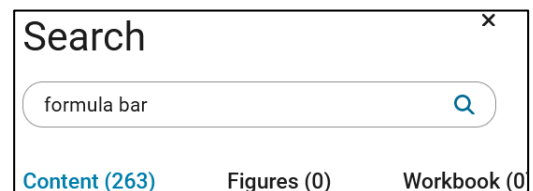


To adjust font, size, and margins, click the **Reader Preferences** button  in the upper right corner.

To search for something, click the **Search** icon  in the upper right corner.

This allows you to search for text. For example, if you type **formula bar** and tap **Enter**, you will get 263 hits.


If you are using the print text, lookup **formula bar** in the **Index** at the back of the book.



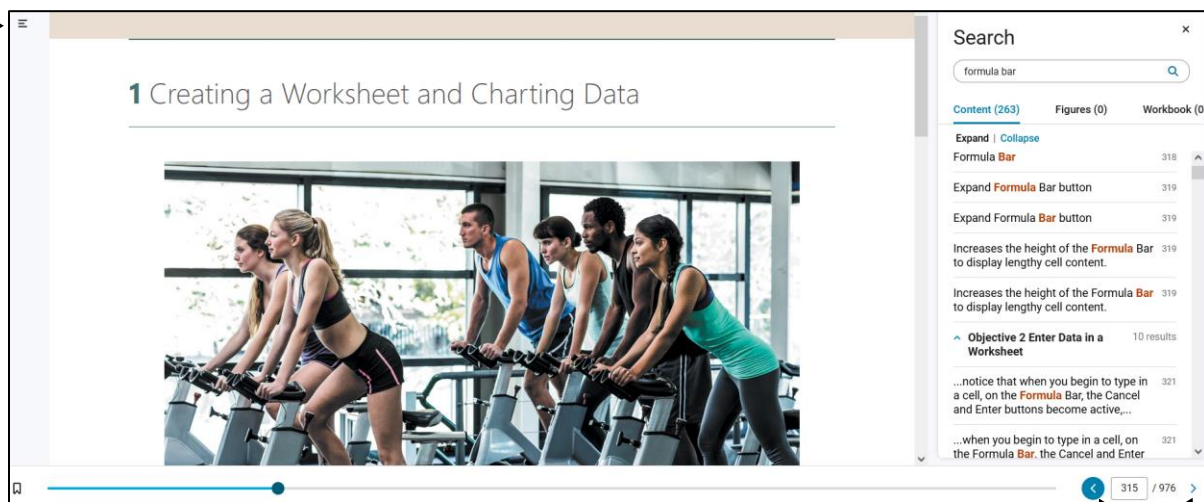
Clicking one of the entries will take you to that spot in the text. For example, clicking

Formula Bar 318

will take you to page 318 where you will see:

Formula Bar  Displays the value or **formula** contained in the active cell;

When this Study Guide tells you to go to a specific page, type the number in the box in the lower right corner of the window. For example, to go to page 315, type it in the box and tap **Enter**.



Click the left or right arrows next to the page numbers to move forward or backward by one page.

Click the menu icon to open or close the Table of Contents.

Click the **X** to the right of **Search** to close its window.

Now, let's get started.

Step 1 Read Read the introductory material on page 315.

Step 2 Activities Click the arrow on the right to go to the next page, 316.



Figure 1.1 is a picture of how your output will look after you finish the textbook activities for **Project 1A**. This is not the final result for **Project 1A** that you will submit because you will add to it by following the instructions in this Study Guide starting on page **SG40**.

We will not use MyLab IT so **SKIP Project Files for MyLab IT Grader**.



Project Files for MyLab IT Grader

**In the
Print Text
do NOT
do this.**

1. In your storage location, create a folder named **Excel Chapter 1**.
2. In your MyLab IT course, locate and click **Excel 1A Quarterly Sales**, Download Materials, and then Download All Files.
3. Extract the zipped folder to your Excel Chapter 1 folder. Close the Grader download screens.
4. Take a moment to open the downloaded **Excel_1A_Quarterly_Sales_Instructions**; note any recent updates to the book.



Project Files for MyLab IT Grader

**In the
eText
do NOT
do this.**

1. In your storage location, create a folder named **Excel Chapter 1**.
2. In your MyLab IT course, locate and click **Excel 1A Quarterly Sales**, Download Materials, and then Download All Files.
3. Extract the zipped folder to your Excel Chapter 1 folder. Close the Grader download screens.
4. Take a moment to open the downloaded **Excel_1A_Quarterly_Sales_Instructions**; note any recent updates to the book.

Below this, you will see **Project Results** which has directions for those **NOT** using MyLab IT. That is us.

For Non-MyLab Submissions
For Project 1A, you will need:
New blank Excel workbook

**Print
Text**

In your storage location, create a folder named **Excel Chapter 1**
In your Excel Chapter 1 folder, save your workbook as:
Lastname_Firstname_1A_Quarterly_Sales
If your instructor requires a workbook with formulas, save as:
Lastname_Firstname_1A_Quarterly_Sales_formulas

After you have named and saved your workbook, on the next page begin with Step 2.

This lists the files you will need for **Project 1A**. For this first project, you will need a **New blank Excel workbook** and nothing else.

Do **NOT** follow these directions. Below, I will give you alternate directions.

You are not going to use sub folders (e.g., Excel Chapter 1). Instead, so you can see them all at once, save all your Excel files in the **Excel Files** folder you downloaded on page SG11.

If the resolution of your display is not 1280 x 768 **things may look a bit different from the screenshots in the textbook**. Don't worry, especially if you need to increase or decrease the widths of cells to make things look right on your computer.

Keep this in mind:

- Do **NOT** print when the textbook instructs you to print.
- Do **NOT** do **GO! With Google Sheets** (pages 345-346).
- When you have completed **Project 1A**, do **Project 1B** (pages 348-362).
- Do **NOT** do **GO! With Google Sheets** (pages 363-364).
- Do **NOT** do **GO! To Work** (page 365).

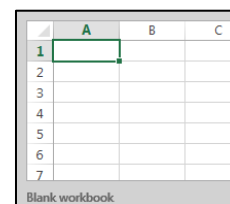
Project 1A: Start reading on page 317. Instead of **step 1** of **Activity 1.01**

Activity 1.01: Starting Excel, Navigating Excel, and Naming and Saving a Workbook

1. Navigate to your **Excel Chapter 1** folder, and then double-click the Excel file you downloaded from MyLab IT that displays your name—**Student_Excel_1A_Quarterly_Sales**. In your blank workbook, if necessary, at the top click **Enable Editing**.

do the following.


1. Start Excel and click **Blank workbook** to open a new blank workbook.
2. Tap the **F12** key to open the **Save As** dialog box.



Mac: **Shift + Command + s**. Or, you can click the **File** tab, and then **Save As**.

3. Navigate to your **Excel Files** folder.

4. In the **File name** box, replace **Book1** with **LastName_FirstName_1A_Quarterly_Sales** where **LastName** is YOUR last name and **FirstName** is YOUR first name.
5. Click **Save**.
6. Complete the rest of the Activities for this Project through step 10 on page 344.

10. In the upper right corner of your screen, click **Close**  to close Excel.

Do **NOT** do steps 11 and 12 in Activity 1.17 on page 344.

7. **Return here** when you have completed Project 1A on page 344.

Do NOT do GO! With Google Sheets.

Project 1B: When you have completed Project 1A, start at the top of page 348.

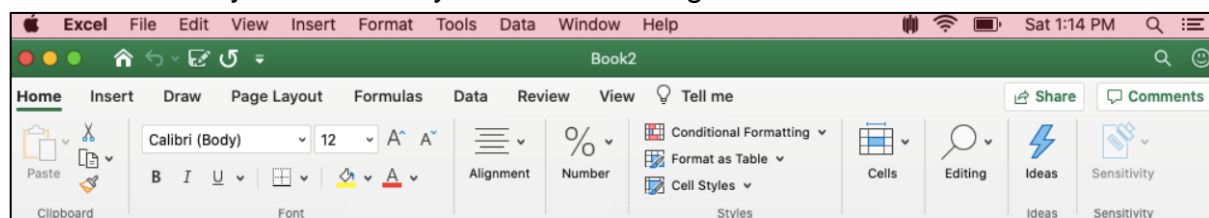
Instead of **Activity 1.18 step 1** do the following:

1. Open a blank Excel workbook and save it to your **Excel Files** folder using the name **Lastname_Firstname_1B_Plyo_Products**
2. Complete the rest of the Activities for this Project EXCEPT do **NOT** do steps 12 and 13 on page 362.
3. **Return here** when you have completed step 11 of Project 1B on page 361.

Do NOT do GO! With Google Sheets or GO! To Work.

Step 3 Homework After you have completed Projects A and B return here and complete the following additional activities, which you will submit for grading. A list of what to submit is on page **SG52**. The output keys begin on page **SG400**.

Mac: The menus at the top of your screen will be a big help in locating features and will allow you to do many of the same things as the tabs on the **Ribbon**.



If you are in full screen mode, the top menus will not show unless you use your mouse to point to the very top of the window.

If you want to display the group titles in the **Ribbon**, as in the Windows version, click **Excel, Preferences, View** and, at the bottom, check **Group Titles**.

In Ribbon, Show

☐ Developer tab

☒ Group Titles

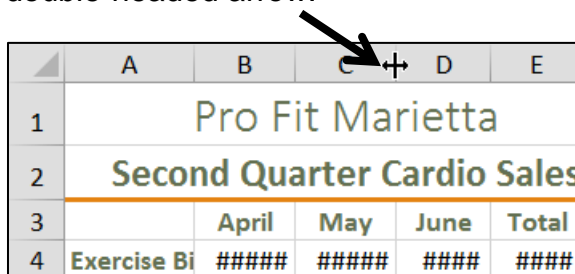
HW02-1 Quarterly Sales (Based on Project 1A)

Problem: How can you organize, summarize, and change the way data and formulas are displayed?

- a. Open the workbook **LastName_FirstName_1A_Quarterly_Sales**, which you created while following the directions in the textbook and saved in step 3 on page 342.

If necessary, switch to normal view: **View** tab, **Workbook Views** group, **Normal**.

If you see a bunch of hash symbols (also known as pound signs or number signs), #####, it means the column is too narrow. To fix this, move the mouse pointer so that it is between two column heading letters. It will change to a double-headed arrow.

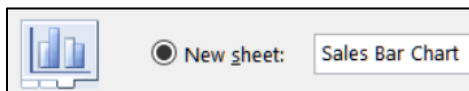
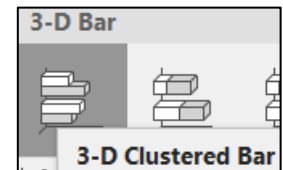


	A	B	C	D	E
1	Pro Fit Marietta				
2	Second Quarter Cardio Sales				
3		April	May	June	Total
4	Exercise Bi	#####	#####	####	####

Click and drag to the right to show the cell values.

- b. Save the workbook in your **Excel Files** folder using the name **HW02-1 HWID 1A Quarterly Sales Done**, where **HWID** is the four-character homework ID I emailed you.
- c. Create a bar chart of the total sales by doing the following:

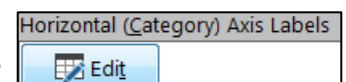
1. Select **E4:E7**.
2. On the **Insert** tab, in the **Charts** group, click the **Insert Column or Bar Chart** arrow and select **3-D Clustered Bar**. Notice that a column chart is vertical, like the columns on a building, while a bar chart is horizontal.
3. On the **Chart Design** tab, in the **Location** group, click **Move Chart**.
4. Click **New sheet** and type the new chart name **Sales Bar Chart**.




Click **OK**. This puts the chart on a separate chartsheet where only the chart is shown (versus a worksheet where both a chart and data cells may be shown). This will make it easier to work on.

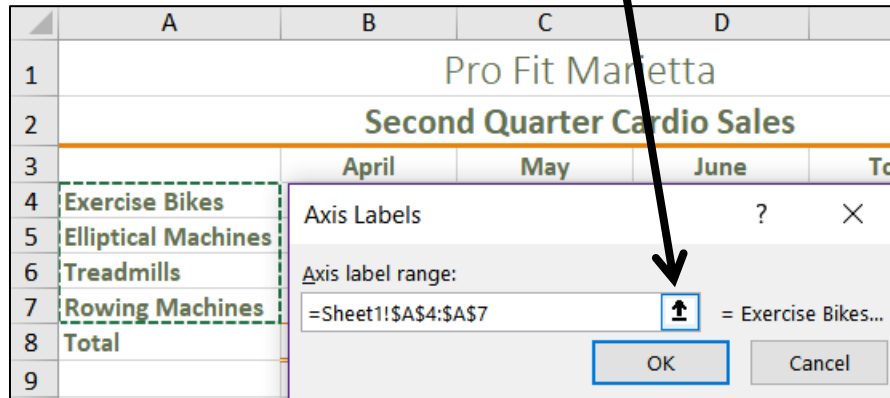
5. To put names on the bars, on the **Chart Design** tab, in the **Data** group, click **Select Data** to open its dialog box.

6. Under **Horizontal (Category) Axis Labels** click **Edit**.



7. You could type the range for the labels but there is an easier way. Click the collapse dialog button  then click the **Sheet1** tab and select **A4:A7**.


Click the collapse dialog button again.

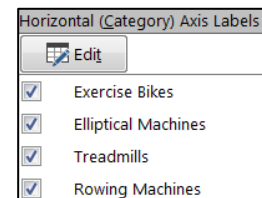


This puts in the reference for you. It says to go to **Sheet1** and select the names in cells **A4:A7**. Excel puts a green dotted line around that range so you can clearly see what you have selected. The \$ indicate that these are **absolute** references. Here, they are optional. Later, you will use absolute references in some formulas.

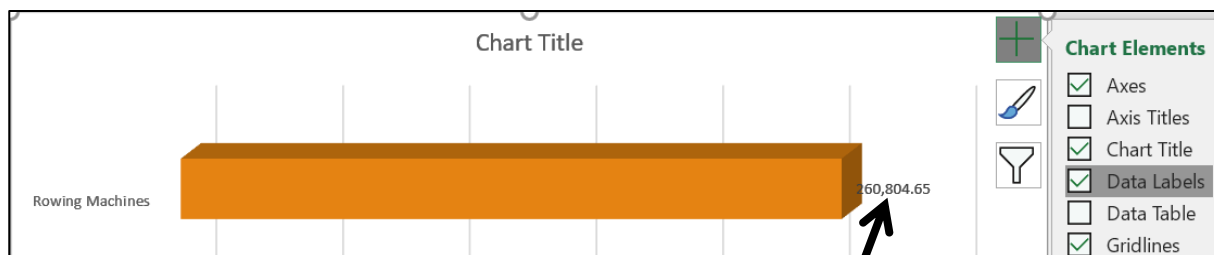
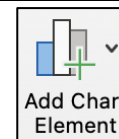
8. Click **OK**. Now, the machine names show up under the **Horizontal (Category) Axis Labels**.

9. Click **OK**.

10. Click anywhere in the chart and a green cross  appears in the chart's upper right corner. This is one of the **Chart Elements** buttons. Click that and put a check next to **Data Labels**.

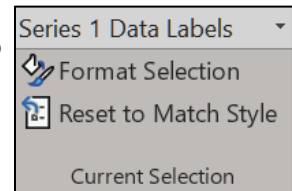


Mac: There is no green cross. On the **Chart Design** tab, in the **Chart Layouts** group (on the left), click the **Add Chart Element** arrow, select **Data Labels**, and select **More Data Label Options**. If the **Format Data Labels** pane does not automatically open, on the **Format** tab, in the **Format** group, click **Format Pane**. If you have a small screen, you may have to click the double chevron to the right of the **Chart Design** tab to see the **Format** tab.



This puts the values (labels) at the ends of the bars.

11. On the **Chart Format** tab, in the **Current Selection** group (on the left), click the **Chart Elements** arrow and select **Series 1 Data Labels**. Just under that, click **Format Selection**.



Mac: There is no **Format Selection** choice.

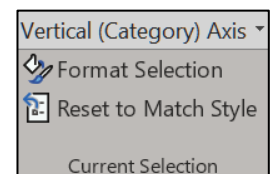
This selects the data labels and opens the **Format Data Labels** pane.

Mac: Over on the right, click **Format Pane** to open the **Format Data Labels** pane.

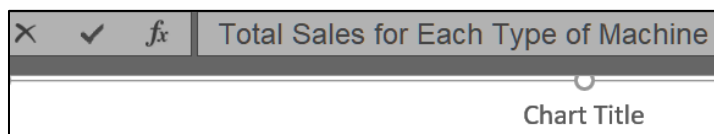
You can also select the data labels by clicking one of them. In that case, all of them would be selected.

12. On the **Home** tab, in the **Font** group, select **Arial Black** and make the size **9**.
13. On the **Chart Format** tab, in the **Current Selection** group, click the arrow and select **Vertical (Category) Axis**.

Just under that, click **Format Selection** (not on the **Mac**).



14. Change the font to **9 pt Arial Black**.
15. On the **Chart Format** tab, in the **Current Selection** group, click the **Chart Elements** arrow and select **Horizontal (Value) Axis**. Just under that, click **Format Selection**. Tap the **Del** key to remove this axis.
16. On the **Chart Format** tab, in the **Current Selection** group, click the **Chart Elements** arrow and select **Chart Title**. Just under that, click **Format Selection**. Click inside the formula bar and type **Total Sales for Each Type of Machine**.

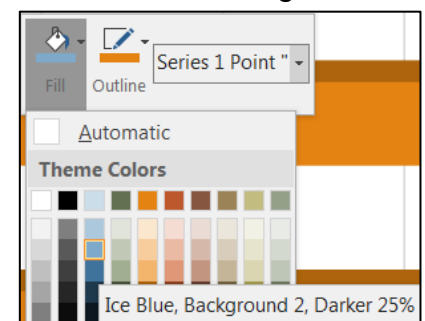


Tap **Enter**. Make the font **12 pt Arial Black**.

17. Click the bar for **Rowing Machines** once, wait a second, and click it again. This will select that single bar. This is not a “double-click” but a click, a pause, and then another click. Double-clicking will select all the bars and open the **Format Data Series** pane (not what you want).

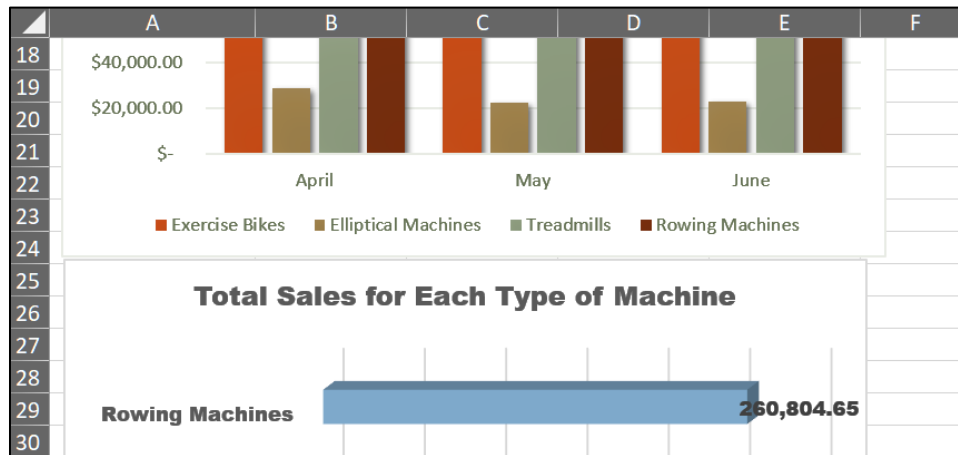
Click the paint bucket and select blue.

18. Follow the same procedure to change the color of the **Treadmills** bar to pink and the color of the **Elliptical Machines** bar to green.



19. On the **Chart Design** tab, in the **Location** group, click **Move Chart**. Click the button next to **Object in**, select **Sheet1** (if necessary), and click **OK**.

20. Position the new bar chart under the column chart.



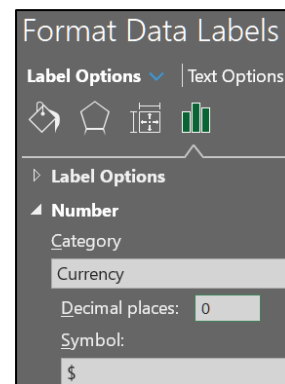
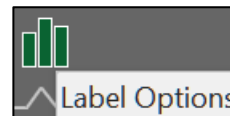
21. Click one of the labels to select them all.
The **Format Data Labels** pane will open.

22. Click the **Label Options** button.

23. Click the **Number** triangle.

24. Click the **Category** arrow and select **Currency**.

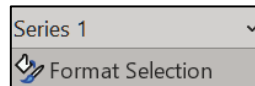
25. Change the number of decimal places to **0**.
The **\$** should show under **Symbol**.



- d. Change the bar shape and spacing between bars by doing the following:

1. With the bar chart selected, on the **Chart Format** tab, in the **Current Selection** group, click the **Chart Elements** arrow and select **Series 1**.

2. Click **Format Selection** to open the **Format Data Series** pane.



3. Click the **Series Options** icon



4. Under **Column shape**, click **Cylinder** to change the shape of the bars from rectangular pyramids to cylinders.

Mac: You cannot change the column shape so leave it as is.

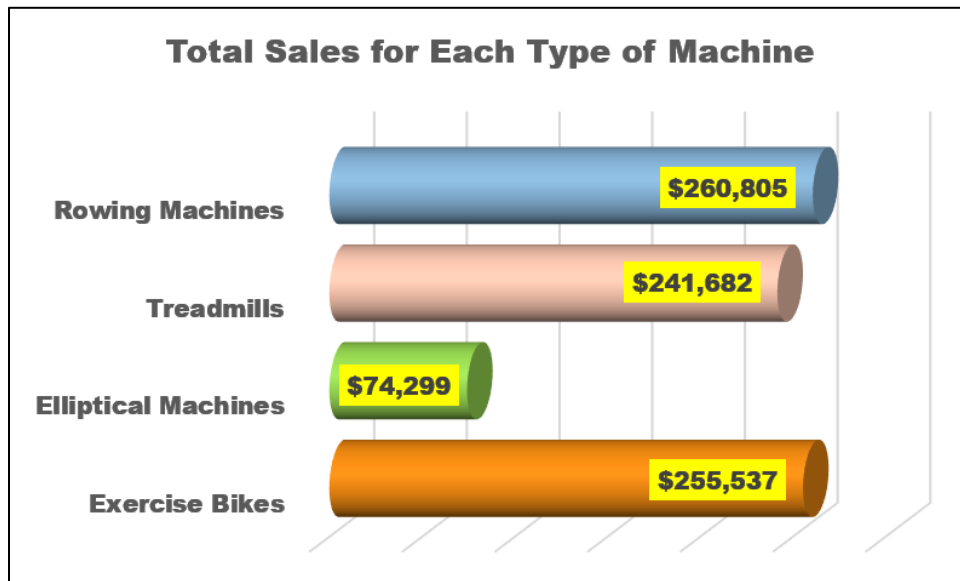
5. Change the **Gap Width** to 30%



- e. Depending on your screen resolution, the bar labels may be difficult to read and/or the digits may wrap. Do the following to make the labels more readable:

1. Click the **Rowing Machines** label value once. This will select all four labels.
2. On the **Chart Format** tab, in the **Shape Styles** group, click the **Shape Fill** arrow and select **Yellow**. Now the numbers are easier to read.

3. Click in the **Chart Area** to deselect the data labels. Then, click the **Rowing Machines** data label once, wait a second, and click it again. This will select only that label. Grab the edge of the data label box and position it as shown below. Repeat this process for the **Treadmills**, **Elliptical Machines**, and **Exercise Bikes** data labels.



- f. Add a callout by doing the following:


1. On the **Insert** tab, in the **Illustrations** group, click **Shapes**, and way down at the bottom, click **Cloud Callout**. If you do not have that callout, use any other. A small cross will appear.
2. Move the cross to about the middle of cell **F30**, hold down the left mouse button, and drag down and to the left to insert the callout.
3. Right-click the cloud and select **Edit Text**.
4. Type **Too low!** Change the font to **black Arial Black**.
5. Point to the little orange tip and a white arrow will appear. Drag so the cloud points to the **Elliptical Machines** bar.
6. Adjust the cloud size and position to it look like the following:





As you can see, when working with graphs, you sometimes have to fiddle around with the parts to get it to look the way you want it.

- g. Double-click the **Sheet1** tab name to select the word **Sheet1**, type **Data** as the new name, and then tap **Enter**.


h. Set up the **Quarterly Sales Data** worksheet for printing by doing the following:

1. Click cell **A1**. On the **Page Layout** tab, in the **Page Setup** group, in the lower right corner, click the dialog box launcher  and click **Page Setup**.

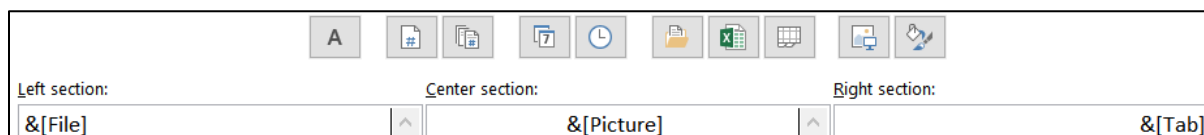
Mac: There are no dialog box launchers on the Mac. For features not expressly included on the **Ribbon** you can use the main menu bar. In that case, click the **File** menu, and then **Page Setup**. Or, on the **Page Layout** tab, in the **Page Setup** group, click the **Page Setup** button.


2. Click the **Page** tab and confirm that the orientation is **Portrait**.
3. Click the **Margins** tab and put a check in the box next to **Horizontally**.
4. Click the **Header/Footer** tab and click **Custom Footer**.
5. Click inside the **Left** section box and click the **Insert File Name** icon .
6. Click inside the **Right** section box and click the **Insert Sheet Name** icon .

Mac: Skip steps 7, 8, and 9. While **Mac** allows you to insert a picture there is no **Format Picture** icon so you cannot change its size to fit in the footer.

7. Click inside the **Center** section box and click **Insert Picture** icon .
8. Navigate to your **Word Files** folder. Double-click **HW07-2 Goldy Original**.

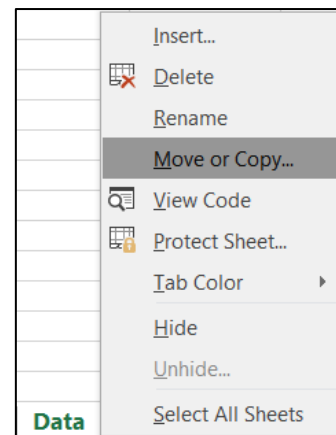
Notice the codes inserted by Excel. Other icons allow you to modify the font, display the page number, date and time.



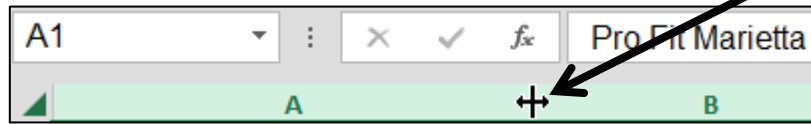
9. Select the code **&[Picture]**, click the **Format Picture** icon . Change the **Height** to **0.3** inch.
10. Click **OK** three times. Tap **Ctrl + p** to open the **Print** dialog box and compare the preview with the key on page **SG400**. Make corrections and save the workbook but **DO NOT** close it.

i. Copy the **DATA** worksheet and display the formulas by doing the following:

1. Near the bottom left of the screen, right-click the **Data** tab and select **Move or Copy** from the menu.
2. Click the **Create a copy** check box.
3. Click **OK**. This makes a duplicate of the worksheet and names it **Data (2)**.
4. Double-click the tab name, **Data (2)**, to select it. Type the new name, **Formulas**, and tap **Enter**.
5. If necessary, delete the two charts by clicking an edge to select them, and then tapping the **Del** key.



6. Tap **Ctrl + `** to display the formulas. The ` key is located at the upper left corner of the keyboard. You can also display the formulas by going to the **Formulas** tab and, in the **Formula Auditing** group, clicking **Show Formulas**.
7. Click the **Select All** box in the upper left corner of the worksheet. This selects all the cells of the worksheet.
8. Move the pointer to the column heading boundary between any two columns so the pointer becomes a double-headed arrow.

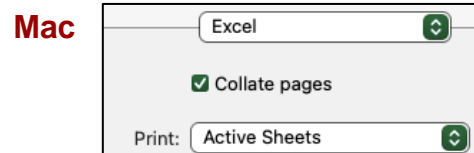
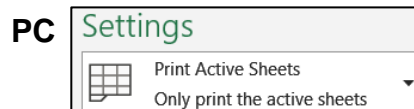


Double-click. This process, called **AutoFit**, will adjust the column widths to fit the formulas displayed. Don't worry if the formatting looks different because displaying the formulas sometimes messes it up.

	A	B	C	D	E	F
1	Pro Fit Marietta					
2	Second Quarter Cardio Sales					
3		April	May	June	Total	Trend
4	Exercise Bikes	68991.12	86894.82	99650.58	=SUM(B4:D4)	
5	Elliptical Machines	28836	22634.23	22828.78	=SUM(B5:D5)	
6	Treadmills	59519.78	82337.98	99823.87	=SUM(B6:D6)	
7	Rowing Machines	81267.17	87867.5	91669.98	=SUM(B7:D7)	
8	Total	=B4+B5+B6+B7	=C4+C5+C6+C7	=SUM(D4:D7)	=SUM(B8:D8)	

9. Click cell **A1** to deselect all the cells.
- j. Set up the **Quarterly Sales Formulas** worksheet for printing. The initial setup should be the same as for the **Data** worksheet, but check to be sure. In addition, do the following:

1. Tap **Ctrl + p**. Be sure it shows **Print Active Sheets**:

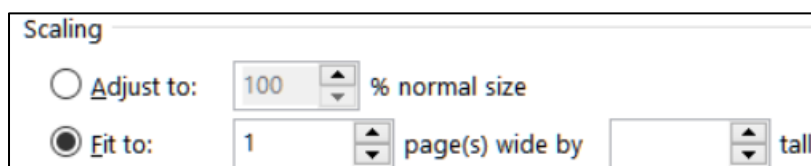


Click **Page Setup**.

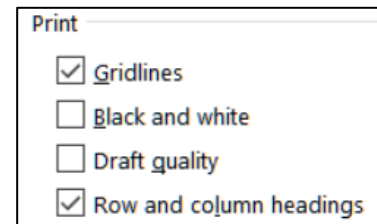
Mac: On the **Page Layout** tab, in the **Page Setup** group, click **Page Setup**.

2. On the **Page** tab, look at the **Scaling** section. Here, you can adjust the scale to any percent of normal size, larger or smaller, or have Excel fit the output to a specific number of pages wide and tall.

Click the button to the left of **Fit to:** and confirm that **1** is in the box.



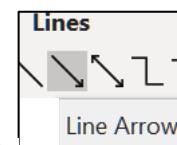
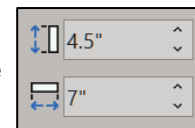
3. Click the **Sheet** tab. In the **Print** section, check the boxes next to **Gridlines** and **Row and column headings**. Printing these makes it easier to see if the formulas are correct.
4. Click **OK**.
5. Compare the preview with the key. Make needed corrections, save the workbook, and then close it.



HW02-2 Plyometric Products Inventory (Based on Project 1B)

Problem: How can you summarize data and construct and format graphs so that they are informative, visually appealing, and clearly display relationships between data?

- a. Open the workbook **Lastname_Firstname_1B_Plyo_Products**, which you created while following the directions in the textbook and saved in step 10 on page 361.
- b. Save the workbook in the **Excel Files** folder using the name **HW02-2 HWID 1B Plyo Products Done**, where **HWID** is your four-character homework ID.
- c. Insert some extra text, an arrow, and a photo by doing the following:
- d. Double-click the Sheet1 tab name to select it. Type the new sheet name **Data**.
 1. In cell **A14**, type **University Recreation and Wellness Center is a great place to work out**.
 2. In cell **A15** type **For more information see <https://recwell.umn.edu/>**. Make the text red and bold.
 3. Click cell **A16**. On the **Insert** tab, in the **Illustrations** group, click **Pictures** and then **Insert Picture From This Device**. Navigate to your **Excel Files** folder and double-click **HW02-2 U of M Rec Center Photo Original**.
 4. Double-click the photo. On the **Picture format** tab, in the **Size** group, change the height to **4.5** inches and the width to **7** inches.
 5. Click cell **C15**. On the **Insert** tab, in the **Illustrations** group, click **Shapes** and click **Line Arrow**.
 6. This will display a cross. Drag the cross to make a horizontal arrow that is about 1 inch long.
 7. With the arrow selected, on the **Shape Format** tab, in the **Shape Styles** group, click **Shape Outline**, and select **red**.
 8. With the arrow selected, on the **Shape Format** tab, in the **Shape Styles** group, click **Shape Outline**, and select **Weight** and **3 pt**.
 9. With the arrow selected, on the **Shape Format** tab, in the **Shape Styles** group, click **Shape Outline**, select **Arrows** and change the arrowhead to this:



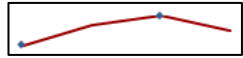
10. Adjust the text, arrow, and photo to look like this:





- e. Set up the **Plyometric Products** worksheet to print in **Landscape** orientation, all on **one page**, **centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook, and close it.

HW02-3 Vehicle Sales Charts

Problem: How can you create detailed three-D column charts to visually display relationships between data?

- Open the workbook **HW02-3 Vehicle Sales Original**, which is one of the files you downloaded at the start of the term.
- Save the workbook to the **Excel Files** folder using the name **HW02-3 HWID Vehicle Sales Done**
- Set up the worksheet as follows:
 - Merge and center **A1:E1**. Merge and center **A2:E2**.
 - In row **7**, enter formulas that will calculate the sum for **Cars** for each year. Do the same for row **12** for **Vans**, for row **16** for **SUVs**, and for row **17** for **Grand Total**.
 - Click **F17** and type **= "Average is "&AVERAGE(B17:E17)** The ampersand, **&**, allows you to display more than one item in a cell. It has the effect of concatenating (sticking together) the items so the text inside the quotation marks will be displayed followed by the calculated average.
 - Click the **Enter** checkbox ☒ and the cell will display **Average is 84.25**.
 - Sometimes, it is useful to display the entire location (path) of your file right on the printout. To do that, click cell **A19**, type **=cell("filename")** and tap enter. Here is what mine shows: **C:\Users\droberts\Desktop\Excel Files\[HW02-3 HWID Vehicle Sales Done.xlsx]Data**
- Insert Sparklines as follows:
 - In cell **F5**, insert a **Line Sparkline** for the **Sedans** data.  Use the options in the **Sparkline Design** tab to make the color red and mark the **High Point** and **Low Point** in dark blue.
 - Do the same for the **Coupes** in **F6**.
 - In **F9**, insert a **column Sparkline** for the **Full Sized Vans** data. Do the same for the **Mini Vans** and the **Four Wheel Drive Vans**. Make the **Sparkline** for **Full Sized** red, for **Mini** green, and for **Four Wheel Drive** blue.

- e. Set up the **Data** worksheet to print in **Portrait** orientation, all on **one page**, **centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Note that you can have the full file location displayed in the footer by clicking the **Insert File Path** button  instead of the **Insert File Name** button.  Compare the preview with the key. Make needed corrections, save the workbook but do NOT close it.

- f. Create a line chart of the **Total Cars** and **Total Vans** and **Total SUVs** for the years **2005** through **2020** by doing the following:
1. Click **A3** and drag across to **E3**. This will set the scale at the bottom of the line chart. Note that even though **A3** is empty you still need to select it so that there is consistency in the selection of the rest of the data.
 2. Hold down the **Ctrl** key (**Command** key on **Mac**) and select **A7:E7**. Now both **A3:E3** and **A7:E7** ranges are selected.

	A	B	C	D	E
1	Vehicle Sales				
2	<i>(in thousands of vehicles)</i>				
3		2005	2010	2015	2020
4	Cars				
5	Sedans	23	31	35	29
6	Coupes	14	12	16	15
7	Total Cars	37	43	51	44


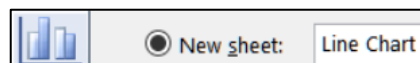
3. Hold down the **Ctrl** key and select **A12:E12**.
4. Hold down the **Ctrl** key and select **A16:E16**.
5. On the **Insert** tab, in the **Charts** group, click **Line**, and select **Line with Markers**. 
6. On the graph, click **Chart Title**, click the formula bar, type **Vehicle Sales**, and tap **Enter**.
7. Click the **Chart Elements** button, the green cross in the upper right corner of the chart, and put a check next to **Axis Titles**.

Chart Elements

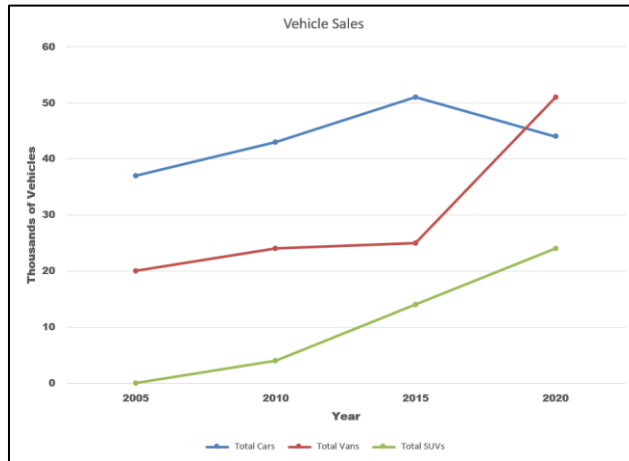
- ☒ Axes
- ☒ Axis Titles

Mac: **Chart Design**, **Add Chart Element**, **Axis Titles**, **Primary Horizontal**, **Primary Vertical**. If the **Format Axis Title** pane does not automatically open, click the **Format** tab, and click the **Format Pane** button.

8. Click the horizontal **Axis Title** and, in the formula bar type, **Year**, and tap **Enter**.
9. Enter **Thousands of Vehicles** for the vertical **Axis Title**.
10. Change the font of the **Title**, the **Axis Titles**, and the **Axis Numbers** to **Arial Black**.
11. On the **Chart Design** tab, in the **Location** group, click **Move Chart** to open the **Move Chart** dialog box.
12. Next to **New sheet**, replace the word **Chart1** with **Line Chart**.



13. Click **OK**. The chart now is in its own chartsheet. Do NOT print this chart.

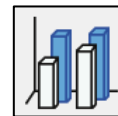


- g. Do the following to create a **3-D Column** chart for **2005, 2015, and 2020** using the data for **Sedans, Coupes, Full Sized, Mini, and Regular**.
1. Click the **Data** worksheet tab. Since you are skipping the **2010** column you cannot select the data like you did for the line chart. That is, you cannot drag across the rows of data; you must click each cell individually, left to right, top to bottom.
 2. Start by clicking **A3** even though it is blank. Then, hold down the **Ctrl** key and **click** (do **NOT** drag) **B3**, then click **D3**, then click **E3**.
 3. Move to row **5** and, with the **Ctrl** key still held down, click the cells you want, working left to right.

Continue in this left to right and top to bottom manner, as if you were reading a book.

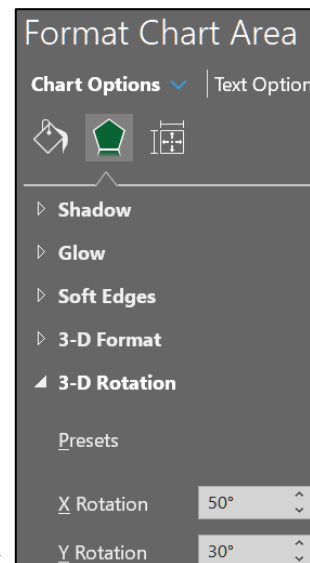
	A	B	C	D	E
1	Vehicle Sales				
2	(in thousands of vehicles)				
3		2005	2010	2015	2020
4	Cars				
5	Sedans	23	31	35	29
6	Coupes	14	12	16	15
7	Total Cars	37	43	51	44
8	Vans				
9	Full Sized	12	10	8	12
10	Mini	8	12	14	23
11	Four Wheel Drive	0	2	3	16
12	Total Vans	20	24	25	51
13	SUVs				
14	Regular	0	4	12	18
15	Towing Package	0	0	2	6

4. Once the data are selected for rows **3, 5, 6, 9, 10**, and **14**, on the **Insert** tab, in the **Charts** group, click **3-D Column**.



Set up the chart so it has these characteristics:

- Type: 3-D Column
- Location: New chartsheet called **3-D Column Chart**
- Chart title (above chart):
Selected Vehicle Sales for 2005, 2015, 2020
- Horizontal axis title: **Type of Vehicle**
- Vertical axis title: **Thousands of Vehicles**
- Depth axis title: **Year**
- Make the **Title** and **Axis Titles** 14 pt Arial Black
- Make the **Axes Labels** 9 pt Arial Black
- Legend: **None**
- Set the **X Rotation** to **50°** and the **Y Rotation** to **30°**
- Vertical Axis Gridlines: **3 pt red**
- Floor: **Gray**



- h. Set up the **3-D Column** chartsheet to print in **Landscape** orientation. Include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook and close it.

Step 4 Submit Now, do the following to create your pdf files. **Each file should contain only one worksheet or chartsheet on a single page. Do NOT submit multiple worksheets or pages in a single pdf. Check the key on page SG400.**

Use these names for the pdf files:

HW02-1 HWID 1A Quarterly Sales Done (Data) – This is the Data worksheet

HW02-1 HWID 1A Quarterly Sales Done (Formulas) – This is the Formulas worksheet

HW02-2 HWID 1B Plyo Products Done

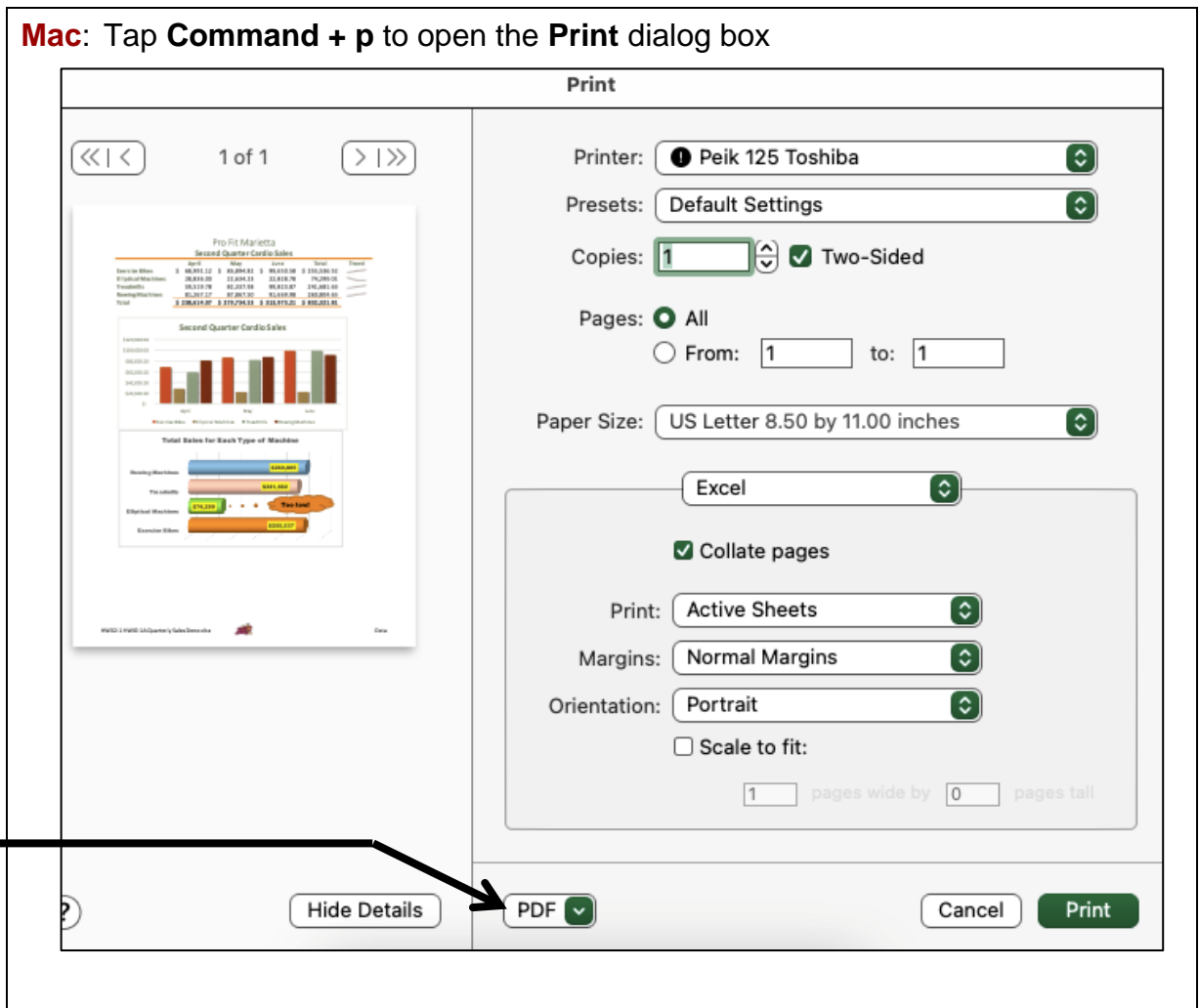
HW02-3 HWID Vehicle Sales Done (Data) – This is the Data worksheet

HW02-3 HWID Vehicle Sales Done (3-D Column Chart) – This is the 3-D Column chartsheet

See the next page for the steps for creating your pdf files.

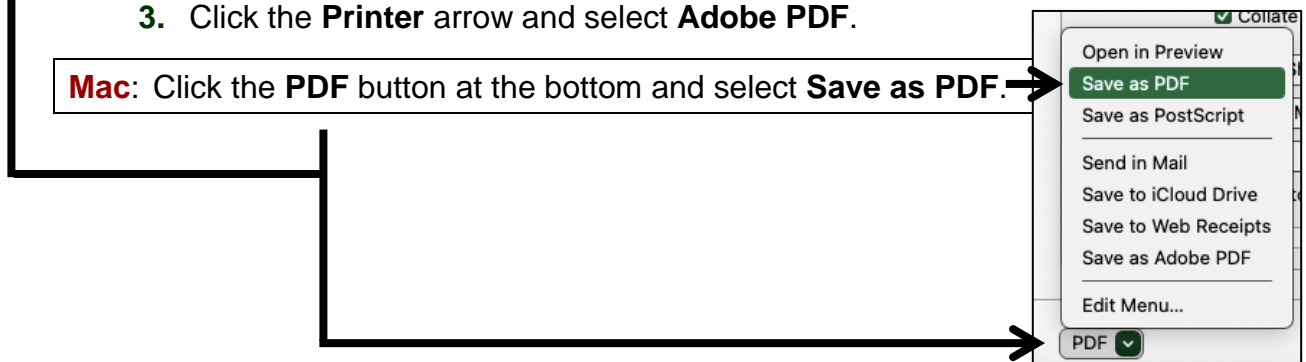
1. Open one of the files, click the appropriate worksheet tab, and tap **Ctrl + p** to open **Print Preview**.

Mac: Tap **Command + p** to open the **Print** dialog box








2. Check the key on page **SG400** to be sure your output is correct.
3. Click the **Printer** arrow and select **Adobe PDF**.

Mac: Click the **PDF** button at the bottom and select **Save as PDF**.

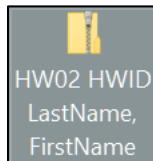


4. Click **Print**.
5. Navigate to the desktop, enter the file name, such as **HW02-1 HWID 1A Quarterly Sales Done (Data)** and then click **Save**.
6. When you have created all five pdfs, create a new folder called **HW02 HWID LastName, FirstName** using your own HWID and names.

7. Drag your pdf files into the new folder.

HW02 HWID LastName, FirstName			Search HW02 HWID LastName, FirstName
Name	Date modified	Type	
 HW02-1 HWID 1A Quarterly Sales Done (Data)	6/19/2022 2:12 PM	Adobe Acrobat Document	
 HW02-1 HWID 1A Quarterly Sales Done (Formulas)	6/19/2022 2:13 PM	Adobe Acrobat Document	
 HW02-2 HWID 1B Plyo Products Done	6/19/2022 2:14 PM	Adobe Acrobat Document	
 HW02-3 HWID Vehicle Sales Done (3-D Column Chart)	6/19/2022 2:15 PM	Adobe Acrobat Document	
 HW02-3 HWID Vehicle Sales Done (Data)	6/19/2022 2:14 PM	Adobe Acrobat Document	

8. Compress the folder to form a new zipped file as you did on page **SG32**.



9. By the due date, upload the zipped file to the **HW02 Excel Cpt 1 Creating Worksheets and Charts** folder in Canvas.

Step 5 Backup Now would be a good time to backup your files.

Project 3

Excel Chapter 2: Functions, Tables, and Large Workbooks

Step 1 Read Read the introductory material on page 385 in the textbook.

Step 2 Activities Turn on the computer and do the following:

Project 2A: Start at the top of page 387.

Instead of **Activity 2.01 step 1** do the following:

1. Navigate to your **Excel Files** folder and open **e02A_Tree_Inventory**, which is one of the files you downloaded at the start of the term.
2. Save the file in your **Excel Files** folder using the name **Lastname_Firstname_2A_Tree_Inventory**
3. Complete the rest of the Activities through step 11 on page 408. Do **NOT** do steps 12 and 13 in **Activity 2.20** on page 409.
4. **Return here** when you have completed Project 2A on page 408.

Do NOT do GO! With Google Sheets

Project 2B: When you have completed Project 2A, start at the top of page 413.

Instead of **Activity 2.21 step 1** do the following:

1. Navigate to your **Excel Files** folder and open **e02B_Weekly_Sales**, which is one of the files you downloaded at the start of the term.
2. Save the file in your **Excel Files** folder using the name **Lastname_Firstname_2B_Weekly_Sales**.
3. Complete the rest of the Activities through step 4 on page 432. Do **NOT** do steps 5 and 6 in **Activity 2.36** on page 432.
4. **Return here** when you have completed Project 2B on page 432.

Do NOT do GO! With Google Sheets or GO! To Work

Step 3 Homework After you have completed Projects A and B return here, do the following additional activities, and turn them in for grading.

HW03-1 Tree Inventory (Based on Project 2A)

Problem: How can you use statistics to analyze data?

- Open the workbook **Lastname_Firstname_2A_Tree_Inventory**, which you created while following the directions in the textbook and saved on page 408.
- Save the workbook to the **Excel Files** folder using the name **HW03-1 HWID 2A Tree Inventory Done**
- When a worksheet has many rows or columns it is often useful to be able to see non-adjacent parts of the worksheet at the same time. The textbook showed you how to do this in a couple of ways:
 - freeze** parts of the screen so specific rows or columns are always in view (textbook page 401).
 - split** the screen horizontally so you can scroll the upper and lower parts independently, or split the screen vertically so you can scroll the left and right parts independently (textbook page 406).

A third way is to **hide** rows or columns. To see how this works, do the following:

- Select rows **17:41** by clicking on row number **17** and dragging to row **41**.

- While pointing to any selected row number, right-click and select **Hide** from the menu. Now it appears that row **16** is followed by row **42**. The other rows are still there but they are hidden from view. Notice that the count in **B10** has not changed. Even though you cannot see the hidden rows the values are taken into account in the formulas. When you print, those hidden rows will not print.

Do **NOT** go to the **View** tab, **Window** group and click **Hide**.



This will hide the entire workbook! If you do that, click **Unhide** to get the window back.



	A	B
10	Oak Trees	13
11	Maple Trees	6 (571 tota
12		
13	Quantity in Stock	Item #
14	78	13129
15	35	13358
16	60	15688
17	20	16555
18	75	21683
19	60	22189
20	68	23677
42	350	43153
43	7/5/2020 9:53	

- Select rows **16** to **42**, right-click, and select **Unhide**.

- Hide rows **21** to **41**.

- Set up the **Tree Inventory** worksheet to print in **Landscape** orientation, all on **one page**, **centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Click the **Sheet** tab and click **Row and column headings**. Click **OK**. Compare the preview with the key. Make needed corrections, save the workbook, and close it.

HW03-2 Weekly Sales Summary (Based on Project 2B)

Problem: How can you organize and summarize data from different sources?

- Open the workbook **Lastname_Firstname_2B_Weekly_Sales**, which you created while following the directions in the textbook and saved on page 432.
- Save the workbook to the **Excel Files** folder using the name **HW03-2 HWID 2B Weekly Sales Done**
- Set up the **Summary** worksheet to print in **Portrait** orientation, all on **one page**, **centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook but do NOT close it.
- The **IF** function introduced on textbook page 396 allows you to **choose** between two alternatives based on the truthfulness of a condition called a **logical test**. The **IF** function evaluates the logical test and, if the logical test result is true, the first alternative is displayed; otherwise the second alternative is displayed.

The **IFS** function, described on pages 427-429, allows the user to display different things based on more than one condition (hence the **S** in **IFS**). However, the conditions must be placed in the correct order for the function to work properly. Here is the formula the authors provided:

=IFS(B4>4999,500,B4>3999,350,B4>2999,250,B4>0,0)

Notice that this starts with the highest cutoff, **4999**.

IF that is exceeded, **THEN 500** is displayed.

IF it is **not**, **THEN** the next highest cutoff, **3999**, is checked.

And so on.

=IFS $\left(\begin{array}{c} \text{THEN} \\ \text{B4>4999} \\ \text{Condition 1} \end{array} , \begin{array}{c} \text{500} \\ \text{Display if true} \end{array} , \begin{array}{c} \text{Else} \\ \text{B4>3999} \\ \text{Condition 2} \end{array} , \begin{array}{c} \text{THEN} \\ \text{350} \\ \text{Display if true} \end{array} , \begin{array}{c} \text{Else} \\ \text{B4>2999} \\ \text{Condition 3} \end{array} , \begin{array}{c} \text{THEN} \\ \text{250} \\ \text{Display if true} \end{array} , \begin{array}{c} \text{Else} \\ \text{B4>0} \\ \text{Condition 4} \end{array} , \begin{array}{c} \text{THEN} \\ \text{0} \\ \text{Display if true} \end{array} \right)$

Some people find using “nested” **IF** statements easier to understand.

“Nested” means putting one **IF** statement inside another. You are choosing between **four** different bonus values, so you need **three IF** statements.

For this problem, it would look like this:

=IF $\left(\begin{array}{c} \text{THEN} \\ \text{B4>4999} \\ \text{Condition 1} \end{array} , \begin{array}{c} \text{500} \\ \text{Display if true} \end{array} , \text{Else } \left(\begin{array}{c} \text{THEN} \\ \text{B4>3999} \\ \text{Condition 2} \end{array} , \begin{array}{c} \text{350} \\ \text{Display if true} \end{array} , \text{Else } \left(\begin{array}{c} \text{THEN} \\ \text{B4>2999} \\ \text{Condition 3} \end{array} , \begin{array}{c} \text{250} \\ \text{Display if true} \end{array} , \text{Else } \left(\begin{array}{c} \text{B4>0} \\ \text{Condition 4} \end{array} , \begin{array}{c} \text{0} \\ \text{Display if false} \end{array} \right) \right) \right)$

What happens if you reverse the order in the **IFS** formula, like this?

=IFS(B4>0,0,B4>2999,250,B4>3999,350,B4>4999,500)

In this case, the first condition, **B4>0**, is true for everyone and so the result is a bonus of 0 for everyone! Be sure to always check your formula results by hand because it is really easy to get things backwards.

To see how this works, do the following:

1. Click the **Bonus** worksheet tab. In cell **C3** replace **Bonus** with **Bonus using IFS**.
2. In cell **D3** type **Bonus using nested IF**.
3. Select **B4:D7**, right-click and select **Format Cells**.
4. On the **Number** tab, click **Accounting** and set the **Decimal places** to **0** and display the \$.
5. Select **A1:D1** and, on the **Home** tab, in the **Alignment** group, click **Merge & Center** to deselect it and click it a second time to select it again.

	A	B	C	D
1	Weekly Online Sales Bonus			
2				
3	Salesperson	Weekly Sales	Bonus using IFS	Bonus using nested IF

6. **AutoFit** columns **A:D**.
7. In cell **D4** type **=if(b4>4999,500,if(b4>3999,350,if(b4>2999,250,0)))**
8. Fill **D4** down to **D7**. Notice the values in columns **C** and **D** are the same.

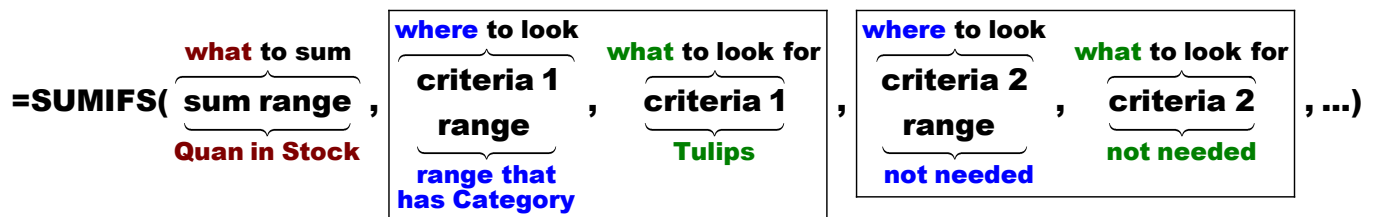
There is nothing to print here. You will learn more about nested **IF** functions on page **SG143**.

HW03-3 Inventory (Based on Project 2G)

Problem: How can you summarize data based on certain conditions?

- a. Start at the top of textbook page 453. **Instead of step 1** do the following:
 1. Open the file **e02G_Inventory**, which is one of the files you downloaded at the start of the term.
 2. Save the file in your **Excel Files** folder using the name **Lastname_Firstname_2G_Inventory**
- b. Follow the directions for steps **2 through 23** for **Project 2G Inventory** on pages 453-454.
- c. After completing **step 23**, save your file to the **Excel Files** folder using the name **HW03-3 HWID 2G Inventory Done**
- d. The **Tables** may still be defined for the **Bulbs** and **Trees** worksheets. If necessary, do the following to remove the **Table** designation:
 1. Click the **Trees** worksheet tab.

2. Click **A15**. If the **Table Design** tab appears then this range is still designated as a table. To remove the table designation, on the **Table Design** tab, in the **Tools** group, click **Convert to Range**. Click **Yes** to confirm the conversion. The **Table Design** tab will no longer be present and there will be no arrows in the header row (row **14**).
 3. Click the **Bulbs** worksheet and, if necessary, convert the table into a range.
 4. Click cell **B5** and make the number **bold red** and the fill **yellow** so it stands out.
 5. If the Gridlines are showing, remove them (**View** tab, **Show** group, **Gridlines**).
- e. Change the worksheet tab colors by doing the following:
1. Right-click the **Bulbs** worksheet tab, point to **Tab Color**, and click orange.
 2. Repeat the process to make the **Trees** worksheet tab color green.
- f. On page 405, step 8, the book showed you one way of determining the quantity in stock of **Tulips** on the **Bulbs** worksheet by using filtering. Below is an easier way of doing that, and one that will automatically update as the data change.
1. Click the **Bulbs** worksheet tab to make it active.
 2. In **C10**, type **Tulip Total** using **SUMIFS**.
 3. In **C11**, type **=sumifs(a15:a42,f15:f42,"Tulips")** and then click the **Enter** checkbox to keep **C11** active. Notice the number, 433, is the same as the one you typed in **B11**. If the **Quantity in Stock** in column **A** changes, this value in **C11** will automatically be updated but the value in **B11** will not.
- The **SUMIFS** function works like the **COUNTIF** function you learned about in Project 2A, except **SUMIFS** finds the **sum** of selected values rather than counts how many there are. Here is the form of the function:



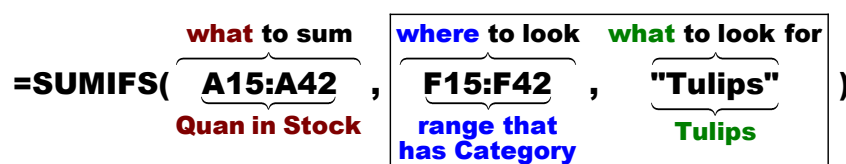
sum range: Which cells do you want to sum? **Quantity in Stock** (A15:A42).

criteria 1 range: Whose **Quantity in Stock** do you want to include?
Those of **Tulips**, so use the **Category** in **F15:F42**

criteria 1: What should the **Category** be? **Tulips**, so use **"Tulips"**

criteria 2 range: You can include many more conditions but it is not needed here.

criteria 2: Not needed here.



4. Click the **Trees** worksheet tab to make it active.
 5. In **C10**, type **Evergreen Total** using **SUMIFS**.
 6. Click **C11** and enter a formula that will sum the quantity in stock for **Evergreens** in the range **F15:F42**. You should get the same number, 583, as is in **B11**.
- g. The **AVERAGEIFS** function is like **SUMIFS** but it finds averages rather than sums. For example, do the following to find the average price for the tulips:
1. Click the **Bulbs** sheet tab to make that sheet active.
 2. In **A12** type **Tulip Average Price**.
 3. In **B12**, type **=averageifs(** After you type the left parenthesis, (, Excel provides a screen tip that shows the structure of the **AVERAGEIFS** formula.

```
=averageifs(
```

The **average_range** is the location of the numbers you wish to average. This is the **Retail Price** in **D15:D42**. Type that range followed by a comma.

=averageifs(d15:d42,

AVERAGEIFS(average_range, **criteria_range1**, criteria1, [criteria_range2, ...])

The **criteria_range1** is the range where the criteria are located. That is, **Category** in **F15:F42**. Type that range followed by a comma.

AVERAGEIFS(average_range, criteria_range1, **criteria1**, [criteria_range2, criteria2], ...)

The **criteria1** is what you are looking for. That is **Tulips**. Type “**Tulips**”) (note the right parenthesis). The quotation marks around **Tulips** are needed. The square brackets around **[criteria_range2, criteria2]** mean the items inside are optional. In this case, we have only one criterion so there is no **criteria_range2**.

Click the **Enter** checkbox to keep **B12** active. The value **11.426** should show.

B12		=AVERAGEIFS(D15:D42,F15:F42,"Tulips")	
	A	B	C
10	Tulip Types	5	Tulip Total using SUMIFS
11	Tulip Total Quantity	433	433
12	Tulip Average Price	\$ 11.426	

4. Format the average price in **B12** to match the average price in **B5**. A quick way to do that is to use the **Format Painter**. Its icon is the paintbrush on the **Home** tab, in the **Clipboard** group. To use it, click cell **B5**, which has the format you want, click the paintbrush, and click **B12**. All the formatting in **B5** is “painted” onto **B12**.

5. If you need to remind yourself of something about the contents of a cell you can use an Excel **Note**. These are like Post-It notes that you can tack on to any cell. For example, click **C11**, right-click, and select **New Note**, or tap **Shift + F2**. In the box, type **Used SUMIFS**.

10	Tulip Types	5 Tulip Total using SUMIFS	
11	Tulip Total Quantity	433	433
12	Tulip Average Price	\$ 11.43	

Douglas Robertson:
Used SUMIFS.

Notice that Excel inserts the name of the user automatically so if more than one person makes a **Note** you can see who did it. **Notes** do not automatically appear when the worksheet is printed. If you want to print them, go to **Page Layout**, **Page Setup**, **Sheet**, click the **Comments and notes** down-arrow, and select **As displayed on sheet**. For more options on **Notes**, click the **Review** tab and click the **Notes** down-arrow.

Click **C11**. Depending on how your version of Excel is set up, the **Note** may disappear, leaving only a small red triangle in the upper right corner of the cell. If you click the cell the **Note** textbox will appear. To have the **Note** stay on the screen, right-click the cell and select **Show/Hide Note**. To hide a **Note**, right-click and select **Show/Hide Note** again. To delete a **Note**, click the cell, right-click, and select **Delete Note** (do not do that).

6. To add a cute image to the **Bulbs** worksheet, on the **Insert** tab, in the **Illustrations** group, click **Icons**. In the search box, type **tulip**. Click the tulip icon, and click **Insert**.
7. Drag the **tulip** icon so it is in column **C**, just under **As of December 31**.
8. On the **Graphics Format** tab, in the **Graphics Styles** group, click the **Graphics Fill** arrow and select orange.

Mac: Right-click the icon. Select **Format Graphic**. Click the paint bucket and **Fill**.

9. On the **Graphics Format** tab, in the **Graphics Styles** group, click the **Graphics Outline** arrow and select black.

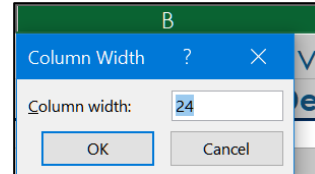
Mac: Click the paint bucket and **Line**.

	A	B	C
1	Pasadena Facility: Inventory		
2	As of December 31		
3			
4	Total Items in Stock	2,847	
5	Average Price	\$ 8.99	
6	Median Price	\$ 8.42	
7	Lowest Price	\$ 4.75	
8	Highest Price	\$ 16.58	




- h. Set up the **Bulbs** worksheet to print in **Portrait** orientation, all on **one page**, **centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Make the **Note** in cell **C11** appear on the output. Compare the preview with the key. Make needed corrections, save the workbook, but do not close it.
- i. Use the **COUNTIF**, **SUMIFS**, and **AVERAGEIFS** functions to collect **Bulbs** and **Trees** summary data by doing the following:

1. Click the **Summary** worksheet tab.
2. Select columns **B:D**. Right-click and select **Column width**. Type **24**.




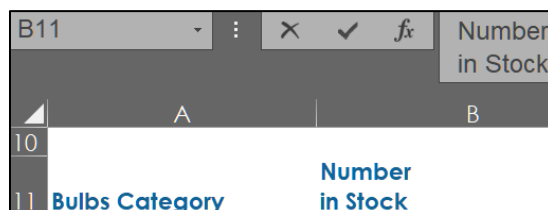
3. Starting in **A11** type the labels shown below. **Be careful with your spelling!**

	A	B	C	D
10				
11	Bulbs Category	Number in Stock	Number of Categories	Average Price
12	Begonias			
13	Callas			
14	Daffodils			
15	Dahlias			
16	Gladiolus			
17	Tulips			
18				
19	Trees Category	Number in Stock	Number of Categories	Average Price
20	Evergreens			
21	Flowering Trees			
22	Fruit Trees			
23	Nut Trees			
24	Shade Trees			

4. Use the **Format Painter** to match the formatting of the new column and row headings to those in cell **A7**. To do that, click **A7** and, on the **Home** tab, in the **Clipboard** group, double-click the **Format Painter**. 

Then, drag across the cells where you want the format to be applied (**A11:D11**, **A11:A17**, **A19:D19**, **A19:A24**). Now, click the **Format Painter** icon to turn it off.

5. Select row **11**, right-click, select **Row height**, and type **28**.
6. Do the same for row **19**.
7. The formula bar is set to show only one line. Click the arrow on the right,  and three lines of the formula bar will appear.
8. Click **B11**. In the formula bar, place the insertion point just to the left of the **i** and tap **Alt + Enter**. Tap **Enter**. This will put **in Stock** below **Number**.



9. Repeat for **C11**, **D11** and center all three titles so they look like this:

B11		Number in Stock		
	A	B	C	D
10				
11	Bulbs Category	Number in Stock	Number of Categories	Average Price
12	Begonias			

10. Copy **B11:D11** and paste in **B19:D19**.
11. Change the widths of columns **B**, **C**, and **D** to **13 pt**.
12. Place a light border around **A11:D17** (select **A11:D17**, right-click, select **Format cells**, click **Border**, click the **light border** (just under **None**), click **Outline**, click **Inside**, and click **OK**).
13. Repeat for **A19:D24**.
14. In **B12**, display the sum of the quantities of the different types of **Begonias** in stock on the **Bulbs** worksheet. To do that, click **B12** and type **=sumifs(**

=sumifs(
SUMIFS(sum_range, criteria_range1, criteria1, ...)

The screen tip appears showing the structure of the **SUMIFS** formula:

- **sum_range**, which means “Which numbers are you going to sum?” (on the **Bulbs** sheet, **Quantity in Stock** range **A15:A42**).
- **criteria_range1**, which means “Where are you going to look?” (on the **Bulbs** sheet, in the **Category** range **F15:F42**).
- **criteria1**, which means “What are you looking for?” (the word **Begonias**).

Now, click the **Bulbs** worksheet and select **A15:A42**

then type a **comma**

then click the **Bulbs** worksheet and select **F15:F42**

then type a **comma**

then click the **Summary** worksheet and click **A12**,

then type a right parenthesis **)**

finally, click the **Enter** checkbox to keep **B12** active.

B12 should display the number **314** and the formula bar will show **=SUMIFS(Bulbs!A15:A42,Bulbs!F15:F42,Summary!A12)**

This is similar to the previous **SUMIFS**. The only difference is that the first two cell ranges are on the **Bulbs** worksheet and the criteria is not a word in quotes (like “**Tulips**”) but a cell reference that has the criteria word in it; that is, **A12**, which contains the word **Begonias**, acts as the criteria.

what to sum where to look what to look for
=SUMIFS(Bulbs!A15:A42 , F15:F42 , Word in A12 on Summary Sheet)
range that has range that Begonias
Quan in Stock has criterion

Before copying the formula to **B13:B17**, you need to convert the ranges for the **Bulbs** worksheet to absolute references so when you fill the formula down the ranges on the **Bulbs** worksheet will not change (similar to what you did on page 355 of the textbook). To do that quickly, in the formula bar click the cell reference **A15** and then tap the **F4** key. Remember, on a laptop, you may have to hold down the **fn** key when you tap **F4**.

The cell reference changes to **\$A\$15**. If you forget about this keyboard shortcut, you can always type the **\$** manually.

Do the same for cell references **A42**, **F15**, and **F42** and then tap the **Enter** check box on the formula bar.

Do **NOT** put in the **\$** for **A12** because you want that to change to **A13**, then **A14**, etc. when you fill down.

Now the formula looks like this:

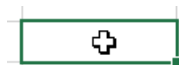
=SUMIFS(Bulbs!\$A\$15:\$A\$42,Bulbs!\$F\$15:\$F\$42,Summary!A12)

15. Point to the lower right corner of **B12** and the **fill handle** (little black cross) will appear. Drag down to **B17** and let up the mouse button. This copies (fills) the formulas. Note that if you double-click the fill handle the formula will be filled down automatically, without having to drag.

B12	=SUMIFS(Bulbs!\$A\$15:\$A\$42,Bulbs!\$F\$15:\$F\$42,Summary!A12)						
	A	B	C	D	E	F	G
10							
11	Bulbs Category	Number in Stock	Number of Categories	Average Price			
12	Begonias	314					
13	Callas	101					
14	Daffodils	755					
15	Dahlias	473					
16	Gladiolus	771					
17	Tulips	433					

If you see any zeros, check your spelling in **A12:A17**. Be sure there are no blank spaces, which you cannot see but which Excel knows are there.

Note that when you point to a cell you will see one of three icons:



White Cross shows where the mouse is pointing.



Black Cross in lower right corner is the fill handle. To copy a formula down, drag this cross or double-click it.



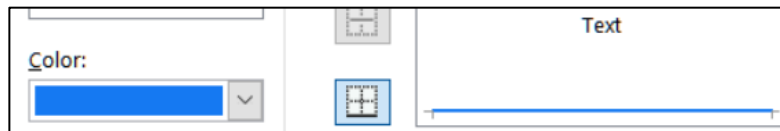
Four-headed Arrow allows you to drag the contents of the cell in any direction. When you drag a cell onto another cell the contents of that other cell will be replaced.

16. Enter similar formulas in cells **B20:B24**. A quick way to do that is to copy the formula in **B12** and paste it into **B20**. Then, in **B20** change **Bulbs!** to **Trees!** and change **A12** to **A20**. So, the formula in **B20** would be

=SUMIFS(Trees!\$A\$15:\$A\$42,Trees!\$F\$15:\$F\$42,Summary!A20)

17. Fill the formula in **B20** down to **B24**.

- j. In **C12:C17**, enter formulas that display the **Number of Categories** (that is, the number of different types of **Begonias**, **Callas**, etc.). Here, you are counting the different types of bulbs so you will use the **COUNTIF** function.¹⁰
- k. In **C20:C24** do the same for **Trees**.
- l. In **D12:D17**, enter formulas that display the **Average Price** for the bulbs. Here, you are finding an average so you will use the **AVERAGEIFS** function.¹¹
- m. In **D20:D24** do the same for **Trees**.
- n. Format the cells in **D12:D17** and **D20:D24** to the accounting style.
- o. The Sparklines in **D5:D9** are not informative because all the tree prices are so much larger than the bulb prices. Do the following to remove them:
1. Select **D5:D9**.
 2. Tapping the **Del** key does not delete the Sparklines. Instead, on the **Sparkline** tab, in the **Group** group, click the **Clear** arrow, and select **Clear Selected Sparklines**.
 3. Click **D4** and use the **Del** key to delete **Bulbs/Trees** title.
 4. While still in **D4**, right-click and select **Format Cells**. Click the **Border** tab and click the bottom border to delete it.




5. Click **OK**.
- p. Make the worksheet easier to read by doing the following:
1. Right align cells **A5:A24**.
 2. Center align cells **B12:C24**.
- q. Set up the **Summary** worksheet to print in **Portrait** orientation, all on **one page**, **centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook, and close it.

¹⁰ =COUNTIF(Bulbs!\$F\$15:\$F\$42,Summary!A12)

¹¹ =AVERAGEIFS(Bulbs!\$D\$15:\$D\$42,Bulbs!\$F\$15:\$F\$42,Summary!A12)

HW03-4 Payroll IF

Problem: How can you set up a payroll worksheet that automatically calculates regular pay, overtime pay, total pay, and summary statistics?

- Open the workbook **HW03-4 Payroll IF Original**, which is one of the files you downloaded at the start of the term.
- Save the workbook to your **Excel Files** folder using the name **HW03-4 HWID Payroll IF Done**
- Sort the data alphabetically by name by doing the following:
 - Select rows **8** through **28**. Be sure to select entire rows and not just the **Name** column or the data will be scrambled. To select an entire row, point to the row **8** number. The cursor will change to a right-pointing arrow.  Click to select the entire row **8**. Then, drag down to row **28**.
 - On the **Home** tab, in the **Editing** group, click the **Sort & Filter** arrow, and select **Custom Sort** from the menu.

Mac: The **Editing** group might look like a magnifying glass:



- Be sure there is a check next to **My data has headers** so the titles in row **8** will not be sorted with the rest of the data.
- Select **Name** from the **Column Sort by** drop-down menu.

+ Add Level		X Delete Level		Copy Level		^ v		Options...		<input checked="" type="checkbox"/> My data has headers	
Column		Sort On		Order							
Sort by		Name		Cell Values		A to Z					
		ID									
		Name									

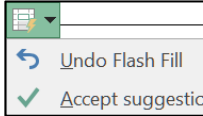
You want the names in alphabetical order so leave the **Order** as **A to Z**.

- Click **OK**.

- Break-up the names in column **B** so that the last names and first names are shown in separate cells by doing the following:
 - Select columns **C** and **D**, right-click, and choose **Insert**. This will move column **C** (**Sex**) right to become a new column **E** and leave two blank columns, now called **C** and **D**, that will hold the last and first names.

	A	B	C	D	E
1	Payroll				
2					
3	Date Modified:				
4	Time Modified:				
5	Current Date:				
6	Current Time:				
7					
8	ID	Name			Sex
9	4470881	Anderson, Amanda R			F

- Type **Last Name** in **C8** and **First Name** in **D8**.

3. In **C9**, type **Anderson**. This is the last name of the first person on the list. Click the **Enter** checkbox to accept the typing and remain in cell **C9**.
 4. With **C9** still selected, on the **Home** tab, in the **Editing** group, click **Fill**, and select **Flash Fill**. The last names are filled in column **C**. If a small icon appears, click its arrow and click **Accept suggestions**. 
 5. In **D9**, type **Amanda**. This is the first name of the first person on the list. Click the **Enter** checkbox to accept the typing and remain in cell **D9**.
 6. With **D9** still selected, on the **Home** tab, in the **Editing** group, click **Fill**, and select **Flash Fill**. The first names are filled in column **D**. Click **Accept suggestions**, if necessary.
 7. You no longer need the **Name** column so select the entire column (click the column letter **B**), right-click, and select **Delete**. The columns to the right are shifted left so now **Sex** is in column **D**, **Pay Rate** is in column **E** and so on. ¹²
 8. **AutoFit** columns **A:E**.
- e. In **G9**, enter a formula to calculate the regular pay for **Anderson**. You can use the **IF** function to do that. The **IF** function chooses between two alternatives. In this case, the alternatives are two different ways of calculating regular pay, depending on the hours worked.

Here is the logic you need to use:

- If she worked **40** hours or **less** (**F9<=40**) then the regular pay is computed by multiplying rate and hours (**E9*F9**).
- If she worked **over 40** hours, then she worked 40 regular hours. In that case, the regular pay is the product of rate and 40 (**E9*40**).

1. Type your formula in **G9**.

logical test (condition)	display if condition TRUE	display if condition FALSE
=IF(F9<=40 , E9*F9 , E9*40)		
are hours 40 or less?	pay rate times hours	pay rate times 40

So, the formula is **=IF(F9<=40,E9*F9,E9*40)**


2. Tap Enter and check the result. Since Anderson worked 21 hours her regular pay will be her **Pay Rate** times her **Total Hours**, 6*21 = 126.
3. Fill the formula in **G9** down to row **28** and preserve the format.

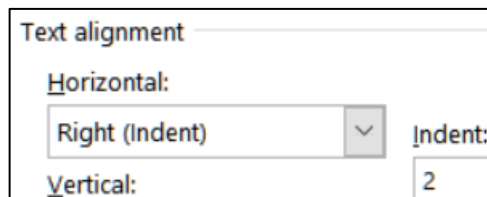
¹² **Flash Fill** can also work in reverse. For example, if you were to click cell **L9**, type **Amanda Anderson**, tap **Enter**, and then select **Flash Fill**, the rest of the names would be filled in (**Christopher Bastian-Smith III**, **Elmer Gary Bell**, and so on. Don't do this!

4. Check the result for Bell, in **G11**. He worked 50 hours, which is 40 regular hours and 10 overtime hours. So, his regular pay will be his **Pay Rate** times **40**, $3 \times 40 = 120$.
- f. In **H9**, enter a formula to calculate the overtime pay for **Anderson**.
- If Anderson worked 40 hours or less (**F9<=40**) then her overtime pay is **0** (she has not worked overtime so her overtime pay is 0).
 - If Anderson worked over 40 hours, then her overtime pay is computed by multiplying the rate times 1.5 (for time and a half) times the number of overtime hours worked. Here, the overtime hours will be the total hours minus 40. Remember to use parentheses where appropriate because you want the computer to do the subtraction of the hours before it multiplies by the rate.
1. Type your formula in **H9**.

logical test
(condition) display if
condition
TRUE display if
condition
FALSE
=IF(F9<=40 , 0 , E9*1.5*(F9 - 40))
are hours
40 or less? no
overtime pay rate times 1.5
times hours over 40

So, the formula is **=IF(F9<=40,0,E9*1.5*(F9-40))**

2. Tap **Enter** and check the result. **Anderson** worked **21** hours so her overtime pay will be **0**.
 3. Fill the formula in **H9** down to row **28** and preserve the format.
 4. Check the result for Bell, in **H11**. He worked 50 hours, which is 40 regular hours and 10 overtime hours. So, his overtime pay will be his **Pay Rate** times **1.5** times **10**, $3 \times 1.5 \times 10 = 45$.
- g. In **I9** (that is eye *nine* not 19) enter a formula that will add the regular and overtime pay for **Anderson**. Enter the same formula in **J9**. You will see why later. Fill the formulas in **I9:J9** down to row **28** and preserve the format.
- h. Improve the “look” of the numbers in **G9:J28** by doing the following:
1. Select **G9:J28** and, on the **Home** tab, in the **Number** group, click the **Increase Decimal** button  twice to show cents.
 2. Select **G9:J28**, right-click any cell, and choose **Format cells**. On the **Alignment** tab, under **Text alignment**, **Horizontal**, change **Indent** from **0** to **2**.
 3. Click **OK**. This looks nicer.



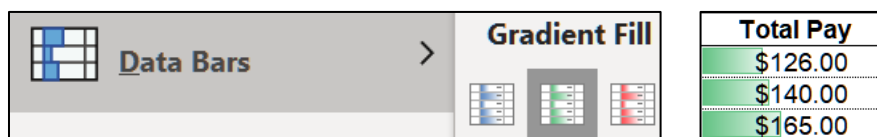
G	H	I	J
Regular Pay	Overtime Pay	Total Pay	Total Pay
\$126.00	\$0.00	\$126.00	\$126.00
\$140.00	\$0.00	\$140.00	\$140.00
\$120.00	\$45.00	\$165.00	\$165.00

i. Insert a rank indicator to show the rankings for **Total Pay**.

1. In **K9** type **=rank(\$i9,\$i\$9:\$i\$28)** and tap **Enter**. This calculates Anderson's rank in terms of total pay. The **RANK** function compares the value in **I9 (Anderson's Total Pay)** with the values in **I9:I28** and displays her rank (1, 2, 3, etc.).

Note the use of dollar signs, which indicate **absolute** references:

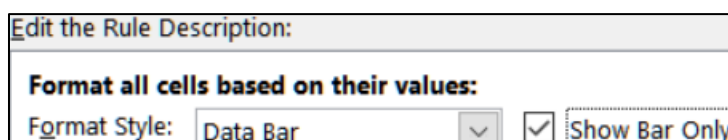
- The **\$** to the left of **i** says to **NOT** change the column indicator, **i**, when the formula is copied left or right. This is an **absolute** reference.
 - There is no **\$** to the left of the first **9** because when you fill the formula down you want this **9** to change to **10**, and then to **11**, and then to **12**, so on. This is a **relative** reference.
 - The **\$** to the left of the second **9** and the **28** (in the range **\$i\$9:\$i\$28**) says to keep those row numbers the same when the formula is filled down. That will keep the range the same for all rows.
2. Fill the formula in **K9** down to **K28** and preserve the format. The ranks range from **1**, highest pay (in **I24**), to **20**, lowest pay (in **I26**).
 3. Use a conditional format to highlight duplicate **Pay Ranks**. Since you want to format the ranks, select the range **K9:K28**. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**, select **Highlight Cells Rules**, and select **Duplicate Values**. Click **OK**. Notice that **Bostrom** and **Francis** both made **\$80** so they are tied for **17th** place. Hence, there is no rank **18**.
 4. Use a conditional format to make a bar graph of the **Total Pay**. Since you want the format to be on the **Total Pay** cells, select the range **J9:J28**. Then, on the **Home** tab, in the **Styles** group, click **Conditional Formatting**, select **Data Bars**, and select the green **Gradient Fill** icon.



This provides a visual representation of the relation between the **Total Pay** values of the employees.

Having the numbers and the data bars in the same cell sometimes makes the numbers difficult to read. To have only the data bars show in column **J** do the following:

5. Select the range **J9:J28** again. On the **Home** tab, in the **Styles** group, click **Conditional Formatting, Manage Rules**.
6. Double-click the **Data Bar** rule to open its dialog box.
7. Under **Edit the Rule Description**, click the box next to **Show Bar Only**.



8. Under **Bar Appearance**, choose **Solid Border** and black for the **Color**.
9. Click **OK**. Then, click **OK** again. Now, the **Total Pay** numbers are in column I and the **Data Bars** are in column J.

I	J
Total Pay	Total Pay
\$126.00	
\$140.00	
\$165.00	
\$92.00	

- j. In order to make some formulas easier to read and understand, Excel allows users to create what are called **named ranges**. To see how helpful this can be, do the following:

1. Select cells **D9:D28**. In the name box, type **Sex**.



Tap **Enter**. Now, anytime you want to use that range in a formula, you can use its name rather than the cell references.

Names must begin with a letter. They cannot contain spaces but can contain the underscore.

2. In the same way, create the following named ranges:

E9:E28 PayRate

F9:F28 TotalHours

H9:H28 OvertimePay

I9:I28 TotalPay

3. To see a list of your named ranges, on the **Formulas** tab, in the **Defined Names** group, click **Name Manager**.

Mac: **Formulas**, **Defined Names**, **Define Name** arrow, **Define Name...**

Name Manager			
<div> <div>New...</div> <div>Edit...</div> <div>Delete</div> </div>			
Name	Value	Refers To	Scope
OvertimePay	{ "\$0.00"; "\$75.00"; "\$0.00"; ... }	= 'Payroll Data'!\$H\$9:\$...	Workbook
PayRate	{ "6"; "5"; "4"; "3"; "4"; "1"; ... }	= 'Payroll Data'!\$E\$9:\$...	Workbook
Sex	{ "F"; "M"; "M"; "M"; "M"; ... }	= 'Payroll Data'!\$D\$9:\$...	Workbook
TotalHours	{ "21"; "50"; "35"; "50"; "2... }	= 'Payroll Data'!\$F\$9:\$...	Workbook
TotalPay	{ "\$126.00"; "\$275.00"; ... }	= 'Payroll Data'!\$I\$9:\$I...	Workbook

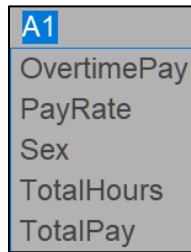
If you want to change a name, select it and click **Edit**.

If you want to delete a name, select it and click **Delete**.

Mac: To delete a name, select it and click the **minus sign** inside a box.



4. Click **Close**. You can also see your named ranges by clicking the arrow in the name box.



Selecting a name will select the cells in that range.

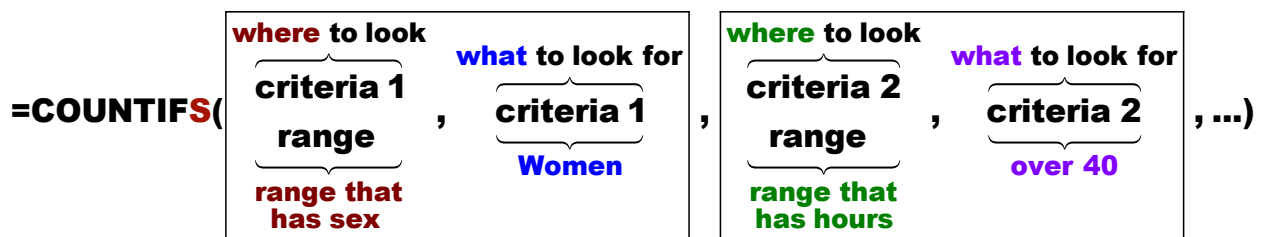
- k. In **J3**, insert a function that will display the number of people who earned overtime pay. Since you are looking for a number of things, use **COUNTIF**. The form for **COUNTIF** is **=COUNTIF(range, criteria)** The range is “where to look” and the criteria is “what to look for”. Be sure to put the **criteria** inside quotation marks: You can write the formula in two different ways:

=COUNTIF(H9:H28,">0") Uses cell references

=COUNTIF(OvertimePay,">0") Uses the named range for **Overtime Pay**.

As you can see, using a named range makes the formula easier to read and understand.

- l. In **J4**, insert a function that will display the number of **women** who earned overtime pay. To count cells based on multiple criteria (here, sex and overtime pay), use the **COUNTIFS** function. It has the form:



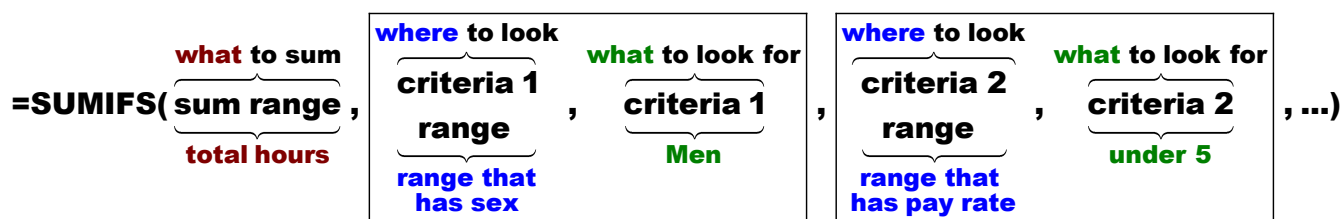
It is basically the **COUNTIF** function with two or more ranges and corresponding criteria (hence the **S** in **COUNTIFS**). Again, remember to put the criteria inside quotation marks, as in "**=F**".¹³

- m. In **J5**, insert a **SUMIFS** function that will display the sum of the **Total Pay** for people who worked overtime. Remember, the form for **SUMIFS** is **SUMIFS(sum_range, criteria_range1, criteria1, ...)** Here, there is only 1 criterion. Be sure to put the **criteria** inside quotation marks.¹⁴

¹³ **=COUNTIFS(D9:D28,"=F",F9:F28,">40")** or **=COUNTIFS(Sex,"=F",TotalHours,">40")**

¹⁴ **=SUMIFS(I9:I28,H9:H28,">0")** or **=SUMIFS(TotalPay,OvertimePay,">0")**

- n. In **J6**, insert a function that will display the total hours for men whose pay rate is under 5 dollars. To sum cells based on multiple criteria (here, sex and pay rate), use the **SUMIFS** function again. It has the form:



sum range: Which cells do you want to sum? **Total Hours (F9:F28)**.

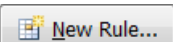
criteria 1 range: Whose **Total Hours** do you want to include?
Those of **Men**, so use the **Sex** in **D9:D28**

criteria 1: What should the **Sex** be? **M**, so use **"=M"**

criteria 2 range: What kind of men do you want to include?
Those who have a certain **Pay Rate**, which is in **E9:E28**

criteria 2: What should the **Pay Rate** be? Under **5**, so use **"<5"** ¹⁵

- o. Create a conditional format so that the data of the people who worked overtime has **Bold Red** text and a **Yellow** cell fill by doing the following:

1. You want to apply the formatting to the data, so select **A9:K28**.
2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting** and select **Manage Rules**.
3. Click  **New Rule...**

Mac: Click the **plus sign** inside a box  in lower left corner. From **Style** select **Classic**.

4. Click the last bullet, **Use a formula...**
5. Type this into the formula box: **=F9>40** This says to see if the value in **F9** (**Total Hours** for Anderson) is greater than **40**. If it is, apply a special format to the selected cells (**A9:K28**); otherwise, leave the cells alone.
6. Click **Format**. Set the font to **Bold Red** and the fill to **Yellow**.
7. Click **OK** twice.

Rule (applied in order shown)	Format	Applies to
Formula: =F9>40	AaBbCcYyZz	=A\$9:K\$28

Notice that the formula **=F9>40** looks like it will only evaluate Anderson's pay. However, under **Applies to** the range for this conditional format is **\$A\$9:\$K\$28** so Excel will use **=F10>40** for Bastian-Smith, and **=F11>40** for Bell, and so on. That is because you selected **\$A\$9:\$K\$28** before you created the conditional format.

8. Click **OK** to return to edit mode. The format is applied to the data of the seven people who have worked overtime (this matches the value in **J3**).

¹⁵ **=SUMIFS(F9:F28,D9:D28,"M",E9:E28,"<5")** or **=SUMIFS(TotalHours,Sex,"=M",PayRate,"<5")**

- p. Excel stores dates and times as whole numbers representing the number of days since 1900-Jan-0, plus a fractional portion of a 24-hour day. This is called a serial date, or serial date-time. For example, 18 June 2021 at 8:35 am is stored as 44365.3576388889.

Be careful if you switch between Windows and **Mac** because, for historical reasons, older **Macs** use 1904 for its starting year rather than 1900. If you change the date system for a workbook that already contains dates, the dates will shift by four years and one day (1462 days taking Leap Years into account). So, if you switch from one computer to another be sure to check that the dates are correct.

In Windows, if you want to change your dates to the 1904 version use **File, Options, Advanced, When calculating this workbook** and check the box next to **Use 1904 date system**. This is **NOT** recommended.¹⁶

Mac: Excel menu, **Preferences, Formulas and Lists, Calculation**.

Enter the date and time and apply custom formatting by doing the following:

1. Click **B3** and enter the current date. You can either type the date or tap **Ctrl + ;** (that is, hold down the **Ctrl** key and tap the semicolon key) and then tap **Enter**. This is a static date, which means that it will stay at that value until you enter in a new one.
2. Click **B4** and enter the current time. You can either type the time or tap **Shift + Ctrl + :** (that is, hold down both the **Shift** key and the **Ctrl** key and tap the colon key) and then tap **Enter**. This is a static time, which means that it will stay at that value until you type in a new one.
3. Click **B5**, type **=now()** and tap **Enter**. Note the parentheses **()** with nothing inside them! This enters the current date and time and it will automatically change each time Excel recalculates any formula. Excel also has a **DATE** function, but that **does not** display the date! **DATE** displays a number that Excel uses to internally keep track of time. It is not very useful unless you are a programmer.
4. Click **B6**, type **=now()** and tap **Enter** again. You get the same result as in **B5**.
5. Select cells **B3** and **B5**. To select non-adjacent cells, click the first cell, then hold down the **Ctrl** key and click the second cell. With the two cells selected, right-click, and select **Format Cells**.
6. Click the **Number** tab and click **Custom**.¹⁷
7. Replace the text in the **Type:** box with **ddd d mmm yyyy**. This tells Excel to display the date using the day of the week (**ddd**), the date (**d**), the month (**mmm**), and the four-digit year (**yyyy**).

¹⁶ For more information see <https://support.microsoft.com/en-us/help/214330/differences-between-the-1900-and-the-1904-date-system-in-excel>

¹⁷ For more information on custom formatting, see <https://www.youtube.com/watch?v=tGY70sdpaLc>

8. Click **OK**. If you see ##### in the cell it means the column is too narrow. Make the column wider if necessary.
9. Select cells **B4** and **B6** and follow the same procedure except replace the text in the **Type:** box with **h:mm am/pm** and tap **Enter**. The **h** tells Excel to display the hour, **mm** tells Excel to display the minutes, and **am/pm** tells Excel to display either **AM** or **PM**, depending on whether the current time is before noon or after noon. Notice that the times in the two cells are different. Cell **B4** displays the time when you tapped **Shift + Ctrl + :** while **B6** displays the current time (it was just updated when you tapped **Enter**).

	B
3	Fri 18 Jun 2021
4	2:01 PM
5	Fri 18 Jun 2021
6	2:03 PM

10. Select **A3:B6**. Place a heavy border around the outside and a light border between the rows.
11. Now, create some other custom formats. Click **J3**, right-click, and select **Format Cells**. On the **Number** tab, click **Custom**. Replace the text in the **Type:** box with **# " people" _)**

	A	B
2		
3	Date Modified: Fri 18 Jun 2021	
4	Time Modified: 2:01 PM	
5	Current Date: Fri 18 Jun 2021	
6	Current Time: 6:08 PM	

tells Excel to display the number without decimal places,

" people" says to display the word **people**,

_) says to leave one blank space on the right (so this will line up nicely with the accounting format that will be in **J5**).

Click **OK**.

12. Click **J4** and follow the same procedure except replace the text in the **Type:** box with **# " women" _)**
13. Click **J5**, right-click, and select **Format Cells**. On the **Number** tab, click **Accounting**. Be sure two decimal places and the \$ show. Click **OK**.


For historical reasons, the **Accounting** style places the \$ on the left edge of the cell whereas the **Currency** style places it against the number. Also, the **Accounting** style places a blank space to the right of the number.

Accounting: \$ 1,597.50 Currency: \$1,597.50

14. Click **J6** and follow the same procedure except replace the text in the **Type:** box with **# " hours" _)**

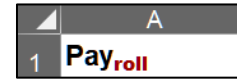
J6	=SUMIFS(TotalHours,Sex,"=M",PayRate,"<5")									
	A	B	C	D	E	F	G	H	I	J
1	Payroll									
2										
3	Date Modified: Fri 18 Jun 2021					Number of people who earned overtime pay = 7 people				
4	Time Modified: 2:01 PM					Number of women who earned overtime pay = 6				
5	Current Date: Fri 18 Jun 2021					Sum of Total Pay for people who worked overtime = \$ 1,597.50				
6	Current Time: 2:22 PM					Total hours for men whose pay rate is under \$5 = 130 hours				

q. Excel allows you to change the font characteristics of text within a cell. Try this:

1. Double-click **A1** to enter edit mode.
2. Select the four letters **roll** in the word **Payroll**.
3. On the **Home** tab, in the **Font** group, click the launch dialog button  (lower right corner of the **Font** group).

Mac: Tap **Command + 1** to open **Format Cells, Font**.

4. Put a check in the box next to **Subscript**, make the color red, and the font Arial Black.



5. Click **OK** and then tap **Enter**.

r. Follow a similar procedure make the following changes:

In **I3**, make the word **people** bold and purple.

In **I4**, make the word **women** bold and red.

In **I6**, make the word **men** bold and blue.

- s. Note that the time in **B4** is the same as it was when you tapped **Shift + Ctrl + :** but the time in **B6** is the current time because you just made a change to **I6** and so Excel did a recalculation of all cells. If you open this file tomorrow, the date in **B3** will be today's but the date in **B5** will be tomorrow's.
- t. Set it up the Payroll Data worksheet to print in **Landscape** orientation, all on **one page**, **centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook and close it.
- u. Copy the **Payroll Data** worksheet and name the new worksheet **Payroll Formulas**.
- v. Display the formulas (**Formulas, Formula Auditing, Show Formulas**) and **Autofit** the columns. Then, change the width of column **I** to **6**.

Note that cell **B3** has the number Excel uses for dates (in my case, **44365**) and cell **B4** has the number Excel uses for time (in my case, **0.584027777777778**). However, cells **B5** and **B6** show the **NOW** formula, which calculates the current date and time.

	A	B
1	Payroll	
2		
3	Date Modified: 44365	
4	Time Modified: 0.584027777777778	
5	Current Date: =NOW()	
6	Current Time: =NOW()	
7		

- w. Set up the **Payroll IF Payroll Formulas** worksheet to print in **Landscape** orientation, all on **one page**, **centered horizontally** but not vertically, and with **left** and **right margins** set to **0.5**. Include a footer that contains the **file name** on the left and the **sheet name** on the right, and **without** gridlines but **with** row and column headings showing. Compare the preview with the key. Make needed corrections, save the workbook, and close it.

Step 4 Submit Now, do the following to create your pdf files. **Each file should contain only one worksheet on a single page. Do NOT submit multiple worksheets or pages in a single pdf. Check the key on page SG402.**

Use these names for the pdf files:

HW03-1 HWID 2A Tree Inventory Done

HW03-2 HWID 2B Weekly Sales Done (Summary) – This is the Summary worksheet

HW03-3 HWID 2G Inventory Done (Bulbs) – This is the Bulbs worksheet

HW03-3 HWID 2G Inventory Done (Summary) – This is the Summary worksheet

HW03-4 HWID Payroll IF Done

Create a pdf file of the output for each of the above, place them in a folder called **HW03 HWID LastName, FirstName**, zip the folder and, by the due date, submit it to the Canvas folder **HW03 Excel Chapter 2: Functions, Tables, and Large Workbooks**.

Step 5 Backup Now would be a good time to backup your files.

Project 4

Excel Chapter 3: Analyzing Data with Charts and What-If Tools

Step 1 Read Read the introductory material on page 459 in the textbook.

Step 2 Activities Turn on the computer and do the following:

Project 3A: Start at the top of page 461.

Instead of **Activity 3.01 step 1** do the following:

1. Navigate to your **Excel Files** folder and open **e03A_Enterprise_Fund**, which is one of the files you downloaded at the start of the term.
2. Save the file in your **Excel Files** folder using the name **Lastname_Firstname_3A_Enterprise_Fund**
3. Complete the rest of the Activities through step 8 on page 473. Do **NOT** do steps 9 and 10 in **Activity 3.11** on page 473.
4. **Return here** when you have completed Project 3A on page 473.

Do NOT do GO! With Google Sheets

Project 3B: When you have completed Project 3A, start at the top of page 476.

Instead of **Activity 3.13 step 1** do the following:

1. Navigate to your **Excel Files** folder and open **e03B_Tourism**, which is one of the files you downloaded at the start of the term.
2. Save the file in your **Excel Files** folder using the name **Lastname_Firstname_3B_Tourism**.
3. Complete the rest of the Activities through step 10 on page 494. Do **NOT** do steps 11 and 12 in **Activity 3.22** on page 494.
4. **Return here** when you have completed Project 3B on page 494.

Do NOT do GO! With Google Sheets or GO! To Work

Step 3 Homework After you have completed Projects A and B return here, do the following additional activities, and turn them in for grading.

HW04-1 Enterprise Fund (Based on Project 3A)

Problem: How can you visually display the relationship between expenditures for an enterprise?

- a. Open the workbook **Lastname_Firstname_3A_Enterprise_Fund**, which you created while following the directions in the textbook and saved on page 473.
- b. Save the workbook to the **Excel Files** folder using the name **HW04-1 HWID 3A Enterprise Fund Done**
- c. Set up the **Expenditures Chart** to print in **Landscape** orientation and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook and close it.

HW04-2 Tourism Spending Projection (Based on Project 3B)

Problem: How can you make data-based predictions concerning tourism at a resort?

- a. Open the workbook **Lastname_Firstname_3B_Tourism**, which you created while following the directions in the text and saved on page 494.
- b. Save the workbook to the **Excel Files** folder using the name **HW04-2 HWID 3B Tourism Done**
- c. Click the **Expenditures** tab. The background picture makes the chart more interesting and visually pleasing, but it may detract from clearly seeing the data. That is a problem with being cute; it sometimes makes it more difficult to see that which is important. Adjust the transparency of the chart by doing the following:
 1. Click anywhere in the chart.
 2. On the **Chart Format** tab, in the **Current Selection** group, click the arrow and select **Chart Area**.
 3. Click **Format Selection** to open the **Format Chart Area** pane.

Mac: On the **Format** tab, in the **Format** group, click **Format Pane**. If you have a small screen, you may have to click the double chevron to the right of the **Chart Design** tab to see the **Format** tab. Click **Format Pane**.



4. Click the paint bucket to show the **Fill & Line** choices.
5. Click the **Fill** arrow to show its options.
6. Make the **Transparency** 30%. Now you can better see the information on the chart. You still can see the picture, but it is not so overpowering. Depending your printer, the transparency may not work correctly. If it does not, don't worry about it.

- d. On the **Expenditures** worksheet, click cell **A1** to be sure the chart is not selected. Set up the worksheet to print in **Portrait**, all on **one page**, **centered horizontally** but not vertically and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook, but do NOT close it.
- e. On the **Advertising** worksheet, click cell **A1** to be sure no chart is not selected. Set up the worksheet to print in **Portrait** orientation, all on **one page**, **centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook, and close it.

HW04-3 HLOOKUP Gradebook

Problem: Given the total points earned by students in a course, how can you assign the corresponding letter grades?

- a. Open the workbook **HW04-3 HLOOKUP Gradebook Original**, which is one of the files you downloaded at the start of the term.
- b. Save the workbook to your **Excel Files** folder using the name **HW04-3 HWID HLOOKUP Gradebook Done**.

At the end of each semester, I assign letter grades based on the total number of points students earned on homework and exams. Here is the table I use:

	B	C	D	E	F	G	H	I	J	K	L	M
5	Total Points	0	65	68	70	73	76	80	82	86	90	95
6	Comment	Ouch!	Study lots!	Study!	Fair	Ok	Not bad	Fine	Good	Pretty good	Very good	Great!
7	Grade	F	D	D+	C-	C	C+	B-	B	B+	A-	A

To assign a specific letter grade, I have Excel “look up” the total points in the above table and then display the corresponding letter grade. For this, I use one of Excel’s **LOOKUP** functions.

The above table is horizontal, so I use the **HLOOKUP** function. If the table were vertical, I would use **VLOOKUP** (see page **SG85**). The **HLOOKUP** function has the following form:

what to look for where to look row to display need exact or approximate match?
=HLOOKUP(lookup value **,** table array **,** row index num **,** range lookup **)**
total points range with total points and grades number of row with letter grades approximate match

- **lookup value** is the value to be found in the first row of the table. It can be a value, a reference, or a text string. In this example it is the **Total Points** earned. For example, Aanon’s total points is located in **J12**.
- **table array** is the range where the **lookup value** is to be looked up. In this case, it is **C5:M7**.

- **row index number** is the number of the row in the table I want displayed. In this example, it is row 3. Note that this is **NOT** the worksheet row number, which is 7. It is the row number within the range **C5:M7**.
- **range lookup** is an optional parameter that is either **TRUE** or **FALSE**. It specifies whether you want Excel to find an **exact (FALSE)** match or an **approximate (TRUE)** match.

If you type **TRUE** or omit this parameter, then the values in the first row of the table must be placed in ascending sort order. In that case, Excel will find an **approximate** match. For example, if the **lookup value** (total points) is **79**, Excel will scan the first row of the table for **79**. Since **79** is not listed, Excel will use the next lowest number in the table (**76**) and display the corresponding letter grade (**C+**). If the **lookup value** were **80**, Excel would display **B-**.

If you type **FALSE**, then the values in the first row of the table may be in any order. In that case, Excel will look for an **exact** match. If no exact match exists Excel will display **#N/A**. In this example, Aaron's total of 79 is not in the table so Excel would display the error message.

1. Click **K12** and type **=hlookup(**

A **ScreenTip** will appear to remind you of the form of the function.

Total	Grade	Comment
79	=hlookup(
HLOOKUP(lookup_value, table_array, row_index_num, [range_lookup])		

2. Finish by typing **j12,\$c\$5:\$m\$7,3)**

Your complete formula should be **=hlookup(j12,\$c\$5:\$m\$7,3)** Note the absolute references (the dollar signs) in **\$c\$5:\$m\$7**. You need the dollar signs so that when you copy the formula for the other students the location of the table will remain constant.

3. Click the **Enter** checkbox. The grade **C+** appears in **K12** and the formula appears in the **Formula Bar**.

Course: Math 1051 Instructor: Robertson											
Cutoff on Diagnostic Test -> 65											
Cutoff on Total Points Earned -> 65											
Num Stu with Diag Below Cutoff and Total At Least Cutoff ->											
Total Points	0	65	68	70	73	76	80	82	86	90	95
Comment	Ouch!	Study lots!	Study!	Fair	Ok	Not bad	Fine	Good	Pretty good	Very good	Great!
Grade	F	D	D+	C-	C	C+	B-	B	B+	A-	A
Num Stu											
Name	Attend	HW	Diagnostic	Ex1	Ex2	Ex3	Final Ex	Total	VLOOKUP	XLOOKUP	
Aaron, Natalie	80	90	99	56	94	74	74	79	Grade	Comment	Grade
									C+		

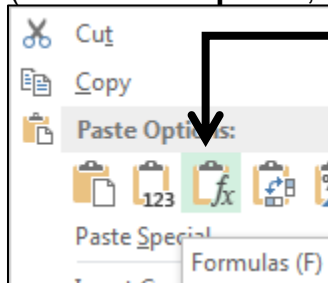
- To make the worksheet easier to work with, split the screen by doing the following:

1. Select row **17** (click the **17** row number).
2. On the **View** tab, in the **Window** group, click **Split**. This splits the screen into two parts. The top shows rows **1** through **16**. The bottom shows the rest of the rows.

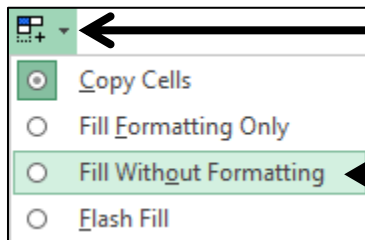
3. Click **B17**. Tap **Ctrl + Down Arrow**. This will move the active cell to the last non-blank cell in column **B** (**Williams** in **B121**). This same technique works moving to the last non-blank cell on the right (**Ctrl + Right Arrow**) or on the left (**Ctrl + Left Arrow**).

d. Copy the formula in **K12** by doing the following:

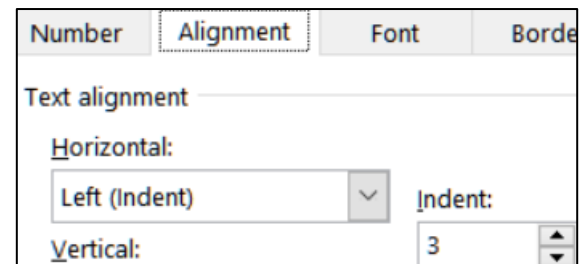
1. Click **K12** and tap **Ctrl + C** to copy the cell.
2. With **K12** still active, hold down the **Shift** key and click cell **K121**. This selects the range **K12:K121**.
3. Point to **K12** again, right-click, and select **Paste Options: Formulas (F)** (**Mac: Paste Special, Formulas**).



A second way of duplicating the formula is to use the **Fill Handle**. To do this, you would point to the lower right corner of **K12** and the fill handle (little black cross) would appear. Click the little black cross and drag down to **K121**. If you copy the formulas this way be sure to select **Fill Without formatting** from the **Auto Fill Options** menu to preserve the heavy black border at the bottom of **K121**.



4. With **K12:K121** still selected, right-click and select **Format Cells**. Click the **Alignment** tab. Under **Horizontal**, select **Left (Indent)** and in the **Indent** box enter **3**. Click **OK**. The effect is to line up the letters on the left and center the grade in each cell.



- e. For cell **L12**, create an **HLOOKUP** formula that will display the appropriate comment from the table in cells **C5:M7**. The comment should be based on the **Total** in column **J**. It will look very similar to the formulas in column **K**. In fact, the only difference will be that the **row index number** will be **2** rather than **3**. Then, fill the formula down to cell **L121**, preserving the format.

- f. Microsoft has introduced a new function called **XLOOKUP** that is designed to replace **VLOOKUP**, **HLOOKUP**, and **LOOKUP**. Unfortunately, older versions of Excel do not have this function. That is why I used the **HLOOKUP** function above. If your version of Excel has **XLOOKUP**, then do the following; otherwise skip this part, f, and leave **M12:M121** blank.

The **XLOOKUP** function has the following form:

=XLOOKUP(lookup_value, lookup_array, return_array, [if_not_found], [match_mode], [search_mode])

- **lookup value** is the value to search for. In this example it is the **Total Points** earned. For example, Anon's total points is located in **J12**.
- **lookup array** is the range where the **lookup value** is to be found. In this case, it is the total points in **C5:M7**.
- **return array** is the range that contains the values you want to return. In this case it is the comment in **C6:M6**.

The following three parameters are enclosed in square brackets, which means they are optional:

- **[if not found]** is what to display if the lookup value is not found. If it is not included and the lookup value is not found the **#N/A** error is displayed.
- **[match mode]** specifies how to do the match. It can have one of four values:
 - 0** means Excel will look for an exact match. This is the **default**.
 - 1** means if there is no exact match; Excel will return the next **smaller** item.
 - 1** means if there is no exact match; Excel will return the next **larger** item.
 - 2** means the lookup value contains the *, ?, or ~ wildcard. See page **SG140** for an example that uses wildcards.
- **[search mode]** specifies how to do the match.
 - 1** means to start the search at the first item. This is the **default**.
 - 1** means to do a reverse search starting at the last item.

So, the formula should look like this:

=XLOOKUP(what to look for **lookup value** , where to look **lookup array** , what to display **return array** , text to display if not found **range lookup** , exact or approximate match? **0,-1,1,2** , order **1,-1**)

total points J12 range with total points \$C\$5:\$M\$5 range with letter grades \$C\$6:\$M\$6 Not found return next smaller item -1 start at first item 1

Two of the last three parameters are optional. If you leave them off the default values will be used. So, both of these formulas work:

=XLOOKUP(J12,\$C\$5:\$M\$5,\$C\$6:\$M\$6,"Not found",-1,1)

=XLOOKUP(J12,\$C\$5:\$M\$5,\$C\$6:\$M\$6,,,-1)

Enter either formula and then fill down, preserving the format. The text in column **M** should match the text in column **L**.

- g. In **C8**, enter a formula that will display the number of students that earned the grade in **C7**. Give it a try. You want to count the number of students who earned the grade so you will use **COUNTIF**, which has the form:

$$= \text{COUNTIF} \left(\underbrace{\text{criteria range}}_{\text{range that has grades}}, \underbrace{\text{criteria}}_{\text{grade in C7}} \right)$$

where to look what to look for

The **criteria** (letter grades) are located in row **7** so use a cell reference rather than typing the criteria inside quotation marks. Be sure to use absolute referencing where appropriate so you can duplicate the formula in **D8:M8**.¹⁸

Fill the **C8** formula to **M8**.

- h. At the start of my precalculus course, students take a diagnostic pretest to see if they have the necessary high school algebra background. I want to know how many students who scored below a certain cutoff on the diagnostic test also scored above a certain cutoff in their final total points. In other words, I want to know how badly a student can do on the pretest and still pass the course.

To do this, create a formula for **J4** that will display the number of students with diagnostic test scores below the diagnostic test cutoff score in **J2** **AND** above the total points cutoff score in **J3**.

You want to count the number of students who meet **two** criteria at the same time so use the **COUNTIFS** function, which has the form:

$$= \text{COUNTIFS} \left(\underbrace{\text{criteria 1 range}}_{\text{range that has diag test scores}}, \underbrace{\text{criteria 1}}_{\text{under diag test cutoff score in J2}}, \underbrace{\text{criteria 2 range}}_{\text{range that has total pts}}, \underbrace{\text{criteria 2}}_{\text{over total pts cutoff score in J3}} \right)$$

where to look what to look for where to look what to look for

criteria 1 range is the location of the diagnostic test scores, **E12:E121**
criteria 1 is under the value in **J2**

criteria 2 range is the location of the total points, **J12:J121**
criteria 2 is at least the value in **J3**

¹⁸ =COUNTIF(\$K\$12:\$K\$121,C7)

To use > or < with cell references for criteria you must put > or < inside quotation marks and you must put an ampersand & to the left of the cell reference. Here is the formula:

=COUNTIFS(

where to look	what to look for
E12:E121	"<"&J2
range that has diag test scores	under diag test cutoff score in J2

,

where to look	what to look for
J12:J121	">="&J3
range that has total pts	over total pts cutoff score in J3

)

J4	=COUNTIFS(E12:E121,"<"&J2,J12:J121,">="&J3)									
	D	E	F	G	H	I	J			
1										
2	Cutoff on Diagnostic Test -> 65									
3	Cutoff on Total Points Earned -> 65									
4	Num Stu with Diag Below Cutoff and Total At Least Cutoff ->								1	

You can see that out of 110 students only 1 who scored under 65 on the diagnostic test was able to earn at least 65 for a total and pass the course. I have to make a decision: Should I **force** students who score under 65 on the test to drop to a lower course or should I only **suggest** that they do it, knowing that not dropping would almost certainly be a time-wasting and money-wasting mistake.

On the Excel exam, I will not ask you to do something this complicated. I show it here so you can see what Excel is capable of doing and maybe use it on the job.

- i. Use **Conditional Formatting** to identify which students failed the diagnostic test and still passed the course:
 1. Select **B12:B121** because that is where you want the formatting to display.
 2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**, and select **New Rule**.

Mac: From **Style:** select **Classic**.

3. Select **Use a formula to determine which cells to format**.
4. Because two criteria must be met, use the Boolean operator **AND**. This returns true if BOTH criteria are met. In the **Formula** box, type **=and(\$e12<\$j\$2,\$j12>=\$j\$3)**
5. Click **Format, Fill**, and select **purple**. Click **OK** two times.
6. Select **E12:E121** and repeat the process. You can save typing by copying the formula you just entered and pasting it into the new **Formula** box.
7. Select **J12:J121** and repeat the process.
8. Scroll down and you can see that Beth Earlywine just missed the diagnostic cutoff by one point.

	A	B	C	D	E	F	G	H	I	J	K
42		Earlywine, Beth	73	100	64	63	73	62	62	68	D+

Looking at this result, should I change the cutoff or is it working OK?

- j. Remove the split screen (**View, Split**). Set the print area to **A1:M21** (select **A1:M21, Page Layout, Print Area, Set Print Area**).

Set up the **Gradebook** worksheet to print in **Landscape** orientation, all on **one page, centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook, and close it.

HW04-4 VLOOKUP Shipping

Problem: Given the item number or the weight of a product, how can you look up the corresponding shipping cost?

The **VLOOKUP** function works the same way as the **HLOOKUP** function except the **table array** is a vertical table rather than a horizontal table.

- Open the workbook **HW04-4 VLOOKUP Shipping Original**, which is one of the files you downloaded at the start of the term.
- Save the workbook to your **Excel Files** folder using the name **HW04-4 HWID VLOOKUP Shipping Done**
- For cells **D11:D70**, you want Excel to display the **Shipping Cost** for each **Item Number**. The cost depends on the weight of the item. To do the calculation, you can use the **VLOOKUP** function. It has the same form as **HLOOKUP** except **H** is replaced by **V** and **row** is replaced by **column**.

=VLOOKUP(what to look for **lookup value** , where to look **table array** , column to display **column index num** , need exact or approximate match? **range lookup**)

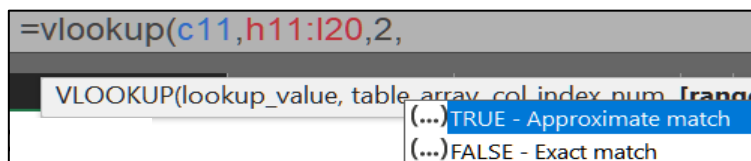
weight range with weights and shipping costs number of column with shipping costs approximate match

- Click **D11** and type **=vlookup(** and a screen tip will appear:

=vlookup(
VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])

- lookup_value** is what you want to find, which is the **weight**.
Type **c11**, (be sure to type the comma).
- table_array** is the vertical range where you want to look. It is the range that contains the **Weights** and **Shipping costs**.
Type **h11:i20**, (be sure to type the comma).
- col_index_num** is the number of the **column** in the table whose value you want displayed.
Column **H**, which is Column **1** in the table, contains the **Weights**.
Column **I**, which is Column **2** in the table, contains the corresponding **Shipping costs**. This is what you want to display.

Type **2**, (be sure to type the comma). When you type the comma after **2** a screen tip provides the definition of **TRUE** and **FALSE** for the **[range_lookup]**.



- **[range_lookup]** tells Excel if you want an exact match or an approximate match.

FALSE says to look for an **exact** match. If there is no exact match the error message **#N/A** will be displayed. This is **not** what you want because the weights in column **C** are in tenths of a pound and the weights in column **H** are in whole pounds.

TRUE says that data in the first column of **table_array** (column **H**) are in **ascending order**, which they are, and you want either an exact match or an approximate match. If an exact match is found, great; if not then Excel settles for the next lowest value. The weight in **C11** is **7.5** so Excel would choose the **Shipping Cost** for **7.0** (the next value below **7.5**). This is what you want.

Type **true**) The formula is **=vlookup(c11,h11:i20,2)**

Click the **Enter** checkbox. The cost is \$30.60.

2. You are going to fill this formula down to row **70** so you must figure out if you need absolute referencing (the **\$**) and, if so, where to put them.

Put the **\$** in the proper places, click the **Enter** checkbox, and then fill the **D11** formula down to **D70**, preserving the formatting. If you get an **#N/A** error then go back and check your **\$**. The range **H11:I20** must be the same for all rows so that needs the **\$**.

D11				=VLOOKUP(C11,\$H\$11:\$I\$20,2,TRUE)		
	A	B	C	D	E	F
9				VLOOKUP	XLOOKUP	Round up
10		Item Number	Weight (lbs)	Cost	Cost	Cost
11		44537	7.5	\$30.60	If you do	If you do

For this example, if a weight is between two whole numbers, then the **Shipping Cost** for the **lower** weight is used. Thus, a weight of **7.9** would use the **Shipping Cost** for **7.0**. However, the shipper might want to charge the higher weight in order to fully cover the cost of shipping. To do that, you need to use **XLOOKUP**, which you will do in the next section.

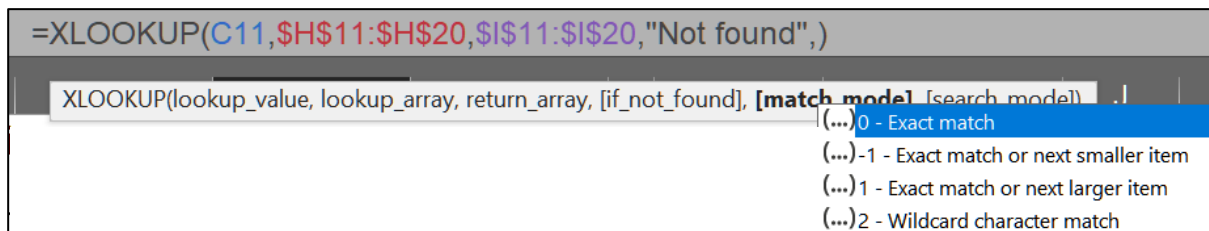
- d. Use **XLOOKUP** instead of **VLOOKUP** to find the **Shipping Costs**. If your version of Excel does not have **XLOOKUP** then leave **E11:F70** blank. Otherwise, construct an **XLOOKUP** function to calculate the shipping cost in **E11**.

1. Construct your formula:

=XLOOKUP(what to look for **lookup value** where to look **lookup array** what to display **return array** text to display if not found **range lookup** exact or approximate match? **0,-1,1,2** order **1,-1** **)**

Weight C11 range with weights \$H\$11:\$H\$20 range with shipping costs \$I\$11:\$I\$20 Not found approx match return next smaller item -1 start at first item 1

2. Enter the formula in **E11**. Remember, as you type Excel will show a screen tip to remind you of the values of the **match_mode** and the **search_mode**. For example,



3. Fill down to **E70**, preserving the format. The costs in columns **D** and **E** should match.
- e. In **F11:F70**, use **XLOOKUP** to find the shipping costs but this time return the next **larger** cost. The only difference between this formula and the previous one is that the **match_mode** should be **1** rather than **-1**.

Enter your formula and then fill down, preserving the format. Notice **F12** shows **Not found**. That is because the weight, 9.9 lbs, is higher than the highest entry in the **Weight/Cost Table** and so Excel cannot return the next larger cost because there is none. The shipper will have to make some adjustments to fix this problem.

- f. In **H4**, insert a function that will display the total weight and total shipping cost of all the items, as well as text that gives meaning to the numbers. It should look like this:

Total weight is 329.5 lbs and total shipping cost is \$1,555.60

To display this, you need a formula that contains four separate parts that are joined together end to end. Computer programmers refer to this type of joining as **CONCATENATION**. Here are the four parts:

Total weight is **329.5** **lbs and total shipping cost is** **\$1,555.60**
Text 1 **Calculation 1** **Text 2** **Calculation 2**

Text 1 will go inside quotation marks: **"Total weight is "**
Calculation 1 finds the sum of all the weights: **SUM(C11:C70)**

Text 2 will go inside quotation marks: **" lbs and total shipping cost is "**
Calculation 2 finds the sum of all the shipping costs: **SUM(D11:D70)**

To join these four pieces into one formula you can use the ampersand, &, between the pieces as follows:

1. Type the following formula into **H4** and click the **Enter** checkbox.

= "Total weight is "&SUM(C11:C70)&" lbs and total shipping cost is "&SUM(D11:D70)

This displays the text between quotation marks **Total weight is**
 then it displays the **SUM** of **C11** through **C70**
 then it displays the text between quotation marks **lbs and total shipping cost is**
 then it displays the **SUM** of **D11** through **D70**

H4														= "Total weight is "&SUM(C11:C70)&" lbs and total shipping cost is "&SUM(D11:D70)									
	A	B	C	D	E	F	G	H	I	J	K	L											
1	Shipping Cost Calculations																						
2																							
3		Calculate Shipping Cost Given Item Number			Calculate Shipping Cost Given Item Weight			Summary															
4								Total weight is 329.5 lbs and total shipping cost is 1555.6															

2. The formula in **H4** displays the cost as **1555.6**. This is the correct value, but it should be in currency style as in **\$1,555.60**. To do that you can use the **TEXT** function. It has the form:

=TEXT(value, format)

- **value** is a number or cell reference.
- **format** is the way you want the **value** to be displayed. This part must go inside quotes. For example, use
"m/d/yyyy" to display **12/31/2021**
"ddd d mmm yyyy" to display **Tue 31 Dec 2021**
"\$#,###.00" to display **\$1,555.60**
- The number you want to display is calculated by **SUM(D11:D70)** so that will be the **value** in the **TEXT** function. The format you want is currency so **"\$#,###.00"** will be the format.
- Modify the formula in **H4** by putting **SUM(D11:D70)** inside the **TEXT** function. Click the **Enter** check to see the result:

H4													= "Total weight is "&SUM(C11:C70)&" lbs and total shipping cost is "&TEXT(SUM(D11:D70),"\$#,###.00")																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							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- g. Enter a function in **H5** that will display the **Item Number** of the item with the highest weight. The **MAX** function can be used to find the highest weight in **C11:C70**. To find the **Item Number** you can use the **VLOOKUP** function. Unfortunately, **Item Number** is to the left of **Weight** in the table so **VLOOKUP** cannot be used directly. To get around this, create a “scratch area” where **Weight** is to the left of **Item Number**. Do the following:

1. In **K9**, type **Scratch Area** and merge and center it across **K9:M9**.
2. In **K10** type **Weight**, in **L10** type **Item Number**, and in **M10** type **Shipping Cost**
3. In **K11**, type **=c11**, in **L11**, type **=b11** and in **M11** type **=d11**
4. Fill the formulas in **K11:M11** down to **K70:M70**. This creates a new table where the **Weight** is to the left of the **Item Number**.
5. Format **K11:K70** as numbers with one decimal point.
6. Format **M11:M70** as currency with the dollar sign and two decimal places.
7. Center align columns **K**, **L**, and **M**.
8. To make the table easier to read, format it as shown below. To put in borders, select the table, right-click, select **Format cells**, click the **Borders** tab, and apply the borders. There is a heavy border around the outside, a light border on the inside, the table has a gray fill, and the titles are bold.

	J	K	L	M	N
8					
9		Scratch Area			
10		Weight	Item Number	Shipping Cost	
11		7.5	44537	\$30.60	
12		9.9	80680	\$33.00	
13		8.7	43913	\$31.80	

9. In **H5**, enter a **VLOOKUP** function that will display the **Item Number** of the item with the highest **Weight**. Here is the structure:

=VLOOKUP(what to look for **lookup value** , where to look **table array** , column to display **column index num** , need exact or approximate match? **range lookup** **)**
highest weight range with weights and item numbers number of column with item numbers exact match

- **lookup value** is the highest **Weight** in **K11:K70**. Use **MAX(k11:k70)**
- **table array** is the range that contains **Weights** and **Item Numbers** in the scratch area.
- **column index num** is the number of the column *in the table* whose value you want displayed.

Column **K**, which is column **1** in the table, contains **Weights**

Column **L**, which is column **2** in the table, contains **Item Numbers**

2. In **C7**, enter a formula that will display the **Shipping Cost** for the item whose **Item Number** is in **B7**.

=VLOOKUP(**lookup value** , **table array** , **column index num** , **range lookup**)

what to look for **where to look** **column to display** **need exact or approximate match?**

item number **range with item nums and shipping costs** **number of column with shipping costs** **exact match**

- **lookup value** is the **Item Number** in **B7**.
- **table array** is the range that contains **Item Numbers and Shipping Costs**. This is **B11:D70**.
- **column index num** is the number of the column in the table whose value you want displayed.

Column **B**, which is Column **1** in the table, contains **Item Numbers**

Column **C**, which is Column **2** in the table, contains **Weights**

Column **D**, which is Column **3** in the table, contains **Shipping Costs**

- **range lookup** is **TRUE** or **FALSE**. The **Item Numbers** are not in ascending sort order and you want an exact match.

TRUE for approximate match

FALSE for exact match

Since this formula will not be filled to other cells, you do not need the absolute referencing \$.

C7 : X ✓ fx =VLOOKUP(B7,B11:D70,3,FALSE)					
	A	B	C	D	E
1	Shipping Cost Calculations				
2					
3		Calculate Shipping Cost		Calculate Shipping Cost	
4		Given Item Number		Given Item Weight	
5		Choose	Shipping	Enter	Shipping
6		Item Number	Cost	Weight	Cost
7		43913	\$31.80		

Here is the **XLOOKUP** formula:

=XLOOKUP(**lookup value** , **lookup array** , **return array** , **range lookup** , **exact or approximate match?** , **order**)

what to look for **where to look** **what to display** **text to display if not found** **exact or approximate match?** **order**

Item Num B7 **range with item nums B11:B70** **range with ship costs D11:D70** **Not found** **exact match return next smaller item -1** **start at first item 1**

- j. Enter a function in **E7** that will display the **Shipping Cost** for an item whose **Weight** is entered in **D7**. Type **1.1** in **D7** as a test value. Give it a try by following the same process you did for the formula in **C7**.

=VLOOKUP(what to look for **lookup value** , where to look **table array** , column to display **column index num** , need exact or approximate match? **range lookup**)

weight D7 range with weights and shipping costs H11:I70 number of column with shipping costs 2 approximate match True

E7	=VLOOKUP(D7,H11:I70,2,TRUE)				
	A	B	C	D	E
1		Shipping Cost Calculations			
2					
3		Calculate Shipping Cost		Calculate Shipping Cost	
4		Given Item Number		Given Item Weight	
5		Choose	Shipping	Enter	Shipping
6		Item Number	Cost	Weight	Cost
7		43913	\$31.80	1.1	\$15.75

The weight in **D7** is 1.1, which is between 1.0 (**Shipping Cost** is \$15.75) and 2.0 (**Shipping Cost** is \$18.50). Excel chooses the lower weight so the cost is \$15.75.

Here is the **XLOOKUP** formula:

=XLOOKUP(what to look for **lookup value** , where to look **lookup array** , what to display **return array** , text to display if not found **range lookup** , exact or approximate match? **0,-1,1,2** , order **1,-1**)

Item Num D7 range with item nums H11:H70 range with ship costs I11:I70 Not found exact match return next smaller item -1 start at first item 1

- k. Misspelled words can be embarrassing. ¹⁹ For example, a news headline read “Floods from the Mississippi may be prevented by putting big dames in the river.” Here is a road sign from South Bend Indiana:



¹⁹ Adapted from <http://www.dummies.com/how-to/content/limit-data-entry-with-data-validation-in-excel-201.html>

When you misspell a word in an email or letter the reader often can figure out what you are trying to say from the context. Try reading this:

I cdnuolt blveiee taht I cluod aulacilty uesdnatnrd waht I was rdanieg. The phaonmneal pweor of the hmuan mnid. Aoccdrnig to rscheearch it deosn't mttair in waht oredr the ltteers in a wrod are, the olny iprmoatnt tihng is taht the frist and lsat ltteer be in the rghit pclae. The rset can be a taotl mses and you can sitll raed it.

Just about every word is misspelled, but your amazing brain is able to fill in what it needs to make sense of this from the context and your facility with English.

However, if you enter a wrong number in Excel the user probably will not be able to tell if it is wrong by looking at the context, and any analysis which uses that number will be wrong. While you cannot completely prevent data entry errors, Excel allows you to check some of the characteristics of data you enter through its **Data Validation** feature. To see how this works, do the following:

1. Click **B7**, and then, on the **Data** tab, in the **Data Tools** group, click the **Data Validation** arrow and select **Data Validation**. There are a lot of choices that you can explore on your own.
2. Click the **Settings** tab and select **List** from the **Allow** menu.
3. For this project, **Item Number** must be one of the numbers in the range **B11:B70**. So, in the **Source** box, type the range where the **Item Numbers** are listed. That is type **=B\$11:\$b\$70** (or select that range with your mouse).
4. Click the **Input Message** tab and in the **Input message** box type **Select or type item number**.

The screenshot shows the 'Data Validation' dialog box with the 'Input Message' tab selected. The 'Settings' tab is also visible. The 'Show input message when cell is selected' checkbox is checked. Below it, the text 'When cell is selected, show this input message:' is followed by a 'Title:' label and an empty text box. Below that is an 'Input message:' label and a text box containing the text 'Select or type item number.'

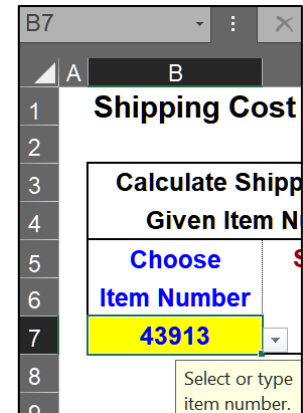
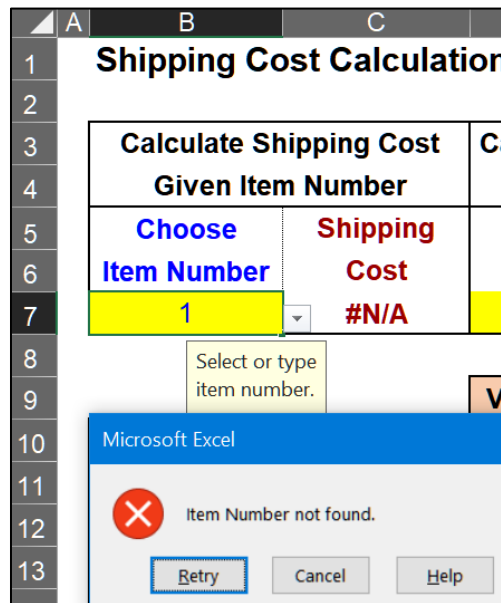
The screenshot shows the 'Data Validation' dialog box with the 'Settings' tab selected. The 'Validation criteria' section shows 'Allow:' with a dropdown menu set to 'List'. Below that, the 'Data:' section shows a dropdown menu set to 'between'. The 'Source:' section shows a text box containing the formula '=B\$11:\$b\$70'.

Now, when you click **B7** the message will appear to remind you of what type of data goes in **B7**.

5. Click the **Error Alert** tab and, in the **Error message** box, type **Item Number not found**. Now, if you enter an **Item Number** that is not on the list of numbers in **B11:B70** you will get an error message.

The default under **Style** is **Stop**. That means Excel will not allow a number outside the range. If you change the **Style** to **Warning** Excel will display the error message as a warning, but it will allow the value to be entered if you wish.

6. Leave the **Style** as **Stop** and click **OK**. You will see the **Input message** for cell **B7**.
7. To see how data validation works, click **B7**, type **1**, and tap **Enter**.



Here, you can click **Retry** or **Cancel**. Click **Cancel**.

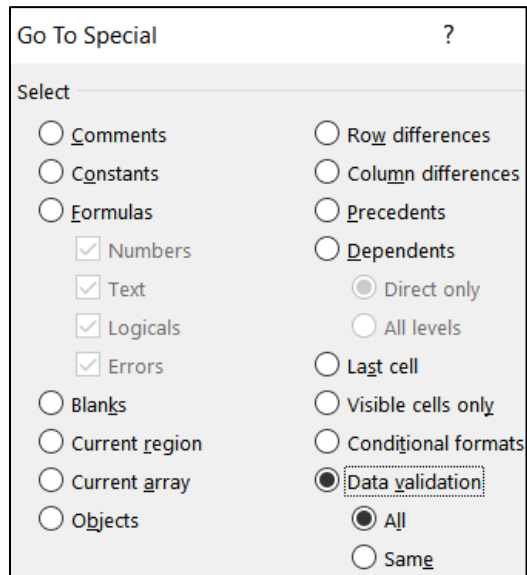
8. When **B7** is active, there will be an upside triangle just to the right of the cell. This is a drop-down menu that can be used to select an **Item Number** rather than type it.

To see how the drop-down menu works, click the arrow, scroll up a bit, and select **80680**. The **Shipping Cost** in **C7** will show **\$33.00**.

- I. Here is another type of validation rule. Set up things so that the weights entered must be between 0 and 10 pounds. Give it a try. If you need help, do the following:
 1. Click **D7**, and then, on the **Data** tab, in the **Data Tools** group, click the **Data Validation** arrow and select **Data Validation**.
 2. Click the **Settings** tab. In **Allow** box and select **Decimal**.
 3. In the **Data** box, select **between**.
 4. In the **Minimum** box type **0**.
 5. In the **Maximum** box type **10**.

6. Click the **Input Message** tab. In the **Input message** box type **Enter decimal between 0 and 10**.
7. Click the **Error Alert** tab and, in the **Error message** box, type **Weight must be a decimal between 0 and 10**.
8. In the **Style** box confirm that **Stop** is selected.
9. Click **OK**.
10. To see how data validation works, click **D7**, type **11**, and tap **Enter**. You should see the error message.
11. Click **Cancel**.

If you want to find cells to which **Data Validation** has been applied, tap the **F5** key to open the **Go To** dialog box, click the **Special** button, click the **Data Validation** button, and click **OK**. Every cell that has **Data Validation** will be highlighted (**B7** and **D7**).



If you want to get rid of **Data Validation** assigned to a particular cell range, first select the range. Then, on the **Data** tab, in the **Data Tools** group, click the **Data Validation** arrow and select **Data Validation**. Click the **Clear All** button and then click **OK**. **Do NOT do this now.**

- m. Set the **Print Area** to **B1:M35** (**Page Layout**, **Page Setup**, **Print Area**, **Set Print Area**). Set up the **Shipping Costs** worksheet to print in **Landscape** orientation, all on **one page**, **centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook, and close it.

HW04-5 PivotTables

Problem: How can raw data be organized into meaningful reports that can reveal patterns or trends?

A **PivotTable** is a table of statistics that summarizes the data of an Excel worksheet or Access database. This summary might include sums, averages, or other statistics, which the PivotTable groups together in meaningful ways. The PivotTable allows you to arrange and rearrange ("pivot") the data in order to draw attention to useful information.

For example, you might have data on family expenses like this:

	A	B	C	D
1	Date	Buyer	Type	Amount
2	1-Jan	Mom	Fuel	\$50
3	2-Jan	Mom	Groceries	\$120
4	3-Jan	Dad	Cafes	\$10
5	4-Jan	Dad	Fuel	\$40
6	4-Jan	Kelly	Groceries	\$129
7	5-Jan	Mom	Cafes	\$12

Here, the variables or **fields** are in **columns** and the individual **data** are in **rows**.

With a few mouse clicks, the data can be summarized by creating a PivotTable like this, which summarizes the amount spent by each family member:

	A	B
3	Row Labels	Sum of Amount
4	Dad	\$15,444
5	Kelly	\$28,160
6	Mom	\$26,373
7	Grand Total	\$69,977

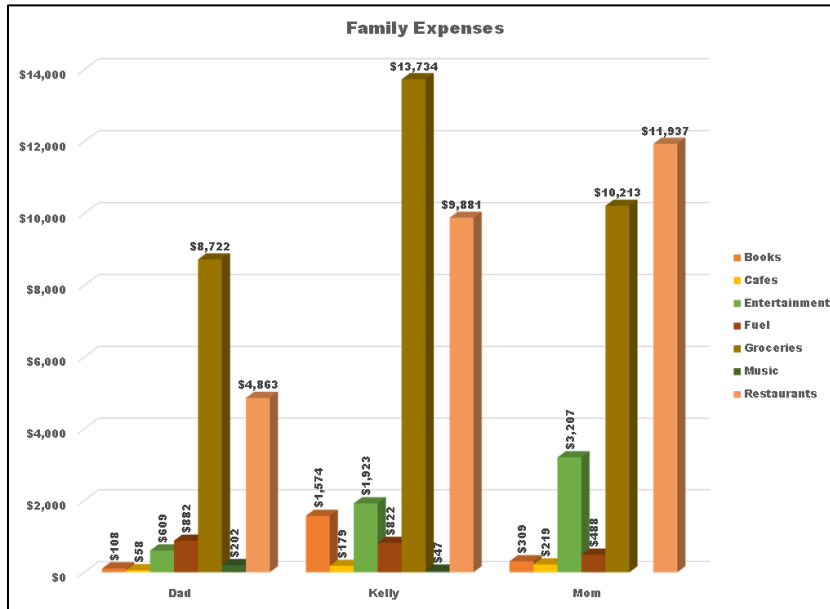
A couple more mouse clicks and the data can be summarized in a more detailed report that shows how much each person spent on each type of item:

	A	B	C	D	E
3	Sum of Amount	Column Labels			
4	Row Labels	Dad	Kelly	Mom	Grand Total
5	Books	\$108	\$1,574	\$309	\$1,991
6	Cafes	\$58	\$179	\$219	\$456
7	Entertainment	\$609	\$1,923	\$3,207	\$5,739
8	Fuel	\$882	\$822	\$488	\$2,192
9	Groceries	\$8,722	\$13,734	\$10,213	\$32,669
10	Music	\$202	\$47		\$249
11	Restaurants	\$4,863	\$9,881	\$11,937	\$26,681
12	Grand Total	\$15,444	\$28,160	\$26,373	\$69,977

Two more mouse clicks and the data can be “pivoted” to show the details by person:

	A	B	C	D	E	F	G	H	I
3	Sum of Amount	Column Labels							
4	Row Labels		Books	Cafes	Entertainment	Fuel	Groceries	Music	Restaurants
5	Dad		\$108	\$58		\$609	\$882	\$8,722	\$202
6	Kelly		\$1,574	\$179		\$1,923	\$822	\$13,734	\$47
7	Mom		\$309	\$219		\$3,207	\$488	\$10,213	
8	Grand Total		\$1,991	\$456		\$5,739	\$2,192	\$32,669	\$249

One more mouse click, and a PivotChart of the data may be created:



To see how to create PivotTables and PivotCharts, do the following:

- Open the workbook **HW04-5 PivotTables Original**, which is one of the files you downloaded at the start of the term.
- Save the workbook to your **Excel Files** folder using the name **HW04-5 HWID PivotTables Done**
- The worksheet shows the call data to Fire and Police Departments for three months.²⁰

	A	B	C	D	E
1	Fire/Police	Month	Loc	Class	N
2	Fire	Jan	Station 1	Medical	924
3	Fire	Jan	Station 1	Fire	299
4					
5	Fire	Jan	Station 2	Medical	987

²⁰ Based on Project 7 in Gaskin & Vargas. GO! with Microsoft Excel 2016 Comprehensive. New York: Prentice Hall, 2017.

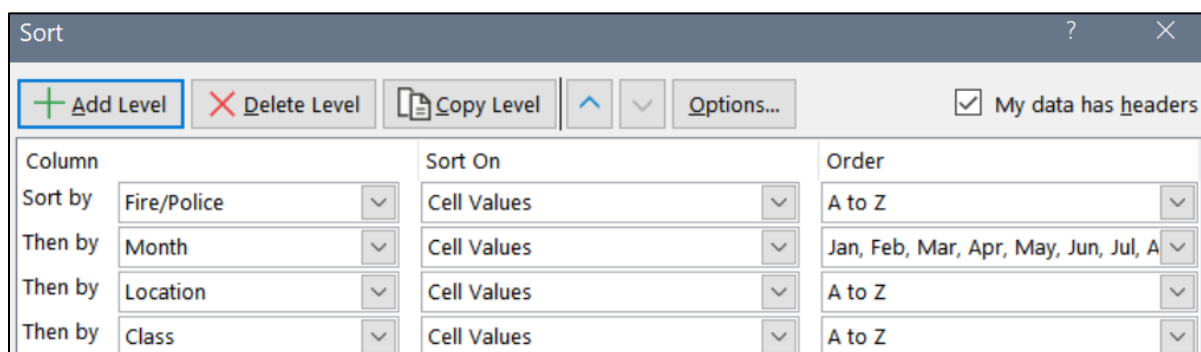
For example, row **2** shows that **924 Medical** calls were received from **Fire Station 1** during the month of **January**.

Your task is to organize the data in several different ways so that staffing and resource decisions can be made. You will do this by “pivoting” or arranging the information in different ways in order to see it from different perspectives. To see how this works, do the following:

1. First, you need to make sure the data have clear column headings. In row **1**, change **Loc** to **Location** and **N** to **Num**.
2. The structure of the data must be consistent. So, for example, you must remove blank columns (there are none for this worksheet) and blank rows.
 - **Option 1 By Eye:** One way to remove blank rows is to find them by eye and, when you see a blank row such as row **4**, select the entire row, right-click, and select **Delete**. That will be time consuming for a large data set so you will not do that. Instead, use **Option 2** below.
 - **Option 2 By Sorting:** A second way to remove blank rows is to sort the data. To see how this works, do the following:
3. Select all the rows and, on the **Home** tab, in the **Editing** group, click **Sort & Filter** and **Custom Sort**. Be sure the **My data has headers** box is checked. Then, add four sort levels, one each for **Fire/Police**, **Month**, **Location**, and **Class**.

Mac: **Add Level**, **Delete Level**, and **Copy Level** are in the lower left corner of the **Sort** dialog box. They look like this: 

Except for **Month**, set the sort **Order** to **A to Z**. For **Month**, you want the data chronologically rather than alphabetically, so click its **Order** arrow, select **Custom List**, and select **Jan, Feb, Mar, Apr, ...**



Column	Sort On	Order
Sort by Fire/Police	Cell Values	A to Z
Then by Month	Cell Values	Jan, Feb, Mar, Apr, May, Jun, Jul, A
Then by Location	Cell Values	A to Z
Then by Class	Cell Values	A to Z

Click **OK**.

4. Convert the data into a **Table** by selecting **A1:E79** and, on the **Insert** tab, in the **Tables** group, clicking **Table** and then **OK**.

	A	B	C	D	E
1	Fire/Police	Month	Location	Class	Num
2	Fire	Jan	Station 1	Fire	299
3	Fire	Jan	Station 1	Medical	924

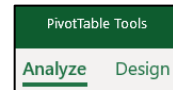
5. On the **TableTools Design** tab, in the **Properties** group, in the **Table Name** box, type **RawData**, and then click **OK**.

Table Name:
RawData

The reason you convert the data into a table is if you were to add data to the blank rows under the table, the data would be added to the PivotTable when it is refreshed (updated).

6. Click anywhere in the data and, on the **Insert** tab, in the **Tables** group, click **PivotTable**. A dialog box will appear that shows the **RawData** table will be used as the basis for the PivotTable. Under **Choose where you want the PivotTable report to be placed**, be sure **New worksheet** is checked.
7. Click **OK**. Excel adds a new **Sheet1**.
8. Rename the worksheet **Pivot**.

Two new **PivotTable Contextual** tabs appear on the Ribbon.

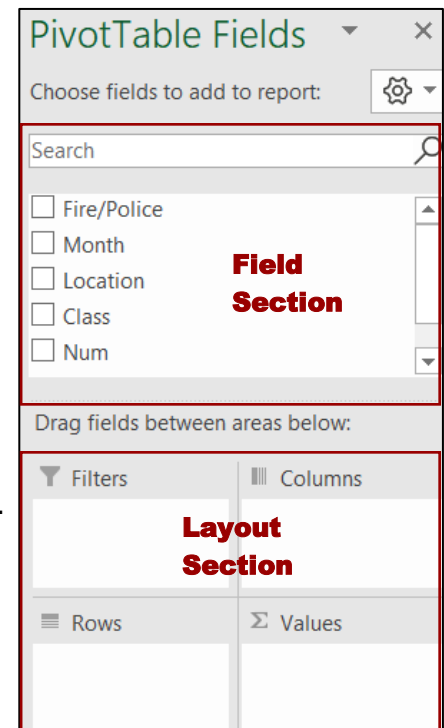


Mac: If you have a small screen, you may have to click the double chevron to the right of the **PivotTable Analyze** tab to see the **Design** tab, like you did working with charts on page **SG42**.



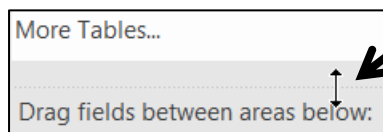
Also, if you are working on a small screen, you may want to show or hide the **Ribbon** by tapping **Ctrl + F1** (**Option + Command + R** on the **Mac**).

On the right, the top part of the **PivotTable Fields** pane lists the **Field** (column) headings from the **RawData** table. This is called the **Field** section.



Just below this is the **Layout** section. This is where you will place the fields that will form the PivotTable.

You may change the relative sizes of the **Field** and **Layout** sections by pointing to the border between them. A double headed arrow will appear. Left-click and drag to change the sizes.



If you prefer, you can make the **Field** and **Layout** sections side-by-side by clicking the **Tools** icon and clicking **Fields Section** and **Areas Section Side-by-Side**.



d. Set up the PivotTable by doing the following:

1. Since you are interested in the number of calls, from the **Field** section drag the **Num** field to the **Values** box in the **Layout** section.

Σ Values
Sum of Num

It says **Sum of Num** because, by default, the sums of the numbers are displayed. Later, you will see how other statistics, such as average, may be displayed. Notice that a check appears next to **Num** in the **Field** area.

On the left, a small PivotTable appears. Right now, it only contains the total number of calls for all the **Stations** and **Precincts**.

	A
1	
2	
3	Sum of Num
4	101250

2. Drag the **Fire/Police** field down to the **Rows** box. The PivotTable is modified to show the number of calls to **Fire** and the number of calls to **Police**, as well as the total number of calls.

	A	B
1		
2		
3	Row Labels	Sum of Num
4	Fire	10212
5	Police	91038
6	Grand Total	101250

3. Drag the **Location** field down so it is under the **Fire/Police** field in the **Rows** box.

Rows	Σ Values
Fire/Police	Sum of Num
Location	

The PivotTable is modified to include the **Locations** of the calls.

	A	B	C	D	E	F
1						
2						
3	Row Labels	Sum of Num				
4	Fire	10212				
5	Station 1	3524				
6	Station 2	3515				
7	Station 3	1262				
8	Station 4	1911				
9	Police	91038				
10	Precinct 1	11909				
11	Precinct 2	16222				
12	Precinct 3	15643				
13	Precinct 4	16077				
14	Precinct 5	15250				
15	Precinct 6	15937				
16	Grand Total	101250				
17						
18						
19						

PivotTable Fields

Choose fields to add to report:

Search

☒ **Fire/Police**

☐ Month

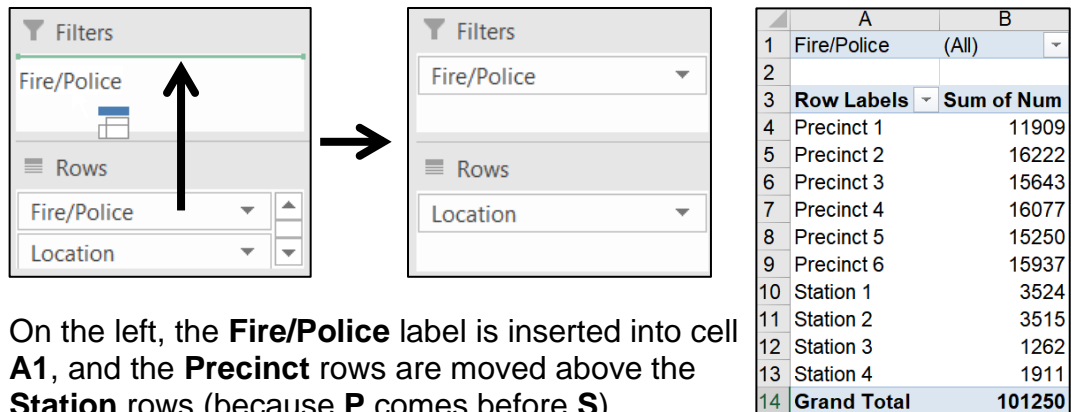
Drag fields between areas below:

Filters	Columns

Rows	Σ Values
Fire/Police	Sum of Num
Location	


☐ Defer Layout Update

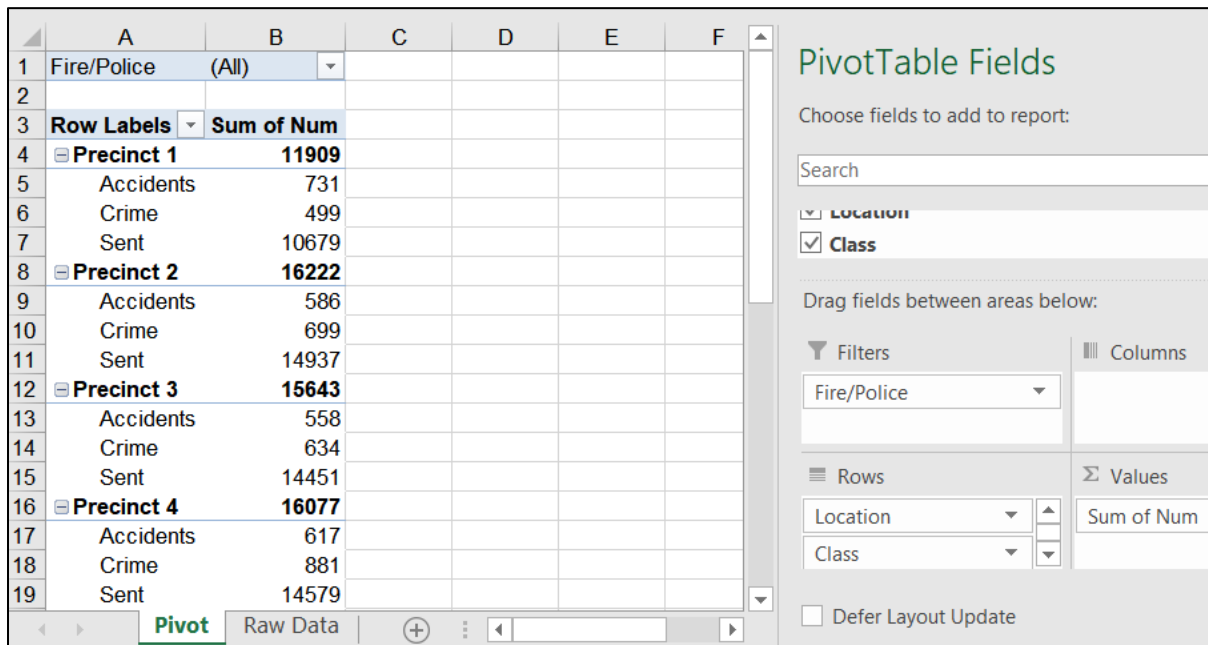
4. In the **Layout** section, in the **Rows** area, point to **Fire/Police**, hold down the left mouse button, and then drag the field name upward into the **Filters** box.










	A	B
1	Fire/Police	(All)
2		
3	Row Labels	Sum of Num
4	Precinct 1	11909
5	Precinct 2	16222
6	Precinct 3	15643
7	Precinct 4	16077
8	Precinct 5	15250
9	Precinct 6	15937
10	Station 1	3524
11	Station 2	3515
12	Station 3	1262
13	Station 4	1911
14	Grand Total	101250



On the left, the **Fire/Police** label is inserted into cell **A1**, and the **Precinct** rows are moved above the **Station** rows (because **P** comes before **S**).



5. On the right, drag **Class** down so it is under **Location**.
On the left, a little  appears next to each **Precinct** and **Station**.



	A	B	C	D	E	F
1	Fire/Police	(All)				
2						
3	Row Labels	Sum of Num				
4	 Precinct 1	11909				
5	Accidents	731				
6	Crime	499				
7	Sent	10679				
8	 Precinct 2	16222				
9	Accidents	586				
10	Crime	699				
11	Sent	14937				
12	 Precinct 3	15643				
13	Accidents	558				
14	Crime	634				
15	Sent	14451				
16	 Precinct 4	16077				
17	Accidents	617				
18	Crime	881				
19	Sent	14579				

In cell **A4**, click the  next to **Precinct 1. Class** for that **Location** disappears, and the  changes to a , indicating that there is more information under that label.

	A	B
1	Fire/Police	(All)
2		
3	Row Labels	Sum of Num
4	 Precinct 1	11909
5	 Precinct 2	16222
6	Accidents	586
7	Crime	699

6. Point to the  or  of any location, right-click, point to **Expand/Collapse**, and select **Expand Entire Field**. Now, the sub-data (**Class**) appear for all **Precincts** and **Stations** again.
7. You can change the order of the fields by dragging. This is called “Pivoting.” For example, under **Rows**, drag **Class** up so it is above **Location**.



Now, the PivotTable shows **Location** subordinate to **Class**.

	A	B	C	D	E	F
1	Fire/Police	(All)				
2						
3	Row Labels	Sum of Num				
4	Accidents	3917				
5	Precinct 1	731				
6	Precinct 2	586				
7	Precinct 3	558				
8	Precinct 4	617				
9	Precinct 5	600				
10	Precinct 6	825				
11	Crime	4311				
12	Precinct 1	499				
13	Precinct 2	699				
14	Precinct 3	634				
15	Precinct 4	881				
16	Precinct 5	763				
17	Precinct 6	835				
18	Fire	2409				
19	Station 1	989				

Choose fields to add to report:	
Search	
<input checked="" type="checkbox"/> Location	
<input checked="" type="checkbox"/> Class	
Drag fields between areas below:	
Filters	Columns
Fire/Police	
Rows	Σ Values
Class	Sum of Num
Location	
<input type="checkbox"/> Defer Layout Update	

8. Drag **Class** back under **Location** to return to the previous arrangement.
9. On the right, from the **Field** section, drag the **Month** field down to the **Columns** area. This allows you to see the month by month data.

Now you can see, for example, that **Precinct 2 Crime** (row 11) decreased from January (310) to February (175), but **Precinct 3 Crime** (row 15) increased from 196 to 224 during that same time period.

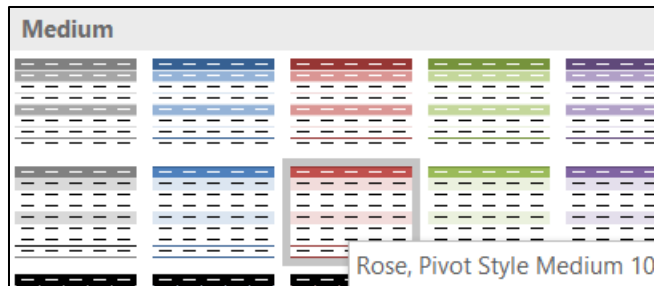
	A	B	C	D	E	F
1	Fire/Police	(All)				
2						
3	Sum of Num	Column Labels				
4	Row Labels	Jan	Feb	Mar	Grand Total	
5	Precinct 1	4275	3529	4105	11909	
6	Accidents	327	208	196	731	
7	Crime	285	93	121	499	
8	Sent	3663	3228	3788	10679	
9	Precinct 2	5637	4563	6022	16222	
10	Accidents	252	163	171	586	
11	Crime	310	175	214	699	
12	Sent	5075	4225	5637	14937	
13	Precinct 3	5540	4504	5599	15643	
14	Accidents	221	215	122	558	
15	Crime	196	224	214	634	
16	Sent	5123	4065	5263	14451	
17	Precinct 4	5340	4959	5778	16077	
18	Accidents	235	197	185	617	
19	Crime	308	327	246	881	

Choose fields to add to report:	
Search	
<input checked="" type="checkbox"/> Month	
Drag fields between areas below:	
Filters	Columns
Fire/Police	Month
Rows	Σ Values
Location	Sum of Num
Class	
<input type="checkbox"/> Defer Layout Update	

It would be a good idea to investigate why this is so.

10. To make the PivotTable easier to read, select columns **B, C, and D**, right align them, and make the column width **9**. Apply **Wrap Text** to cell **B3**.

On the **Design** tab, in the **PivotTable Styles** group, click More  and select **Rose, Pivot Style Medium 10**.



Now, the PivotTable looks like this:

Mac: The style may look a bit different on a **Mac**.

	A	B	C	D	E
1	Fire/Police	(/)			
2					
3	Sum of Num	Column Labels			
4	Row Labels	Jan	Feb	Mar	Grand Total
5	Precinct 1	4275	3529	4105	11909
6	Accidents	327	208	196	731
7	Crime	285	93	121	499
8	Sent	3663	3228	3788	10679
9	Precinct 2	5637	4563	6022	16222
10	Accidents	252	163	171	586
11	Crime	310	175	214	699
12	Sent	5075	4225	5637	14937
13	Precinct 3	5540	4504	5599	15643
14	Accidents	221	215	122	558
15	Crime	196	224	214	634
16	Sent	5123	4065	5263	14451
17	Precinct 4	5340	4959	5778	16077
18	Accidents	235	197	185	617

PivotTable Fields

Choose fields to add to report:

Search

☒ Fire/Police

☒ Month

Drag fields between areas below:

Filters

Fire/Police

Columns

Month

Rows

Location

Class

Values

Sum of Num

☐ Defer Layout Update

- e. When you make a PivotTable, Excel takes a “snapshot” of the raw data by making a copy. The result is that if you modify the data on the **Raw Data** tab, the PivotTable is not automatically updated – you must do that manually. To see how this works, do the following:

1. Click the **Raw Data** worksheet. Click cell **E30 (Precinct 2 Crime for January)**, change it from **310** to **5000**, and tap **Enter**.

Click the **Pivot** worksheet and notice that cell **B11** still shows **310**.

- To update the PivotTable, right-click any cell in the PivotTable and select **Refresh**. The value now is **5000** and all the values that depend on that cell are updated.

	A	B	C	D	E
1	Fire/Police	(A)			
2					
3	Sum of Num	Column Labels			
4	Row Labels	Jan	Feb	Mar	Grand Total
5	Precinct 1	4275	3529	4105	11909
6	Accidents	327	208	196	731
7	Crime	285	93	121	499
8	Sent	3663	3228	3788	10679
9	Precinct 2	10327	4563	6022	20912
10	Accidents	252	163	171	586
11	Crime	5000	175	214	5389
12	Sent	5075	4225	5637	14937

- Now, change the data back by clicking the **Raw Data** worksheet, clicking cell **E30** and changing the **Precinct 2 Crimes** value for **January** from **5000** back to **310**.

Click the **Pivot** worksheet, right-click any cell in the table and select **Refresh**. **B11** is **310** again and all the cells that depend on **B11** are updated.

If you want to add new raw data, you would enter it in the row just below the last row on the **Raw Data** worksheet. Then, you would refresh the PivotTable as you just did.

- You can focus on either **Fire** or **Police** data by using the filter arrow in **B1**. Click the filter arrow and then click **Fire**.

Mac: Click the check next to **Police** to deselect it.

Click **OK**

Mac: There is no **OK** button. Click the **red dot** to close the dialog box.

The **Police** data disappear leaving only the **Fire** data displayed.

	A	B	C	D	E	F	G
1	Fire/Police	F					
2							
3	Sum of Num	Column					
4	Row Labels	Jan	Feb	Mar	Grand Total		
5	Station 1	1223	1248	1053	3524		
6	Fire	299	369	321	989		
7	Medical	924	879	732	2535		
8	Station 2	1313	1035	1167	3515		
9	Fire	326	265	204	795		
10	Medical	987	770	963	2720		
11	Station 3	439	424	399	1262		
12	Fire	68	92	78	238		
13	Medical	371	332	321	1024		
14	Station 4	658	601	652	1911		
15	Fire	117	123	147	387		
16	Medical	541	478	505	1524		
17	Grand Total	3633	3308	3271	10212		
18							

PivotTable Fields

Choose fields to add to report:

Search

☒ Fire/Police
☒ Month

Drag fields between areas below:

Filters

Fire/Police

Columns

Month

Rows

Location
Class

Values

Sum of Num

☐ Defer Layout Update


5. Repeat the process, but this time select **All** so all the data appear again.
- f. If you want to send a PivotTable to someone else so they can do an analysis, make a copy of the worksheet in a new workbook. To see how this works, do the following:
 1. Right-click the **Pivot** worksheet tab and select **Move or Copy** to open its dialog box.

Mac: Edit menu, **Sheet, Move or Copy Sheet**.

2. Click the **Create a copy** box.
3. In the box under **To book**, click the arrow and select **(new book)**.
4. Click **OK**. A new workbook, titled **Book1**, is created.
5. Save the new workbook in the **Excel Files** folder using the name **HW04-5b HWID Fire & Police PivotTable Done**.
6. Close the new workbook **HW04-5b HWID Fire PivotTable**.

Now, you have a copy of the PivotTable. You can manipulate the data as you see fit. However, since this is a “snapshot” of the data, the data **cannot** be updated and refreshed.

- g. Specific data may also be displayed using **Slicers** (filters).
 1. With the workbook **HW04-5 HWID PivotTables Done** open, make a copy of the **Pivot** worksheet and rename it **Slicer-1**.
 2. On the **PivotTable Analyze** tab, in the **Filter** group, click **Insert Slicer**. This displays the field names in a dialog box.

3. Click the **Fire/Police** check box and then click **OK**.
A new tab called **Slicer** appears.
4. On the **Slicer** tab, in the **Slicer Styles** group, select **Light Green**.
5. In the **Slicer** box, click **Fire** to display only the **Fire** data. The filter button now shows a red **X**. To remove the filter, click that button (DO NOT do that now). 
6. Click any cell in the PivotTable and insert a second slicer. Click **Class** in this new dialog box, and then click **OK**.
7. Apply the **Lavender** style.
8. Arrange the two slicers on the right so you can clearly see both.
9. On the **Class** slicer, click the **Medical** filtering button.

	A	B	C	D	E	F	G	H	I	J	K
1	Fire/Police	F									
2											
3	Sum of Num	Column Labels				Fire/Police			Class		
4	Row Labels	Jan	Feb	Mar	Grand Total	Fire			Fire		
5	Station 1	924	879	732	2535	Police			Medical		
6	Medical	924	879	732	2535				Accidents		
7	Station 2	987	770	963	2720				Crime		
8	Medical	987	770	963	2720				Sent		
9	Station 3	371	332	321	1024						
10	Medical	371	332	321	1024						
11	Station 4	541	478	505	1524						
12	Medical	541	478	505	1524						
13	Grand Total	2823	2459	2521	7803						

The **Fire/Police** slicer filters out the **Police** data, and the **Class** slicer filters out **Fire** calls. The three police **Class** buttons are grayed because the **Police** data have been already filtered out by the **Fire/Police** slicer.

- h. Set up the **PivotTables Slicer-1** worksheet to print in **Portrait** orientation, all on **one page, centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Click the **Sheet** tab, click **Gridlines** and also **Row and column headings**. Compare the preview with the key. Make needed corrections, save the workbook but do NOT close it.
- i. In this Activity, you will “pivot” the order of the fields to view the data from a different perspective.
 1. Click the **Pivot** worksheet. In the **Layout** section of the **PivotTable Fields** pane, from the **Columns** area, drag **Month** upward into the white **Field** section. This removes the **Month** data from the PivotTable.

2. In the **Layout** section, from the **Rows** area, drag the **Class** field into the **Columns** area.

	A	B	C	D	E	F	G
1	Fire/Police	(A)					
2							
3	Sum of Num	Column Labels					
4	Row Labels	Accidents	Crime	Fire	Medical	Sent	Grand Total
5	Precinct 1	731	499			10679	11909
6	Precinct 2	586	699			14937	16222
7	Precinct 3	558	634			14451	15643
8	Precinct 4	617	881			14579	16077
9	Precinct 5	600	763			13887	15250
10	Precinct 6	825	835			14277	15937
11	Station 1			989	2535		3524
12	Station 2			795	2720		3515
13	Station 3			238	1024		1262
14	Station 4			387	1524		1911
15	Grand Total	3917	4311	2409	7803	82810	101250

PivotTable Fields

Choose fields to add to report:

Search

Drag fields between areas below:

Filters: Fire/Police

Columns: Class

Rows: Location

Values: Sum of Num

Class now is in columns rather than rows. The column names are listed in alphabetical order, which is not very useful since **Fire** data are intermixed with **Police** data.

3. Right-click **Medical**, in cell **E4**, point to **Move**, and then click **Move "Medical" to Beginning**. This moves those data to the beginning of the columns in column **B**.
4. Repeat the process for **Fire**. The **Fire** data now are adjacent to each other, as are the **Police** data. This makes things easier to read.

	A	B	C	D	E	F	G
1	Fire/Police	(A)					
2							
3	Sum of Num	Column Labels					
4	Row Labels	Fire	Medical	Accidents	Crime	Sent	Grand Total
5	Precinct 1				731	499	10679
6	Precinct 2				586	699	14937
7	Precinct 3				558	634	14451
8	Precinct 4				617	881	14579
9	Precinct 5				600	763	13887
10	Precinct 6				825	835	14277
11	Station 1	989	2535				3524
12	Station 2	795	2720				3515
13	Station 3	238	1024				1262
14	Station 4	387	1524				1911
15	Grand Total	2409	7803	3917	4311	82810	101250

PivotTable Fields

Choose fields to add to report:

Search

Drag fields between areas below:

Filters: Fire/Police

Columns: Class

Rows: Location

Values: Sum of Num

- j. You can display select PivotTable report details in a new worksheet. For example, do the following to make a report that shows **Crimes** reported each month by **Precinct**:

1. On the Pivot worksheet, double-click cell **E15 (Grand Total for Crimes)**. This creates a new worksheet with the details of the **Crimes** for each **Precinct** and **Month**.

	A	B	C	D	E
1	Fire/Police	Month	Location	Class	Num
2	Police	Mar	Precinct 1	Crime	121
3	Police	Feb	Precinct 1	Crime	93
4	Police	Jan	Precinct 1	Crime	285
5	Police	Mar	Precinct 2	Crime	214
6	Police	Feb	Precinct 2	Crime	175
7	Police	Jan	Precinct 2	Crime	310
8	Police	Mar	Precinct 3	Crime	214

2. Rename the worksheet **Crime**. At this point, you should have four worksheets in this workbook.

Slicer-1	Crime	Pivot	Raw Data
----------	-------	-------	----------

- k. Apply conditional formats to this **Crime** worksheet so that each month's row will have a different color. Do the following:

1. You are going to do some complex sorting and set conditional formats so convert this table into a regular **Range**. To do that, on the **Table Design** tab, in the **Tools** group, click **Convert to Range** and then click **Yes**. Notice the filter arrows disappear.
2. With **A1:E19** selected, on the **Home** tab, in the **Styles** group, click the **Conditional Formatting** arrow, click **New Rule** and then click **Use a formula ...**

Mac: Select **New Rule, Style: Classic, Use a formula...**

3. In the box, type **=B1="Jan"**
4. Click the **Format** button.

Mac: Click **Format with** and select **Custom Format**.

5. Click the **Fill** tab and click light red.
6. Click **OK**. Click **OK** again.
7. Repeat the process for **Feb** and **Mar**, using different colors for those months.

	A	B	C	D	E
1	Fire/Police	Month	Location	Class	Num
2	Police	Mar	Precinct 1	Crime	121
3	Police	Feb	Precinct 1	Crime	93
4	Police	Jan	Precinct 1	Crime	285
5	Police	Mar	Precinct 2	Crime	214
6	Police	Feb	Precinct 2	Crime	175

- l. Sort the data by **Month**, **Jan** to **Mar**, and then by **Num**, in descending order. Here are the steps:

1. With **A1:E19** selected, on the **Home** tab, in the **Editing** group, click the **Sort & Filter** arrow, and select **Custom Sort**. Be sure **My data has headers** is checked.
2. Click the **Sort by** arrow and select **Month**. Click the arrow under **Order** and select **Custom List**. Choose **Jan, Feb, Mar, ...** and click **OK**.
3. Click **Add Level (+ on Mac)**. Click the **Then by** arrow and select **Num**. Click the arrow under **Order**, select **Largest to Smallest**, and click **OK**.

- m. Insert **Data Bars** to graphically show the data. To do that:

1. Select column **E**, copy, click the column **F** column label, and paste. You are going to put the data bars in column **F** so you can easily see both the numbers and the data bars.
2. Select **F2:F19** (you do not want **F1** because that contains the field name).
3. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**, point to **Data Bars**, and select **More Rules**.
4. Check the box that says **Show Bar Only** (so the numbers do not show).
5. Click the arrow under **Fill** and select **Gradient Fill**.
6. Select **dark gray** for the **color**.
7. Click the arrow under **Border** and select **Solid Border** with the color **black**.

Format all cells based on their values:

Format Style: Data Bar ☒ Show Bar Only

Minimum Maximum

Type: Automatic Automatic

Value: (Automatic) (Automatic)

Bar Appearance:

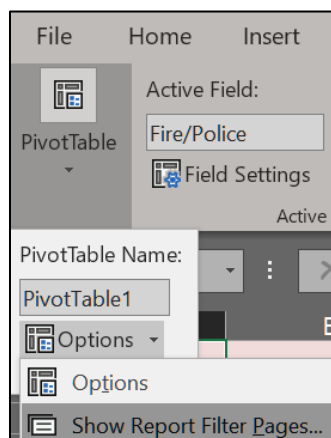
Fill Color Border Color

Gradient Fill Solid Border

Click **OK**. Here you can see that **Precinct 2** had the highest **Num** of **Crimes** in **January**, but was in the bottom half for **February** and **March**. This would be something to investigate.

	A	B	C	D	E	F
1	Fire/Police	Month	Location	Class	Num	Num
2	Police	Jan	Precinct 2	Crime	310	
3	Police	Jan	Precinct 4	Crime	308	
4	Police	Jan	Precinct 5	Crime	286	
5	Police	Jan	Precinct 1	Crime	285	
6	Police	Jan	Precinct 6	Crime	274	
7	Police	Jan	Precinct 3	Crime	196	
8	Police	Feb	Precinct 4	Crime	327	
9	Police	Feb	Precinct 5	Crime	243	
10	Police	Feb	Precinct 3	Crime	224	
11	Police	Feb	Precinct 6	Crime	206	
12	Police	Feb	Precinct 2	Crime	175	
13	Police	Feb	Precinct 1	Crime	93	
14	Police	Mar	Precinct 6	Crime	355	
15	Police	Mar	Precinct 4	Crime	246	
16	Police	Mar	Precinct 5	Crime	234	
17	Police	Mar	Precinct 2	Crime	214	
18	Police	Mar	Precinct 3	Crime	214	
19	Police	Mar	Precinct 1	Crime	121	

- n. Set up the **PivotTables Crime** worksheet to print in **Portrait** orientation, **Adjust to 150 %** of normal size, **centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook but do NOT close it.
- o. In order to make analysis easier, you can display data on separate worksheets. For example, let's do this for **Fire** and **Police** data. Doing so will make it easier to answer questions about the calls handled by each department.
 1. On the **Pivot** worksheet tab, click cell **A1**.
 2. On the **PivotTable Analyze** tab, in the **PivotTable** group (on the left), click the **Options** arrow, and then click **Show Report Filter Pages**.



In the dialog box, confirm that **Fire/Police** is selected and click **OK**.

This adds two new worksheets, one for **Fire** and one for **Police**.

Fire Worksheet

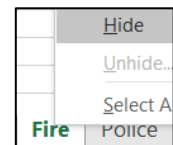
	A	B	C	D
1	Fire/Police	F		
2				
3	Sum of Num	Column Labels		
4	Row Labels	Fire	Medical	Grand Total
5	Station 1	989	2535	3524
6	Station 2	795	2720	3515
7	Station 3	238	1024	1262
8	Station 4	387	1524	1911
9	Grand Total	2409	7803	10212

Police Worksheet

	A	B	C	D	E
1	Fire/Police	Police			
2					
3	Sum of Num	Column Labels			
4	Row Labels	Accidents	Crime	Sent	Grand Total
5	Precinct 1	731	499	10679	11909
6	Precinct 2	586	699	14937	16222
7	Precinct 3	558	634	14451	15643
8	Precinct 4	617	881	14579	16077
9	Precinct 5	600	763	13887	15250
10	Precinct 6	825	835	14277	15937
11	Grand Total	3917	4311	82810	91038

The data are copied, not moved. That is, the data for each worksheet remains on the original **Pivot** worksheet.

3. Hide the **Fire** worksheet by right-clicking its worksheet tab and selecting **Hide**.



4. In the same way, hide the **Police** worksheet. You can unhide a worksheet by right-clicking its tab and selecting **Unhide**.

p. The default summary statistic is to find sums. It is also possible to calculate other quantities. Do the following:

1. On the **Pivot** worksheet tab, point to cell **G5 (Grand Total for Precinct 1)**, right-click, and click **Value Field Settings**.
2. Under **Summarize value field by**, select **Average**, and click **OK**. All the calculated values are changed from **Sum** to **Average**. Notice that cell **A3** changes from **Sum of Num** to **Average of Num**.
3. Right-click any numeric value and select **Value Field Settings**. In the lower left corner of the dialog box, click **Number Format** to open its dialog box.
4. Under **Category**, click **Number**. Make the **Decimal places** 0 and check the **Use 1000 separator** box. Click **OK**. Click **OK** again.

	A	B	C	D	E	F	G
1	Fire/Police	(A)					
2							
3	Average of Num	Column Labels					
4	Row Labels	Fire	Medical	Accidents	Crime	Sent	Grand Total
5	Precinct 1			244	166	3,560	1,323
6	Precinct 2			195	233	4,979	1,802
7	Precinct 3			186	211	4,817	1,738
8	Precinct 4			206	294	4,860	1,786
9	Precinct 5			200	254	4,629	1,694
10	Precinct 6			275	278	4,759	1,771
11	Station 1	330	845				587
12	Station 2	265	907				586
13	Station 3	79	341				210
14	Station 4	129	508				319
15	Grand Total	201	650	218	240	4,601	1,298

PivotTable Fields

Choose fields to add to report:

Search

Drag fields between areas below:

Filters

Fire/Police

Columns

Class

Rows

Location

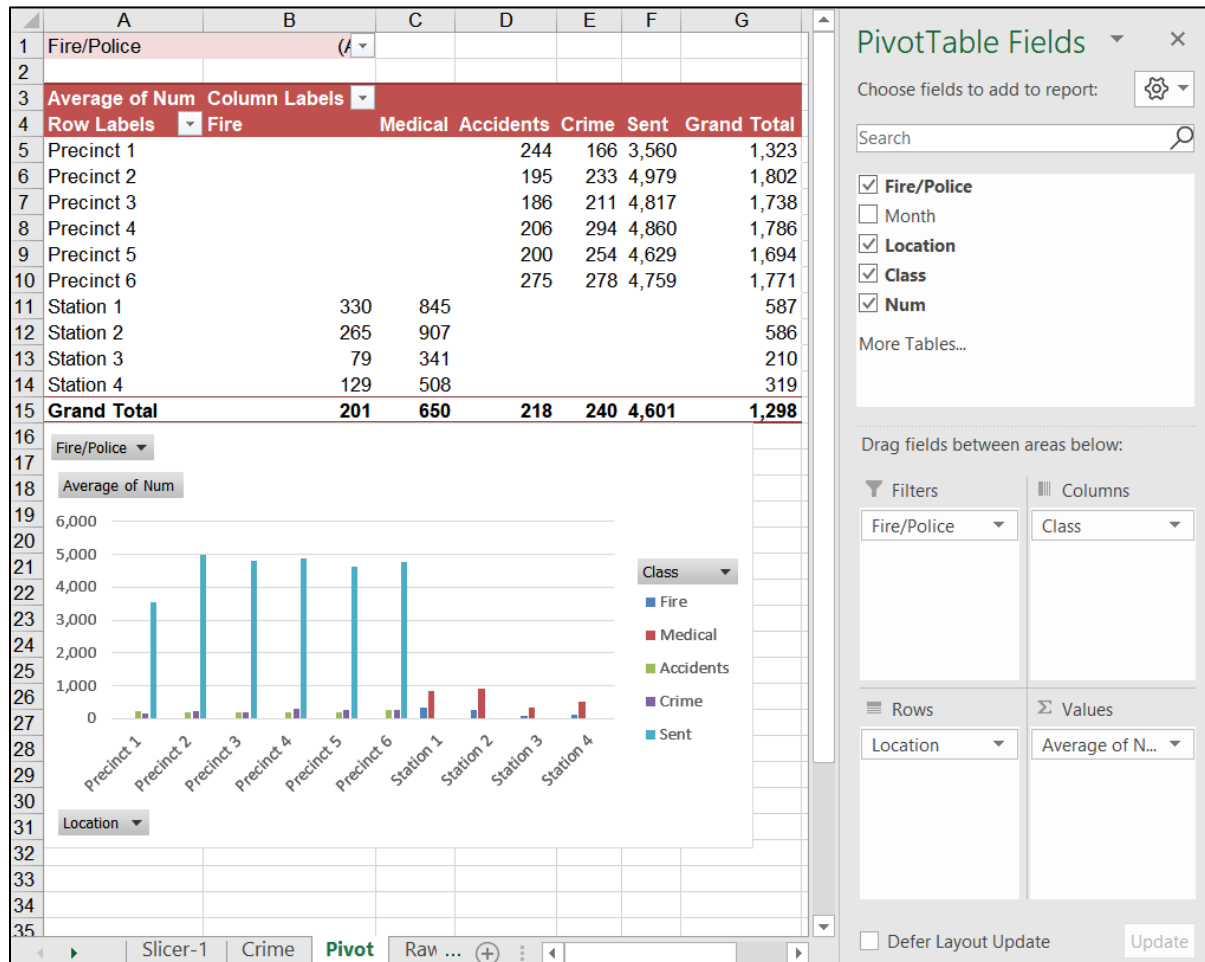
Σ Values

Average of Num

q. You can create charts of the PivotTable. Do the following on the **Pivot** worksheet:

1. On the **PivotTable Analyze** tab, in the **Tools** group, click **PivotChart**. In the **Insert Chart** dialog box, on the left side, if necessary, click **Column**, and then click **OK** to accept the default chart – **Clustered Column**.

Mac: There is no **Insert Chart** dialog box.



This is a chart of all the **Fire** and **Police** data. It shows:


6 Police **Precincts** with their 3 **Classes**, **Accidents**, **Crime**, and **Sent**
 4 Fire **Stations** with their 2 **Classes**, **Fire**, and **Medical**.

Notice the **Filter Buttons** for:

Fire/Police Fire/Police
 Average of Num Average of Num
 Location Location
 Class Class

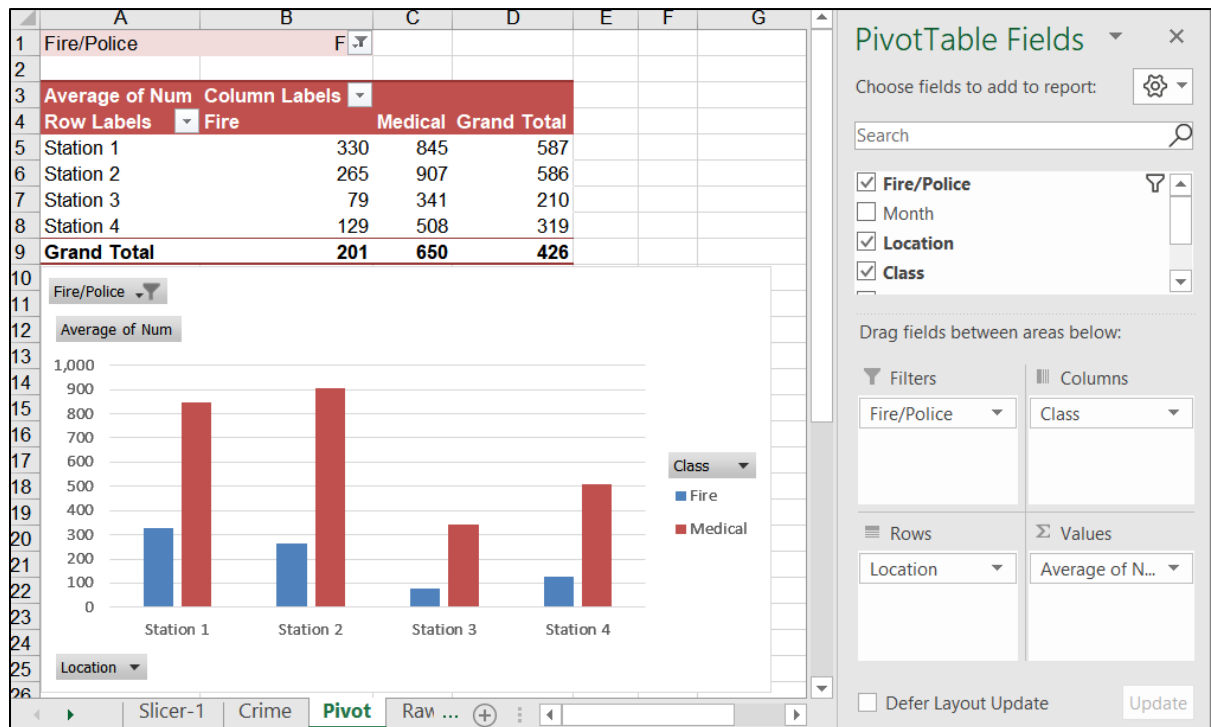
Mac: There are no **Filter Buttons** on **Mac** PivotCharts.

2. On the chart, click the **Fire/Police Filter Button**. 

Select **Fire** and click **OK**. The **Fire/Police Filter Button**  now shows the filter icon with the arrow. The same is true for the filter button in cell **B1** on the PivotTable.

Mac: On the PivotTable, click the arrow in cell **B1**. Uncheck **Police** so that only **Fire** is checked.

	A	B
1	Fire/Police	Fire



Repeat this process to display **All** the data again.

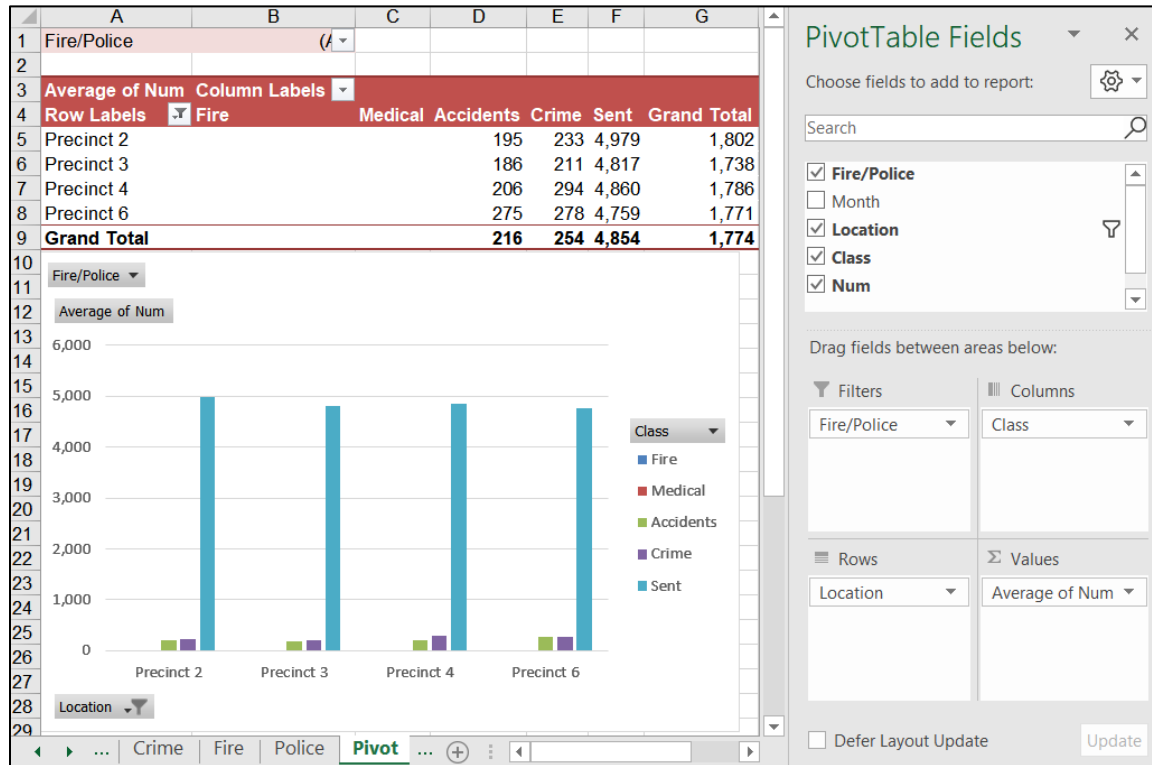
3. In the lower left, click the **Location Filter Button** to open its dialog box.

Mac: In the PivotTable, click the arrow in cell **A4, Row Labels**.

Click the **Value Filters** arrow, select **Top 10...** and, in the dialog box, change **10** to **4** and click **OK**.

Mac: Under **Filter**, next to **By value**, click the **Choose one** arrow and select **Top 10**. Under **Top 10**, change the **0** to **4** and close the dialog box.

Now, the four **Locations** with the most calls are displayed. They are **Police Precincts 2, 3, 4, and 6**.

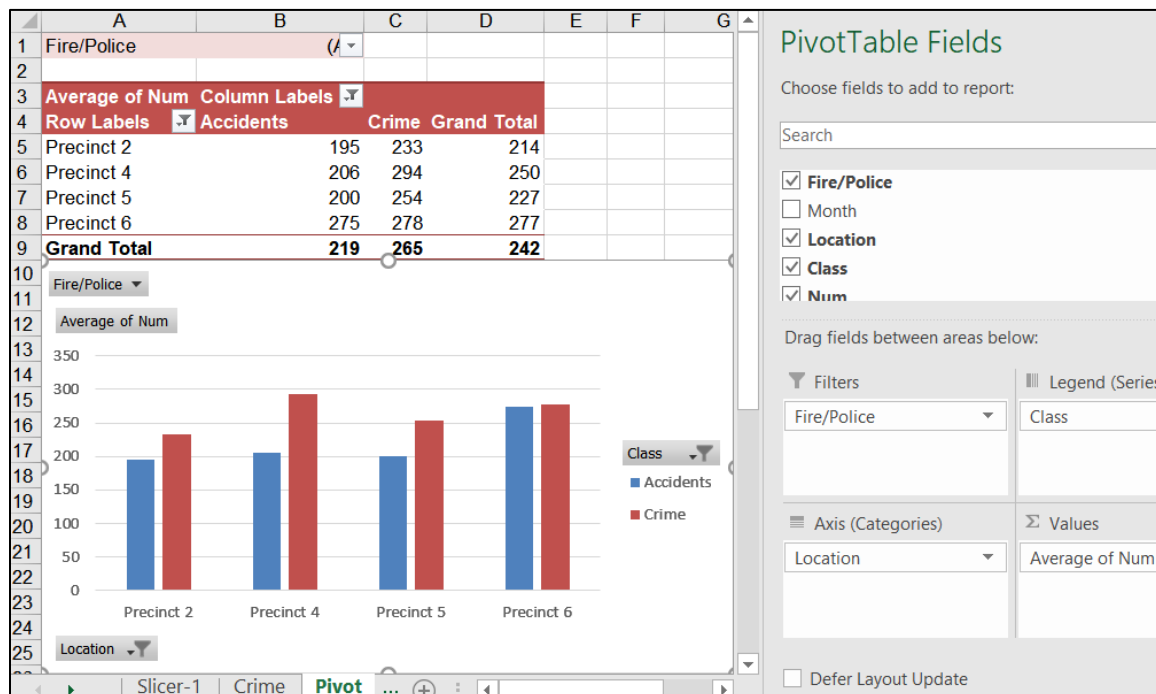


4. On the right middle of the chart, click the **Class** arrow.


Mac: In the PivotTable, click the arrow in cell **B3**, **Column Labels**.

Deselect everything but **Accidents** and **Crime**.

Click **OK**.

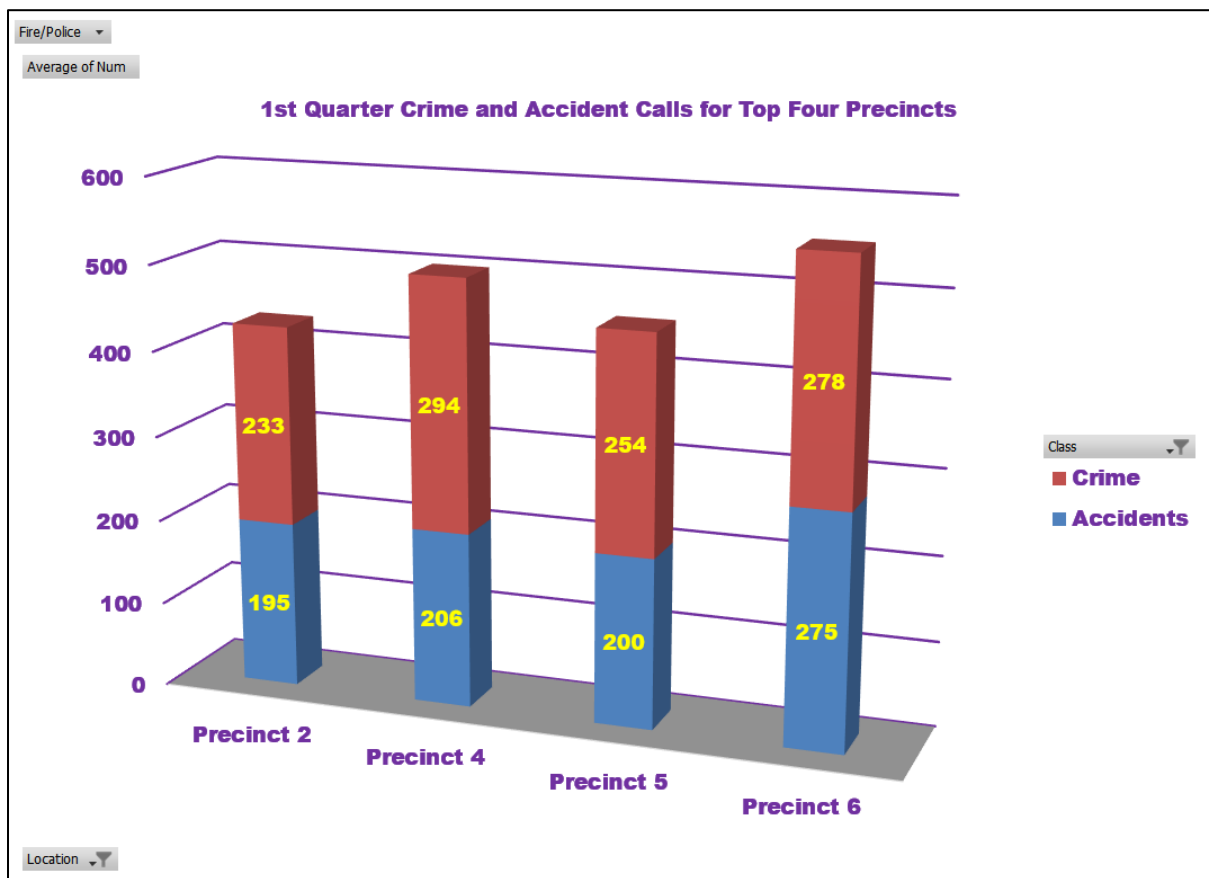


5. Move the chart to its own chartsheet (**PivotChart Design**, **Location**, **Move Chart**) and label it **3-D Chart**.

6. On the **PivotChart Design** tab, in the **Type** group, click **Change Chart Type**, select **3-D Stacked Column**, and then click **OK**.
7. Click the green cross  and place checks next to **Axes (Primary Horizontal, Primary Vertical)**, **Chart Title (Above Chart)**, **Data Labels (Center)**, **Gridlines (Primary Major Horizontal)**, and **Legend (Right)**.

Mac: There is no green cross. On the **Chart Design** tab, in the **Chart Layouts** group (on the far left), click the **Add Chart Element** arrow and set the **Axes**, **Chart Title**, **Data Labels**, **Gridlines**, and **Legend**.

8. Enter **1st Quarter Crime and Accident Calls for Top Four Precincts** as the title. Change the font to 12 pt purple Arial Black.
9. Change the font of the column data labels to **12 pt yellow Arial Black**.
10. Change the font of both axes and the legend **12 pt purple Arial Black**.
11. Make the Major Gridlines purple and Width 2 pt. (**PivotChart Format**, **Current Selection**, **Vertical (Value) Axis Major Gridlines**, **Format Selection** (Format Pane on **Mac**), **Line**, **Solid line**, **Color Purple**, **Width 2 pt**).
12. Follow a similar procedure to make the floor **gray**.



The columns show the **Accidents** (blue) and **Crime** (red) calls added together. The different colors illustrate how much each contributes to the total.

13. Click the **Pivot** worksheet tab. Since the charts were based on this PivotTable, and you changed the items displayed in the chart the PivotTable shows only **Accidents** and **Crime** for the top four **Precincts**.

	A	B	C	D
1	Fire/Police	(All)		
2				
3	Average of Num	Column Labels		
4	Row Labels	Accidents	Crime	Grand Total
5	Precinct 2	195	233	214
6	Precinct 4	206	294	250
7	Precinct 5	200	254	227
8	Precinct 6	275	278	277
9	Grand Total	219	265	242

If you were to change the filters on this PivotTable, the graph that is based on this PivotTable would change also.

- r. Click the **3-D Chart** tab and click in the chart. On the **PivotChart Analyze** tab, in the **Show/Hide** group, click the **Field Buttons** arrow and select **Hide All** so those do not show on the printout. (To show them again, click that button again).

Mac: Field Buttons do not exist on **Mac** PivotCharts so ignore references to them.

Set up the **3-D Chart** chartsheet to print in **Landscape** orientation. Include a footer that contains the **file name** on the left and the **chartsheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook but do NOT close it.

- s. **Unhide** the **Fire** and **Police** tabs (right-click a visible tab to open the **Unhide** dialog box, click the name of the tab you wish to unhide, and click **OK**).

There may be too many worksheet tabs in this workbook to see them all at one time. If you see arrows to the left of the left-most tab, it means some tabs are not visible. To see them, click the arrow as many times as is necessary. The arrow will change as you display worksheet tabs or hide them.



means there are more tabs on the right.



means there are more tabs on both the left and right.



means there are more tabs on the left.

You may want to adjust the space for the tab labels. To do that, move the mouse pointer to the three **vertical dots** next to the horizontal scroll bar. The pointer becomes a double headed arrow. Click and drag left or right to make less or more room for the tab labels. This will expand or contract the horizontal scroll bar.



Mac: The horizontal scroll bar is just above the tab names so skip this.

- t. Save and close the workbook.

Step 4 Submit Now, submit the following. Use these names for the pdf files:

HW04-1 HWID 3A Enterprise Fund Done (Expenditures Chart) – This is the Expenditures Chart chartsheet

HW04-2 HWID 3B Tourism Done (Expenditures)– This is the Expenditures worksheet

HW04-2 HWID 3B Tourism Done (Advertising) – This is the Advertising worksheet

HW04-3 HWID HLOOKUP Gradebook Done

HW04-4 HWID VLOOKUP Shipping Done

HW04-5 HWID PivotTables Done (Slicer-1) – This is the Slicer-1 worksheet

HW04-5 HWID PivotTables Done (Crime) – This is the Crime worksheet

HW04-5 HWID PivotTables Done (3-D Chart) – This is the 3-D Chart chartsheet

Create a pdf file of the output for each of the above, place them in a folder called **HW04 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW04 Excel Chapter 3: Analyzing Data with Charts and What-If Tools**.

Step 5 Backup Now would be a good time to backup your files.

Project 5

Excel: Customize Charts, Make Decisions, and Sort

Step 1 Read For this project, there are no pages to read in your textbook.

Step 2 Activities For this project, there are no textbook activities.

Step 3 Homework Do the problems listed below, and turn them in for grading.

This Project will extend your knowledge of using Excel to make graphs and to help make decisions using **IF/THEN/ELSE** logic.

HW05-1 River Chart

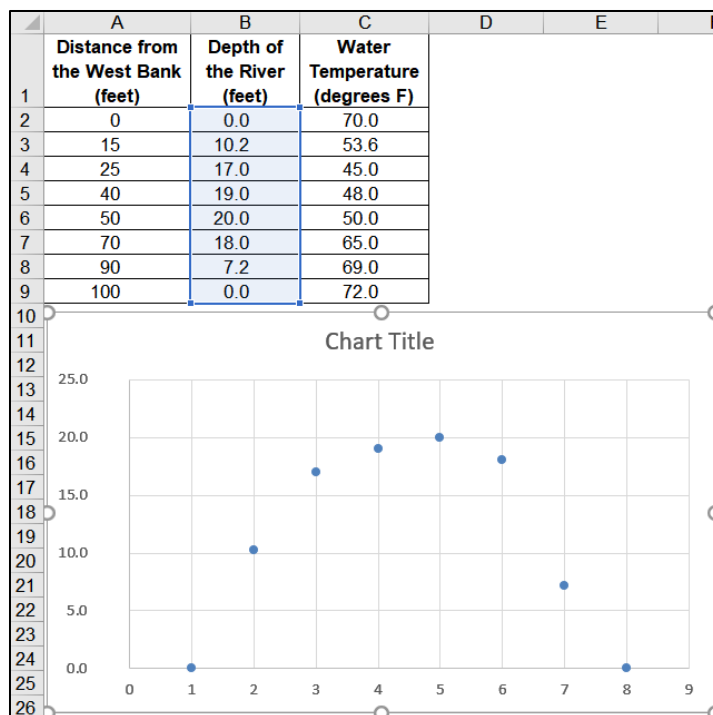
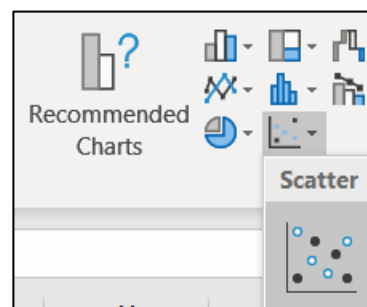
Problem: How can you create a mathematical model (formula) based on empirical data and put two graphs on one chart?

In this exercise you will be given measurements that show the relationship between the depth of a river, the distance from one of its banks, and the water temperature. Water depth measurements are routinely made to help keep rivers navigable and to help with flood control and prevention. Your task is to graph these relationships and to create a mathematical model that can be used to predict the expected water depth at any distance from the shore. Where the actual depth does not match the model might indicate that dredging is needed. On the same graph, you will also graph bottom water temperature versus distance from the riverbank. Having these two graphs on one grid will enable you to see the relation between water depth and temperature.

- a. Open the workbook **HW05-1 River Original**, which is one of the files you downloaded at the start of the term.
- b. Save the workbook to your **Excel Files** folder using the name **HW05-1 HWID River Done**.

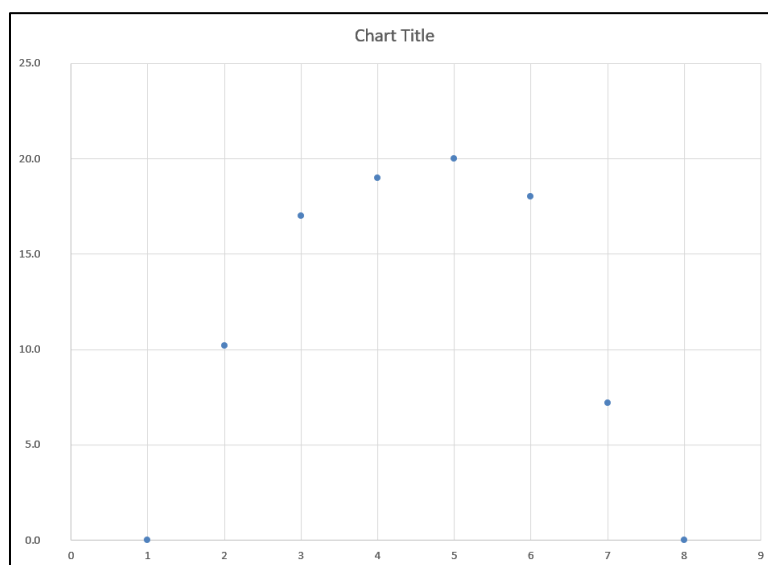
c. Graph the distance/depth data by doing the following:

1. Select cells **B2:B9**.
2. On the **Insert** tab, in the **Charts** group, click **Scatter** and then select **Scatter**.



Note that a Worksheet has cells and *may* contain a chart.

3. Be sure the chart is selected and then on the **Chart Design** tab in the **Location** group (way over on the right), click **Move Chart**.
4. Click the button next to **New sheet**, type **River Depth Chart**, and click **OK**. The chart appears in its own chartsheet.

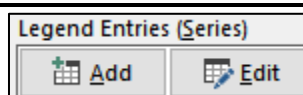


Note that a Chartsheet has no cells, *only* a chart.

5. Be sure the chart is selected and then on the **Chart Design** tab in the **Data** group (way over on the right), click **Select Data**.



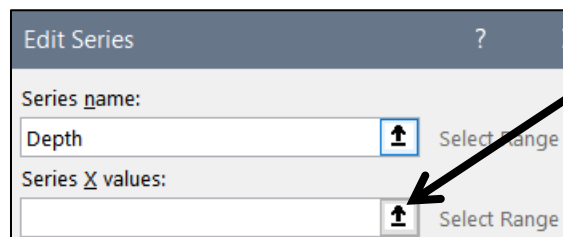
6. Under **Legend Entries (Series)**, click **Edit**.



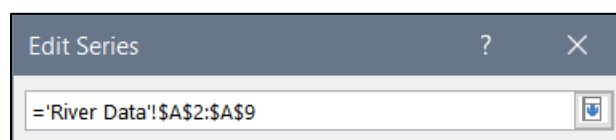
Mac: There is no **Edit** button. The boxes below automatically appear.

7. Fill in the **Edit Series** box as follows:

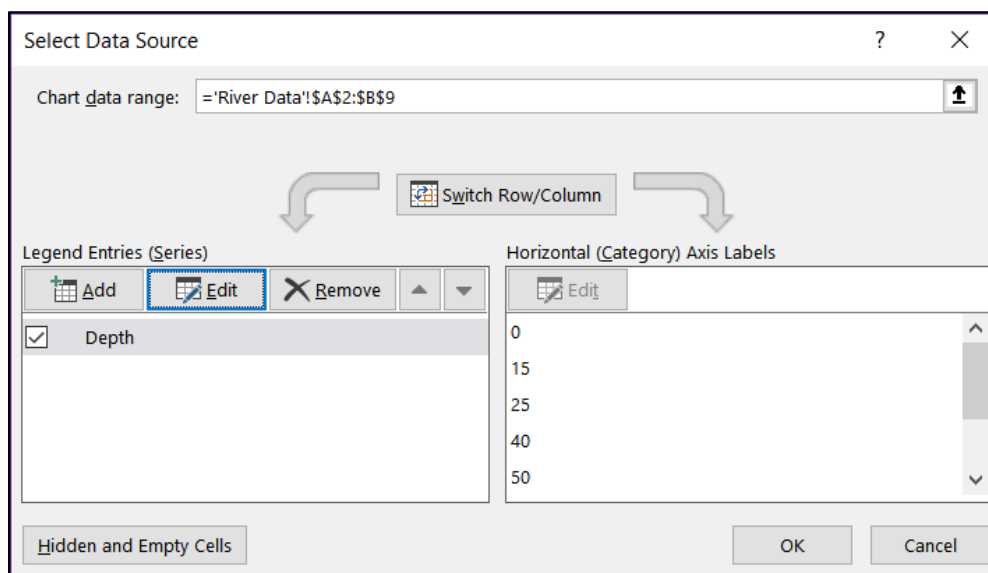
- In the **Series name** box type **Depth**. This gives the data a name. In a bit, you will enter another series called **Temperature**.
- Next to the **Series X values** box, click the collapse dialog button:



- Click the **River Data** worksheet and select **A2:A9**, which contains the distance data. Notice how the location is inserted in the box:



- Click the collapse dialog button again.
8. The **Series Y values** should already show the range **B2:B9** in the **River Data** worksheet. Click **OK**.



9. Click **OK** again.

d. Format the chart as follows:

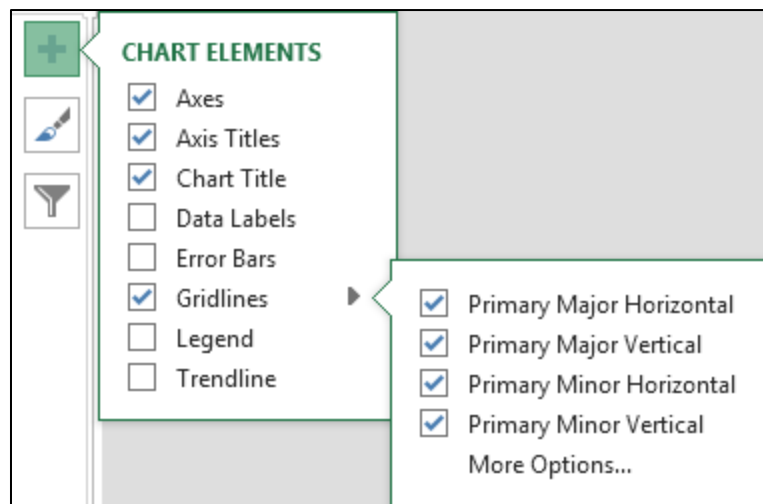
1. Click anywhere in the chart so the chart elements buttons are displayed in the upper right corner.



Mac: There are no chart elements buttons. The **Add Chart Element** menu is in the upper left corner of the screen. Click its arrow to open it.

Open the **Chart Elements** menu by clicking the green cross.

Insert checks as shown below:



2. Click the **Chart Title** textbox (it probably has the word **Depth** in it). Click the formula bar, and type **River Depth vs. Distance From West Bank**

Tap **Enter** to update the title.

Mac: If you have trouble selecting a chart element, tap the **Tab** key to cycle through the elements until the one you want is selected.

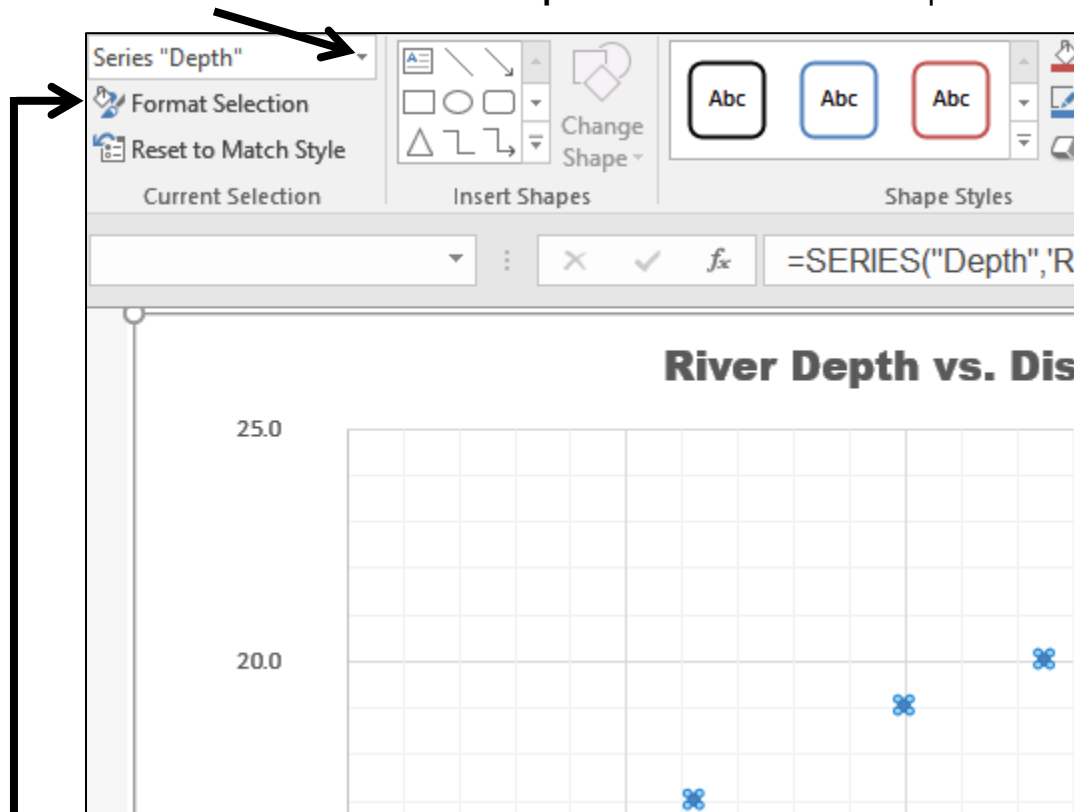
3. Using the same technique, change the **Vertical Axis Title** to **Depth (feet)**.

Change the **Horizontal Axis Title** to **Distance From West Bank (feet)**.

4. For each of the three titles, make the font 14 point Arial Black.

e. Format the data points by doing the following:

1. On the **Chart Format** tab, in the **Current Selection** group (on the left), click the arrow and select **Series "Depth"**. This selects the data points.



2. On the **Chart Format** tab, in the **Current Selection** group click **Format Selection** to open the **Format Data Series** pane (on the right).

Mac: Click the **Format Pane** button on the right side of the ribbon.

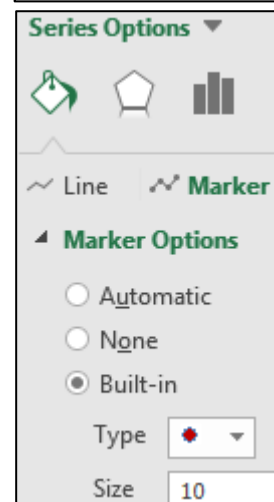
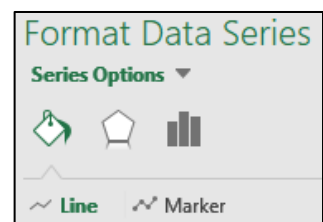
Click the paint bucket  to see the **Line and Marker** options.

3. Click **Marker**, click the triangle next to **Marker Options** to open its menu, and then click the **Built-in** button.

Click the **Type** arrow and be sure it is set to circle (third choice from the bottom).

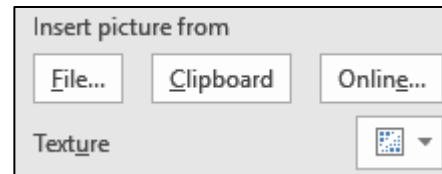
Change the size to **10**.

4. Click the **Fill** triangle to open its menu, click **Solid fill**, and then change the color to dark red.




f. Change the background color of the chart by doing the following:

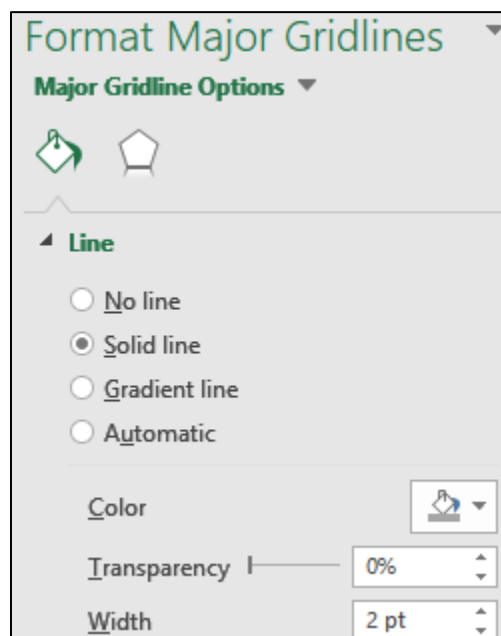
1. On the **Chart Format** tab, in the **Current Selection** group, click the arrow, select **Chart Area**, and then click **Format Selection** to open the **Format Chart Area** pane.
2. If necessary, click the **Fill** triangle to show its menu and then click **Picture or texture fill**.
3. Click the arrow to the right of **Texture** and click the **Blue tissue paper** texture.



g. Format the axes and gridlines as follows:

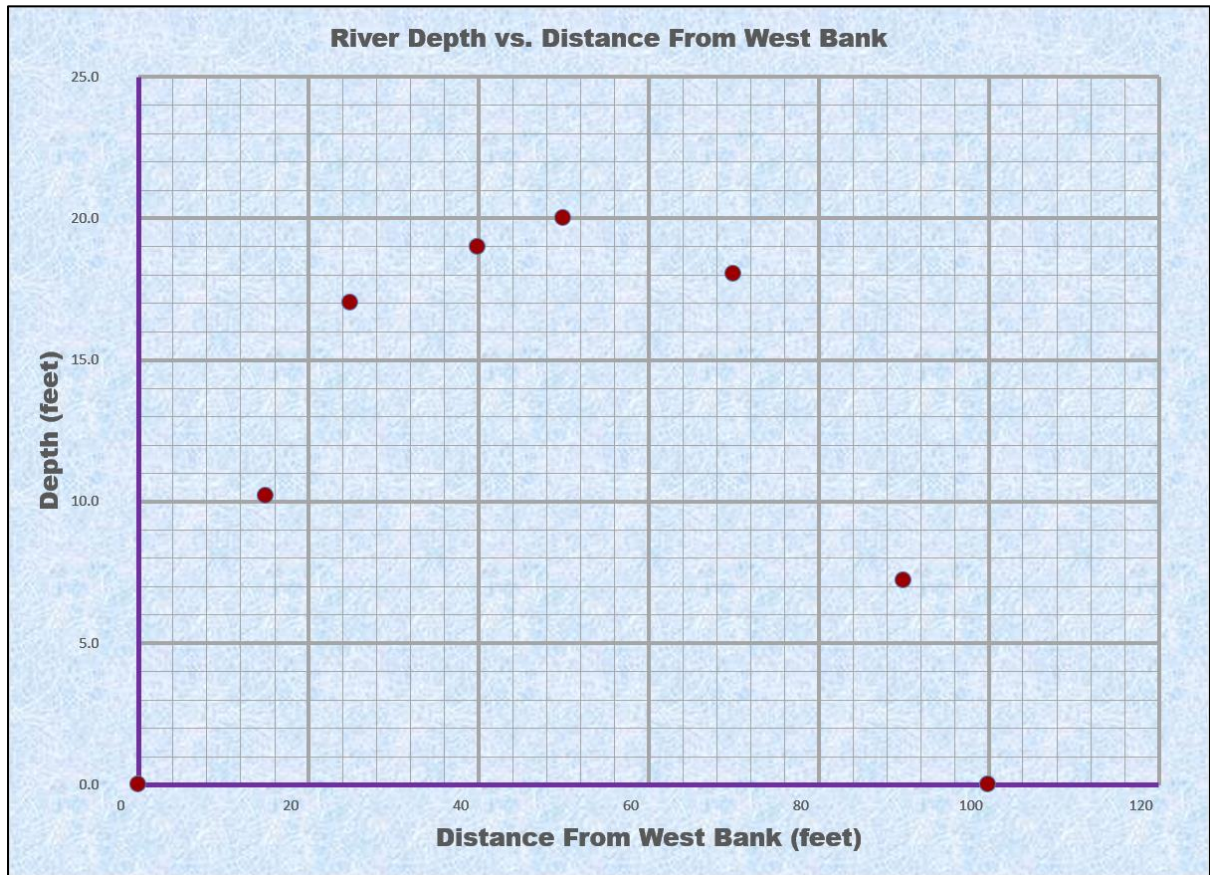
1. On the **Chart Format** tab, in the **Current Selection** group, click the arrow, select **Vertical (Value) Axis**, and click **Format Selection**.
2. Click the paint bucket  change the **Line** color to **purple** and make the width **3 pt**.
3. Follow the same procedure to format the **Horizontal (Value) Axis** line to **3 pt purple**.
4. On the **Chart Format** tab, in the **Current Selection** group, click the arrow, select **Vertical (Value) Axis Major Gridlines**, and click **Format Selection**.

Click the paint can and change the **Color** to **dark gray** and the **Width** to **2 pt**.



5. Use the same procedure to make these changes:

- Make the **Vertical (Value) Axis Minor Gridlines** 0.5 pt dark gray.
- Make the **Horizontal (Value) Axis Major Gridlines** 2 pt dark gray.
- Make the **Horizontal (Value) Axis Minor Gridlines** 0.5 pt dark gray.



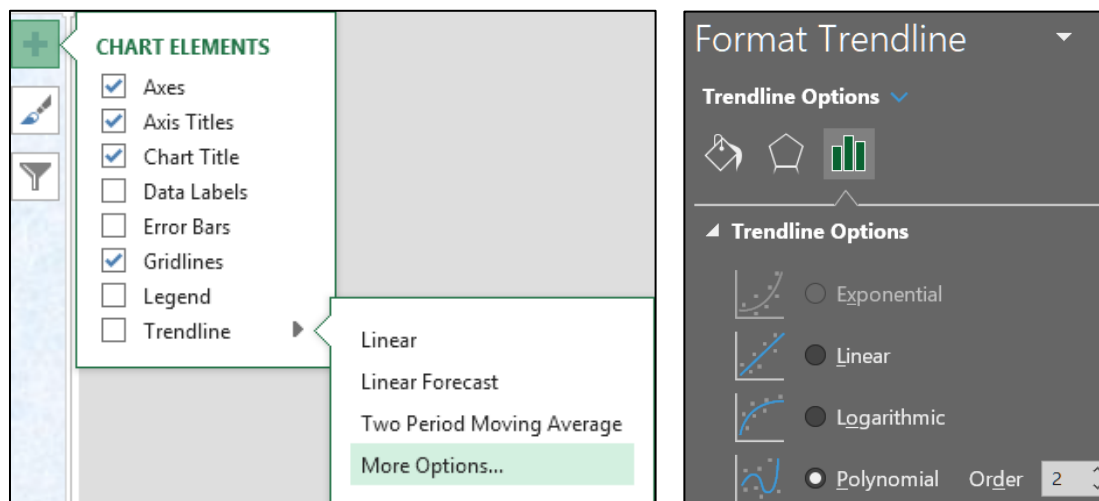
h. Have Excel calculate and insert a trend line by doing the following:

1. If necessary, click inside the chart to show the **Chart Elements** button (green cross). Click the arrow next to **Trendline** and select **More Options**.

Mac: Click the **Chart Design** tab, click the **Add Chart Element** arrow, select **Trendline**, and select **More Options**.

If it is not already selected, click  to open the **Trendline Options**

- Notice how most of the points of the graph look like they would fall on an upside down parabola. So, you will try a mathematical model whose graph is a parabola. To do this, if necessary, click the **Trendline Options** triangle to open its menu and select **More options** to open the **Format Trendline** pane. Click the three vertical columns to open the **Trendline Options**.



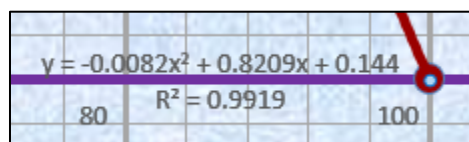
Click the button next to **Polynomial**. Confirm that the **Order** is set to **2**.

Excel uses a mathematical technique called **polynomial regression** to create the second degree (quadratic) polynomial that best describes the data. The graph of the equation is a parabola. You will study regression when you take a statistics course.

- Check the box next to **Display Equation on chart**.
- Check the box next to **Display R-squared value on chart**. This value gives an idea of how well the mathematical model describes the data. The optimal value is $R^2 = 1$, which indicates a perfect fit.

The actual data points are represented by the red dots and the mathematical model calculated by Excel is represented by the trendline. The displayed R^2 value, **0.9919**, indicates that the mathematical model fits the data very well.

- Click the **Fill & Line** paint bucket  and change the trendline color to **dark red**, the **Width** to 3 pt, and the **Dash type** to solid.

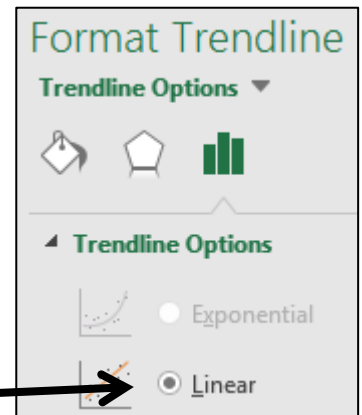


- Save your file.

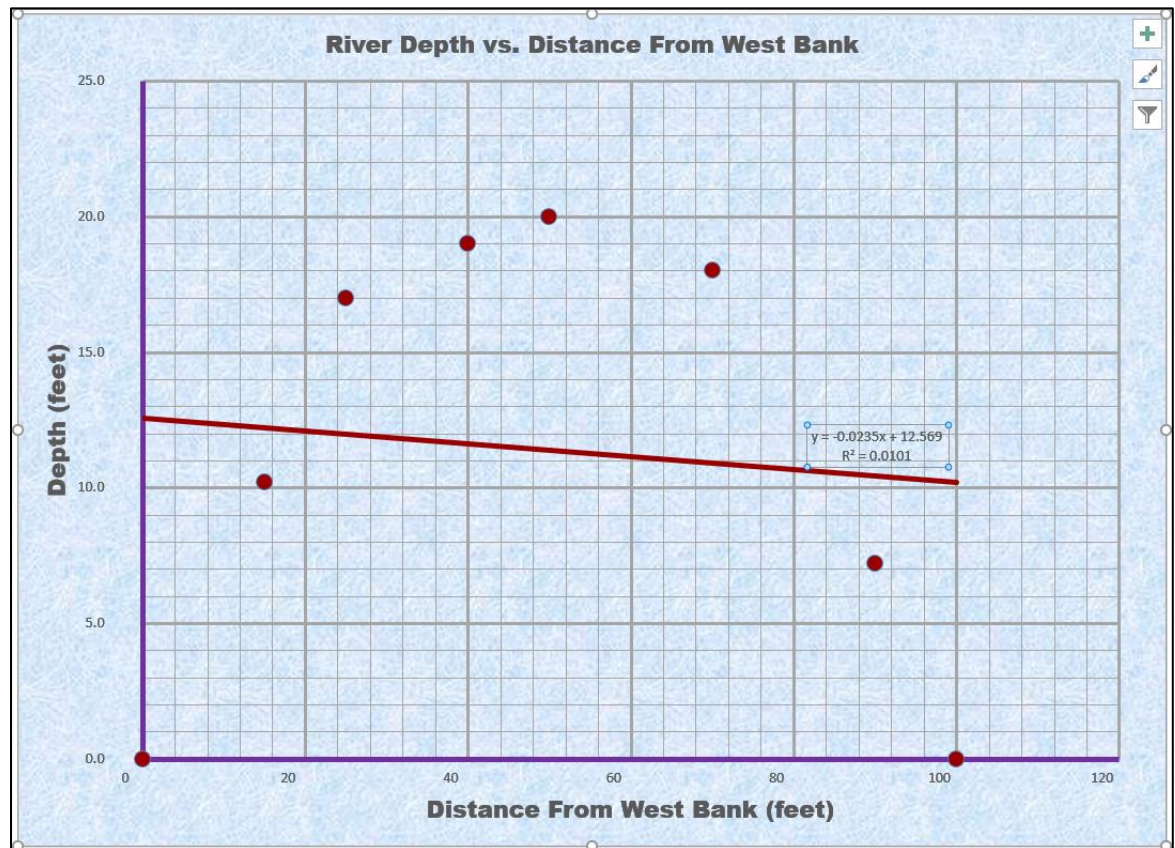
- i. Different mathematical models will fit the data more or less precisely. To see this, do the following:

1. Make a copy of the **River Depth Chart** chartsheet. To do this, right-click the chartsheet name, select **Move or Copy**, click **Create a copy**, and click **OK**. Double-click the new chart name, **River Depth Chart (2)**, type **River Depth and Temp Chart**, and then tap **Enter**.
2. Be sure **Series "Depth" Trendline1** is selected and click **Format Selection**.

Change the **Trendline** to **Linear**.



You may have to move the equation so you can see it more easily.



The shape of the trendline changed to a straight line, the mathematical model now has only two terms, and the R^2 value of 0.0101 indicates that this new model does not fit the data very well, which is obvious from the graph.

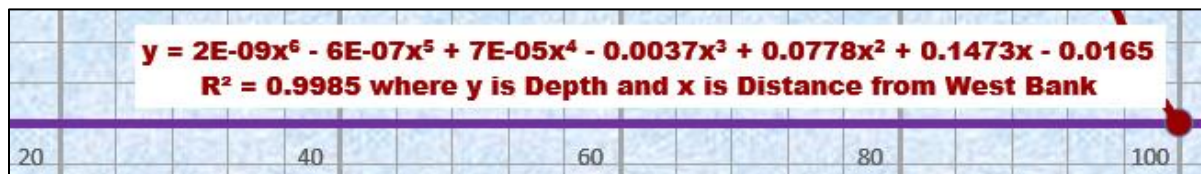
3. Change the **Trendline** to **Polynomial** and change the **Order** to 6.

Notice how the shape of the trendline has changed to a more complex curve that better follows the flow of the data, the displayed equation has more terms, and the displayed **R²** value of **0.9985** indicates that this new model fits the data even better than the quadratic model. There is an obvious trade-off here: when the model is more complex it generally fits the data better, but it also may be more difficult to work with.

4. Click the equation textbox.

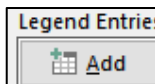
- Change the font to **dark red 9 pt Arial Black**.
- Make the **fill** of the textbox **white**.
- Click inside the box and, just to the right of **R² = 0.9919**, type a space, and then type **where y is Depth and x is Distance from West Bank**.

Mac: Select the **Series “Depth” Trendline 1 Equation**. Point to the very edge of the textbox, right-click, and select **Edit Text**. I found this tricky on my **Mac** so if you cannot get it to work just leave it out.



j. Do the following to add a second graph that shows how bottom temperature varies from one side of the river to the other: ²¹


1. Click anywhere in the **River Depth and Temp Chart**.
2. On the **Chart Design** tab in the **Data** group click **Select Data**.
3. Click the **Add** button.



Mac: There is no **Add** button. Under the box labeled **Legend entries (Series)**, click the **+**

²¹ For **Mac** users, check out https://www.youtube.com/watch?v=99XaQFINf_Q

4. Fill in the boxes as follows:

- For the **Series name** type **Temperature**.
- Next to the **Series X values** box, click the collapse dialog button. 
- Click the **River Data** worksheet and select **A2:A9**, which contains the distance data. Notice how the location is inserted in the box.

Edit Series

= 'River Data'!\$A\$2:\$A\$9

- Click the collapse dialog button again.
- For the **Series Y values**, follow the same procedure to select the **Temperature** data in **C2:C9** on the **River Data** worksheet.
- Click **OK** and then click **OK** again.

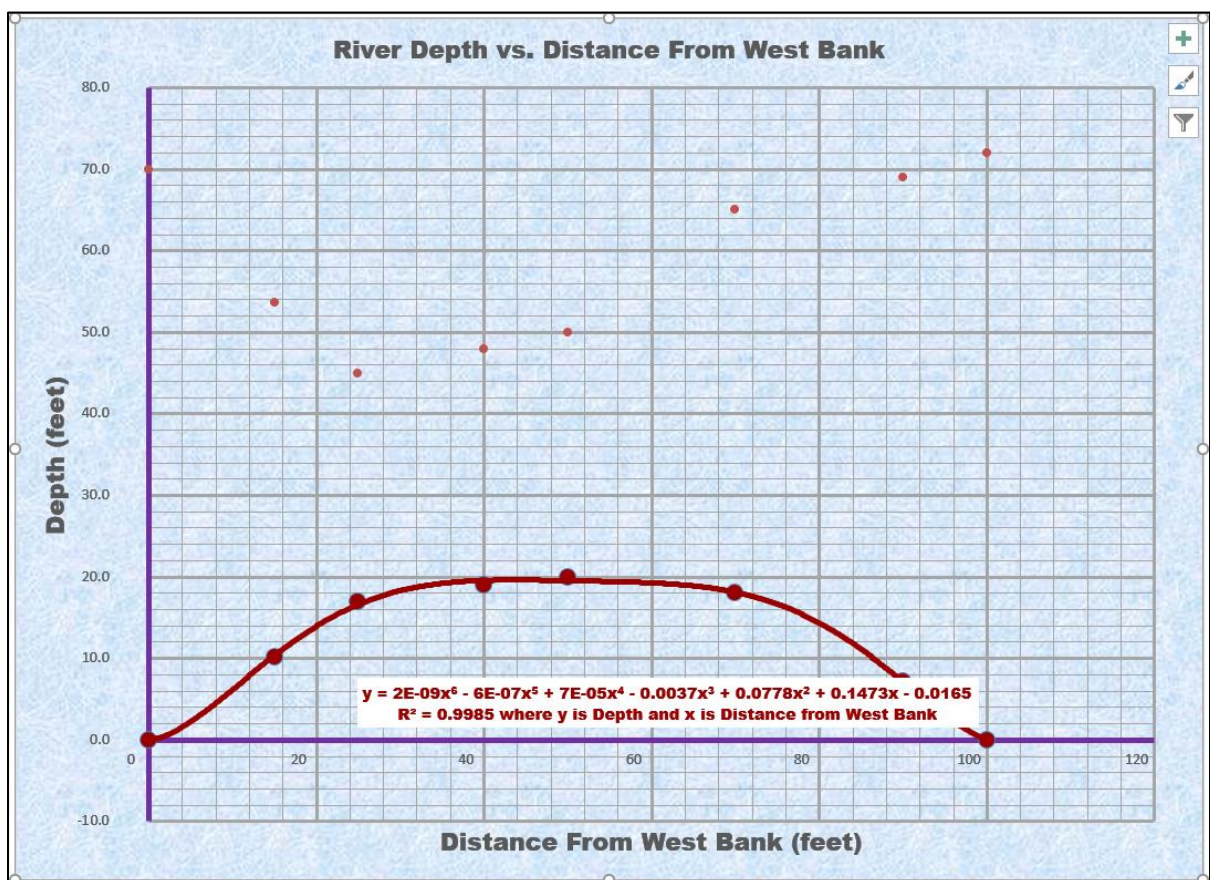
Edit Series

Series name: Temperature = Temperature

Series X values: = 'River Data'!\$A\$2:\$A\$9 = 0 , 1...

Series Y values: = 'River Data'!\$C\$2:\$C\$9 = 70.0 , 5...


OK Cancel



k. Do the following to add a secondary vertical axis scale:

Mac: Instead of steps 1 through 5 below, do this:

- On the **Chart Format** tab, select **Series Temperature**.
- On the **Chart Design** tab click **Change Chart Type**.
- From the drop-down menu choose **X Y (Scatter)** and then **Scatter with Smooth Lines and Markers**.
- With **Series Temperature** still selected, click **Format Pane**.
- With the **Series Options** selected, click **Secondary Axis**.

1. On the **Chart Design** tab in the **Type** group click **Change Chart Type**.
2. At the bottom of the choices on the left, click  **Combo**
3. Put a check in the **Secondary Axis** box next to the right of **Temperature**.

Choose the chart type and axis for your data series:

Series Name	Chart Type	Secondary Axis
Depth of the River (feet)	Clustered Column	<input type="checkbox"/>
Temperature	Line	<input checked="" type="checkbox"/>

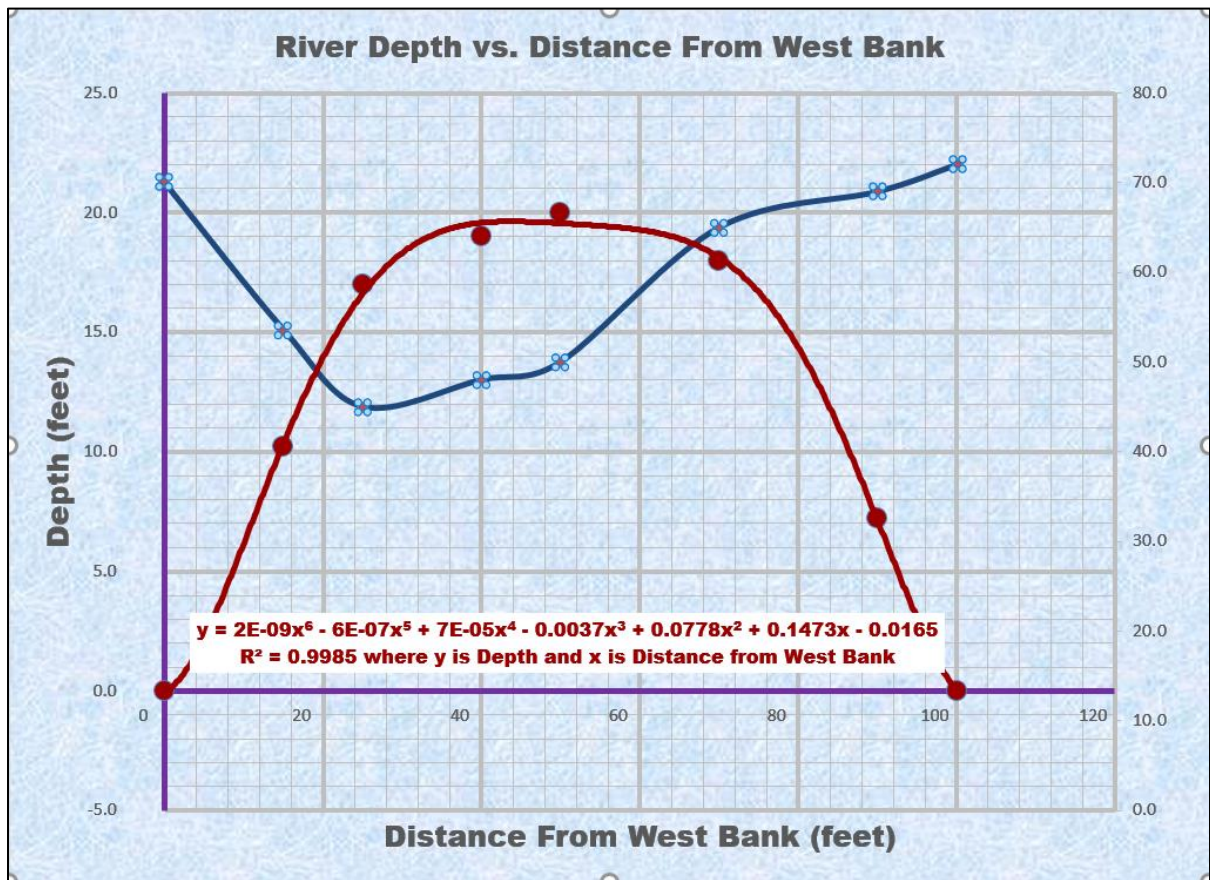
Notice the graph types have automatically changed. Use the arrows to select **Scatter** for the **Depth** and **Scatter with smooth line and markers** for the **Temperature**.

Series Name	Chart Type	Secondary Axis
Depth	Scatter	<input type="checkbox"/>
Temperature	Scatter with Smooth Lines...	<input checked="" type="checkbox"/>


4. Click **OK**.
5. On the **Chart Format** tab, in the **Current Selection** group select Series "Temperature" and click Format Selection.

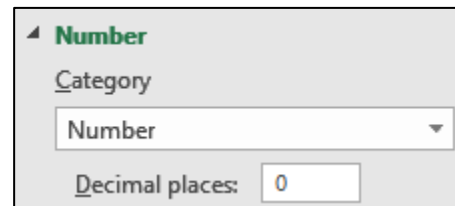
Mac: Continue with **Step 6** below.

6. Click the paint bucket, change the line color to **blue** and the **Width** to 3 pt.



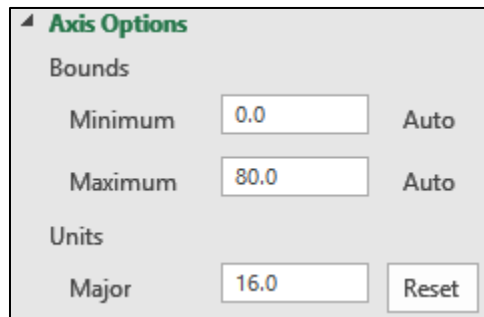
- I. Format the vertical and horizontal axes as follows:

- On the **Chart Format** tab, in the **Current Selection** group, select **Vertical (Value) Axis**, and click **Format Selection**.
- In the **Format Axis** pane on the right, click the **Axis Options** icon .
- If necessary, click the triangle to the left of **Axis Options** to open its menu. If necessary, under **Bounds**, change the **Minimum** to **0** and the **Maximum** to **25**.
- If necessary, click the triangle to the left of **Number** to open its menu.
- Under **Category**, select **Number** from the drop-down menu and set the number of decimal places to **0**.
- Format the vertical axis numbers to **dark red 10 pt Arial Black**.
- Repeat this process to change the **Horizontal (Value) Axis Minimum** to **0** and **Maximum** to **100**. Also, under **Number** change the **Category** to **Number** with **0** decimal places. Format the axis numbers to **10 pt Arial Black**. Leave the color as is.



8. Repeat this process to change the **Secondary Vertical (Value) Axis Minimum** to **0** and **Maximum** to **80**. Also, under **Number** change the **Category** to **Number** with **0** decimal places. Format the secondary vertical axis numbers to **blue 10 pt Arial Black**.

Notice that the right scale numbers shown do not line up with the major gridlines. It will make the graph look better if those numbers were to line up with the major gridlines. Since the right vertical axis scale goes from 0 to 80 and there are 5 major gridlines, divide 80 by 5 to get 16. So, change the **Major Units** to **16**.



Axis Options

Bounds

Minimum: 0.0 Auto

Maximum: 80.0 Auto

Units

Major: 16.0 Reset

9. Click the **Green Cross** to open the **Chart Elements** menu, click the triangle to the right of **Axis Titles**, and put a check next to **Secondary Vertical**.

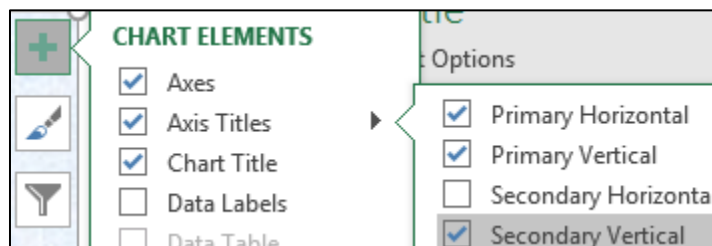



CHART ELEMENTS

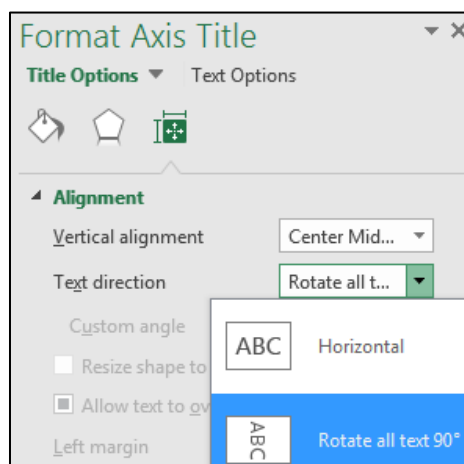
- ☒ Axes
- ☒ Axis Titles
- ☒ Chart Title
- ☐ Data Labels
- ☐ Data Table

Axis Titles Options

- ☒ Primary Horizontal
- ☒ Primary Vertical
- ☐ Secondary Horizontal
- ☒ Secondary Vertical

10. Click the **Secondary (Right) Vertical Axis** title and type **Bottom Temperature (deg F)**. Make the font blue 14 pt Arial Black.

11. With the **Right Vertical Axis** title selected, click the **Size and Properties** icon  and, under **Alignment Text direction**, select **Rotate all text 90°**.



Format Axis Title

Title Options Text Options

Alignment

Vertical alignment: Center Mid...

Text direction: Rotate all t...

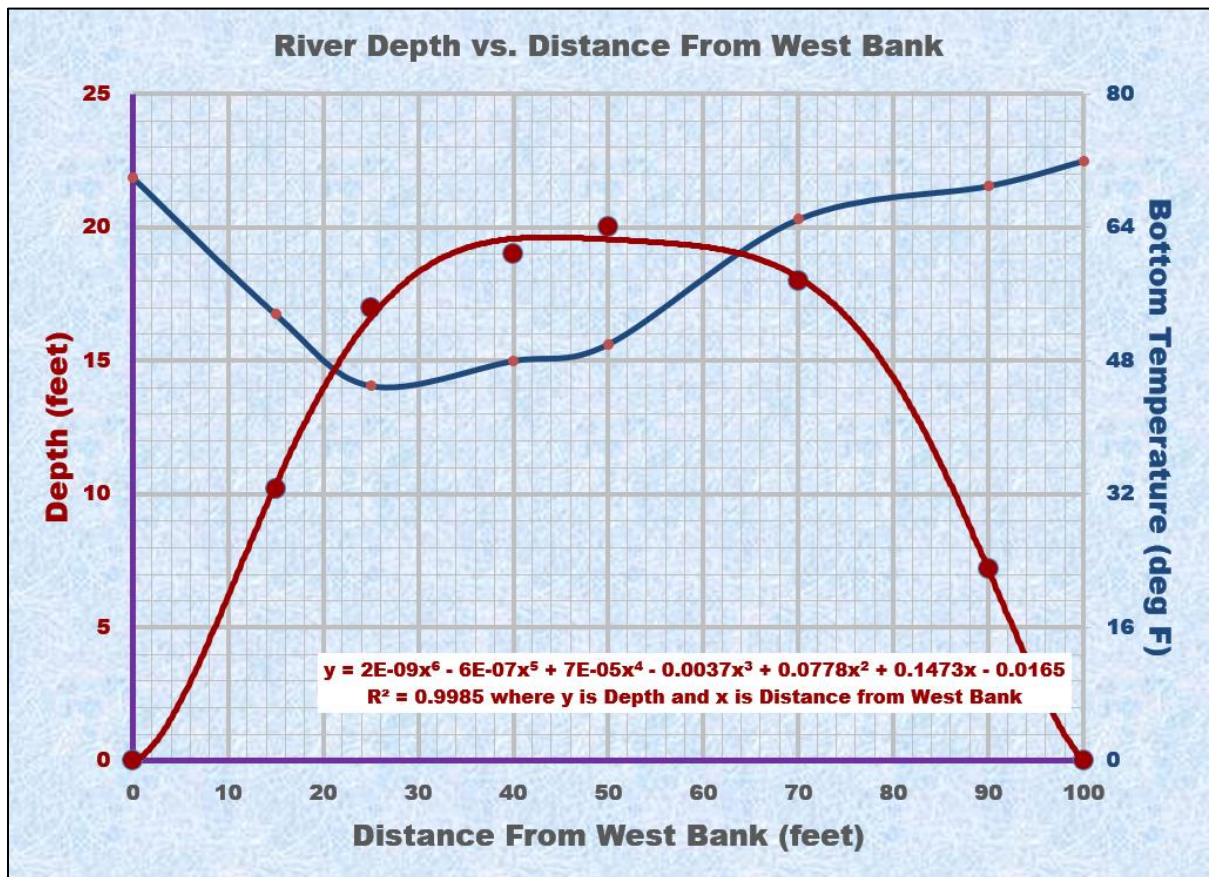
Custom angle: ABC Horizontal

☐ Resize shape to

☐ Allow text to go

Left margin: ABC Rotate all text 90°

12. Make the left vertical axis title **Depth (feet)** dark red.



The two graphs show that the depth and temperature are inversely related. That is, as you go from the shore to the middle of the river the depth increases while the temperature decreases.

- m. Color code the graphs, equation, and labels to make it easier to distinguish them by doing the following:

1. Click the title and change it to **River Depth and Bottom Temperature vs. Distance From West Bank**.
2. In the title, select the word **Depth** and make its color **dark red**.

Mac: I don't think you can change individual words on a **Mac** so skip it.

3. In the title, select the **Bottom Temperature** and make its color **blue**.
 4. Center the equation textbox just above the horizontal axis.
- n. Set up the **River Depth and Temp Chart** chartsheet to print in **Landscape** orientation and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook, and close it.

HW05-2 Loans IF

Problem: How can you determine if a loan payment is overdue?

The worksheet you develop for this problem will determine if a loan payment is more than 30 days past due and, if so, it will calculate the number of days it is overdue. This project and the next two will give you more experience in working with the **IF** function, which you used to calculate regular and overtime pay on page **SG67**.

- Open the workbook **HW05-2 Loans IF Original**, which is one of the files you downloaded at the start of the term.
- Save the workbook using the name **HW05-2 HWID Loans IF Done**
- As you did on page **SG70**, create a named range for cell **B3**. Call it **Today**.
- For cells **D7:D10**, construct a formula that uses the **IF** function to display the word **OVERDUE** if the payment is more than 30 days overdue. Here is the form:

=IF(logical test, value if true, value if false)

To help you write the **IF** function, consider the following three parts:

Logical test — how will Excel choose between the two possibilities (to display the word **OVERDUE** or to display a blank)? The difference of **Today's Date** and the **Due Date** must be greater than 30. Write this inequality as you would in algebra using cell references instead of variables.

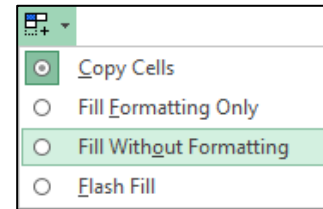
Value if true — if the **Logical test** is **true**, what should be displayed? You want to display the word **OVERDUE**. You must put **OVERDUE** inside quotation marks or Excel will think it is a special function or a named range (see page **SG70**) and not know what to do with it.

Value if false — if the **Logical test** is **false**, what should be displayed? You want to display a blank so you must type two sets of double quotation marks next to each other, like this **""**. This is called a **null string** since it contains nothing (it is null).

In the space below, write the **IF** statement for **D7**:

logical test (condition)	display if condition TRUE	display if condition FALSE
=IF(,	 ,)
is difference in dates more than 30?	the word "OVERDUE"	"" (null string)

- Once you have constructed the formula, type it in **D7** and then fill down to **D10**. After you fill, be sure to click the arrow on the **Auto Fill Options** button and select **Fill Without Formatting** to preserve the original formatting of the cells. If you do not, the bottom border of **D10** will be incorrect.



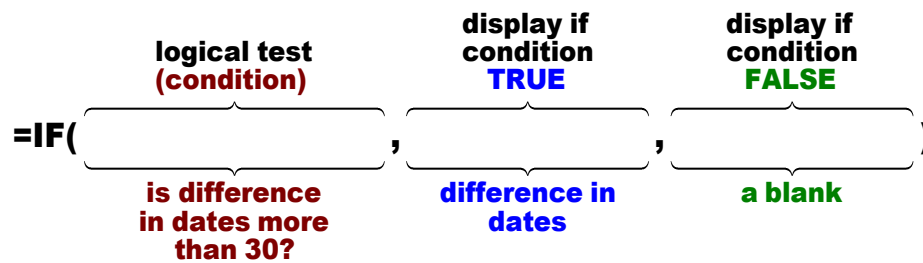
D10	:	✕	✓	<i>f_x</i>	=IF(B6-B10>30,"OVERDUE","")
	A	B	C	D	E
1	Loan Payments				
2					
3	Today's Date: 13 Jul 2021				
4				More than 30 days overdue	Number of days overdue
5					
6	Loan	Due Date	Amount		
7	Boat	11 Jun 2021	\$450.00	OVERDUE	
8	Car	30 Jun 2021	\$520.00		
9	Home	04 Jul 2021	\$980.00		
10	Student	24 May 2021	\$300.00	#VALUE!	

Notice the **#VALUE!** error in **D10**. When you filled down the formula, Excel changed the row numbers in the formula one at a time. That is, **B7** became **B8**, and then **B8** became **B9**, and so on. That is what you want. However, Excel also changed **B3** to **B4**, and then **B4** to **B5** and so on. That is **NOT** what you want because **Today's Date** is in **B3** and so **B3** should remain **B3** in all the formulas.

To tell Excel to keep **B3** the same use an **absolute reference**. So, in **D7** change **B3** to **B\$3**. The **\$** to the left of **3** means to keep that row number constant (**absolute**) when you fill down. Note that you also could use **\$B\$3** but since you are not copying left or right the **B** will not change anyway.

- Correct the formula in **D7** and fill down, again preserving the formatting.
 - Check **D7**. It should display **OVERDUE** since **Today's Date**, 13 Jul 2021 is more than 30 days after the **Due Date**, 11 Jun 2021.
 - Check **D8**. It should be blank since **Today's Date**, 13 Jul 2021 is only 14 days after the **Due Date**, 30 Jun 2021.
- e. For cells **E7:E10**, construct a formula that will display the number of days the loan is overdue, if it is, or a blank, if it is not overdue. These formulas will be almost the same as the formulas in cells **D7:D10** but in place of "**OVERDUE**" have Excel calculate the actual difference in dates by subtracting them.

In the space below, write the **IF** statement for **E7**:



In your formula, use the named range **Today** rather than **B\$3**. Using a named range means you need not worry about absolute referencing and it makes the formula a bit easier to understand: **=IF(Today-B7>30,Today-B7,"")** The value in **E7** should be 32.

Fill the formula in **E7** down to **E10** and preserve the format.

- f. Set up the **Loan Data** worksheet to print in **Landscape** orientation, all on **one page, centered horizontally** but not vertically, and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook, and close it.

HW05-3 Rent IF

Problem: How can you determine which of two rates should be applied to rental properties?

The worksheet you develop for this problem will determine the payment that is due for renting floor space in a mall. In this situation, there are two possible rates: a low, introductory rate of \$5.00 per square foot for clients that have been renting for under a year, and a regular rate of \$9.00 per square foot for older clients. To make the formulas easier to understand, you will use several named ranges.

- a. Open the workbook **HW05-3 Rent IF Original**, which is one of the files you downloaded at the start of the term.
- b. Save the workbook as **HW05-3 HWID Rent IF Done**
- c. In order to make the formulas easier to read, create several named ranges by doing the following:
 1. Click **B3** and create a named range called **Today**. A quick way to do this is to click **B3** and then type **Today** in the name box (on the left side of the formula bar) and tap **Enter**.
 2. Click **B6** and create a named range called **NormRateB**.
 3. Click **B7** and create a named range called **IntroRateB**.
 4. Create a named range called **Space** for **B10:B20**. This is similar to creating a single cell named range except that you first select several cells.



5. Create a named range called **PayDue** for **D10:D20**.
6. On the **Formulas** tab, in the **Defined Names** group, click **Name Manager**. You will see listed the named ranges you just created.

[illegible]

Click **Close** to close the **Name Manager** dialog box.

- d. For cells **D10:D20**, construct a formula that displays the payment for renting floor space. The condition in the **IF** function should test to see if the difference of **Today's Date** and the **Initial Date** is greater than 365 (that is, one year). If it is, the payment is calculated by multiplying the **Floor Space** by the **Normal Rate** (in **B6**); otherwise, the payment is calculated by multiplying the **Floor Space** by the **Introductory Rate** (in **B7**).

To help you write the **IF** function, consider the following three parts:

Logical test — how will Excel choose between the two possibilities (what criteria will Excel use to choose between the formula that uses the **Normal Rate** or the **Introductory Rate**)?

Value if true — if the **Logical test** is true, what should be displayed (which formula should be used)?

Value if false — if the **Logical test** is false, what should be displayed (which formula should be used)?

In the space below, write the **IF** statement for **D10**:

=IF(**,** **,** **)**

logical test (condition) **display if condition TRUE** **display if condition FALSE**

is difference in dates more than 365? **Floor Space times Normal Rate** **Floor Space Times Introductory Rate**

1. Once you have constructed the formula, type it into **D10**. Use the named ranges in your formula. If you do not use the names ranges, then you must use absolute references (the **\$**) where appropriate.²²

²² =IF(Today-C10>365,B10*NormRateB,B10*IntroRateB) or =IF(B\$3-C10>365,B10*B\$6,B10*B7)

2. Check **D10**. The **Initial Date**, 10 Oct 2015 is more than 365 days from **Today's Date**, 11 July 2022, so the payment should use the **Normal Rate**: $9 \times 5000 = 45000$.
 3. If your formula displays 45000, fill it down to **D20**. Otherwise, fix it. After you fill, be sure to click the arrow on the **Auto Fill Options** button and select **Fill Without Formatting** to preserve the original formatting of the cells. If you do not, the bottom border of **D20** will be incorrect.
 4. Check the value in **D11**. The difference between **Today's Date** and the **Initial Date** is less than 365 so the **Introductory Rate** should be used: $5 \times 1500 = 7500$. If that does not check, look at your formula. Did you put in absolute referencing for the cells that should not change (**B3**, **B6**, and **B7**)? If you used the name ranges for these cells, then the absolute referencing is automatic. If you used the cell reference, such as **B3**, then you must add a \$ between the **B** and the **3** to indicate that the **3** is to remain constant (absolute) when you fill down. In that case, the cell reference would be **B\$3**.
 5. Format the dollar amounts in **D10:D20** as currency with two decimal places and the dollar sign (e.g., **\$45,000.00**).
- e. The rates in **B6** and **B7** are given using dollars per square **foot** rather than dollars per square **meter**. The U.S., Liberia, and Myanmar are the only countries in the world that still use the antiquated British Imperial measurement system. All other countries use the Metric system ²³.

Use the **CONVERT** function to see what the Metric values of the rates are. This function has the form: **CONVERT(number,from_unit,to_unit)**. The **from_unit** and **to_unit** are codes that Excel requires. For example, the square foot code is "**ft2**" and the square meter code is "**m2**". ²⁴ Do the following:

1. In cell **C6**, type **=NormRateB/convert(1,"ft2","m2")**. Here, the normal rate in **B6** is divided by the conversion of one square foot to square meters.

	C
5	Metric System
6	96.87519375
7	53.81955208

2. Enter a similar formula in **C7**.

- f. Apply some custom formats to several cells by doing the following:
1. Select cells **B6:B7**, right-click **B6**, select **Format Cells**, click the **Number** tab, and click **Custom**. The shortcut for displaying **Format Cells** is **Ctrl + 1**.

²³ The Metric System of measurement was developed in the 1790's in France. The official name for this system today is the International System of Units (SI). Although most U.S. citizens are ignorant of this system, it is used by many institutions in the U.S. including science, medicine, electronics, the military, automobile production and repair, and international affairs. Thomas Jefferson was the one who decided to use the British system. The U.S. does not convert because it would cost a lot of money in the short term, although it would save a lot more money in the long term.

²⁴ To see a list of **CONVERT** codes, tap **F1** and type **convert** in the search box.

2. Change the text in the **Type** box to **\$#.00" per sq. ft."** (the quotation marks are needed) and then click **OK**.

\$ says to display the dollar sign.

#.00 is a place holder that says to display the number, rounded to two decimal places.

" per sq. ft." says to display the text between the quotation marks exactly as it is shown.


3. Select cells **C6:C7** and follow the same procedure to apply this custom format: **\$#.00" per sq. m.** Cell **C6** should display **\$96.88 per sq. m.**

4. Select cells **B10:B20** and follow the same procedure to apply this custom format: **#,###" sq. ft."** Cell **B10** should display **5,000 sq. ft.**

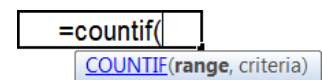
#,### says to display the number with a comma if the number is over one thousand.

" sq. ft." says to display text between quotation marks exactly as it is shown.

- i. In **D21**, insert a formula that uses a named range and calculates the **Total Payment Due** for all companies by doing the following:
 1. In **D21**, use the **SUM** function to find the sum of all payments due. To do that, type **=sum(paydue)** and tap **Enter**.
 2. Format the dollar amount in **D21** as currency with two decimal places and the dollar sign.
- j. Set up a conditional format so that the rows of the companies whose payments are less than \$8,000 have a light orange fill. To do that, Select **A10:D20** since that is where you want the formatting to appear. On the **Home** tab, in the **Styles** group, click **Conditional Formatting, New Rule, Use a formula**, and type **=d10<8000**. Note the use of the dollar sign to indicate an absolute reference. Finally, click **Format, Fill** and choose light orange.

Mac: Click the **plus sign** inside a box  in lower left corner. From **Style** select **Classic**.

- k. In **D23**, enter a formula that displays the number of payments that are less than \$8,000. Here, you are counting something so use the **COUNTIF** function. If you forget the form, type **=countif(** and a **ScreenTip** will remind you. If you have an internet connection, you can click the underlined blue **COUNTIF** for a more extensive explanation.



1. Type your formula. Remember to use quotation marks around the condition.
2. Check your answer. The second and third payments are less than \$8,000 so the number should be 2.
3. Format the value as a number with zero decimal places.

- l. In **D24**, display the sum of the payments that are less than \$8,000.
 1. Type your formula. Here, you are finding a sum so use the **SUMIFS** function.²⁶
 2. Check your answer. The second and third payments are less than \$8,000 (these should be highlighted in light orange). So, the sum should be \$7,500 + \$7,200 = \$14,700.
 3. Format the value as currency with two decimal places and the dollar sign.
- m. In **D25**, display the sum of payments where the floor space is less than 2,200.
 1. Type your formula. Here, you are finding a sum so use the **SUMIFS** function. Note that the **range** where the **criterion** is checked (**B10:B20**) is different from the **sum_range** that you will sum (**D10:D20**).²⁷
 2. Check the result. The second, third, and fourth floor spaces are less than 2,200 so the sum of the payments for those should be \$7,500 + \$7,200 + \$10,000 = \$24,700.
 3. Format the value as currency with two decimal places and the dollar sign.
 4. Left align cells **D23:D25**.
- n. Set up a conditional format to highlight with yellow fill the rows of the companies whose payments are over the average of all the payments.²⁸
A quick way to check that what you have is correct, is to select **D10:D20** and look at the status bar at the bottom of the window.

Average: \$70,209.09	Count: 11	Sum: \$772,300.00
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This shows the average of the selected cells is **\$70,209.09**. A quick glance at the **Payments Due** confirms that **Cub**, **Gertins**, and **Menards** have **Payments Due** over this amount while all the other companies do not.

- o. Remove the words inside parentheses in column **A**. To do this quickly, use Excel's **Find and Replace** feature and wildcards. Wildcards are symbols that take the place of one or several characters. Do the following:
 1. Select **A10:A20**.
 2. Tap **Ctrl + h** (**Shift + Command + h** on **Mac**) to open the **Find and Replace** dialog box.

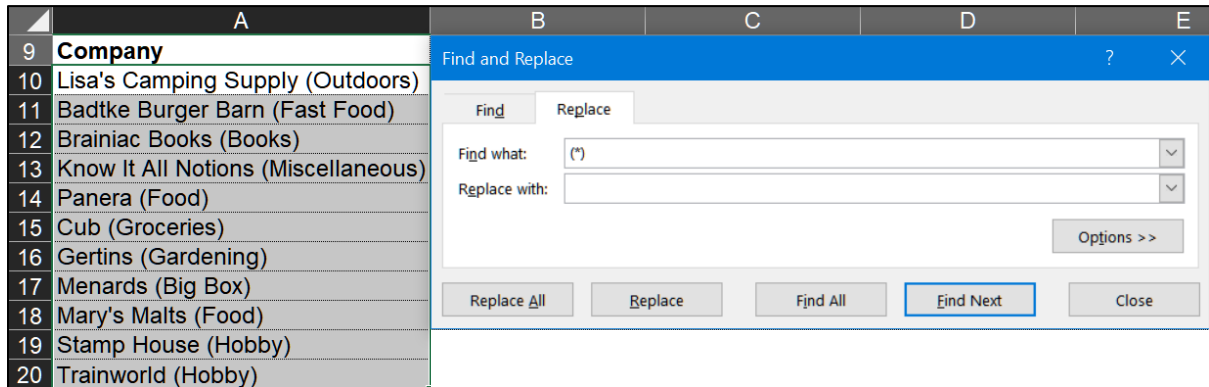
The **Find what** box tells Excel what you are looking for. If you were to enter **(Outdoors)** and click the **Find Next** button, Excel would highlight cell **A10**. You could then delete **(Outdoors)**. Don't do this because you want to delete ALL instances of words and their surrounding parentheses in **A10:A20**.

²⁶ =SUMIFS(PayDue,PayDue,"<8000") For the condition, you could also use "<\$8,000"

²⁷ =SUMIFS(PayDue,Space,"<2200") Note how the use of named ranges makes this formula easier to understand..

²⁸ Select **A10:F20** since that is where you want the formatting to appear. Click **Conditional Formatting**, **New Rule**, **Use a formula**, and type =d\$10>average(\$d\$10:\$d\$20) Note the use of the dollar signs to indicate absolute references. Finally, click **Format**, **Fill**.

3. In the **Find what** box, type (*). The asterisk * is a wildcard that takes the place of ANY string of characters. Leave the **Replace with** box empty because you want to replace the parentheses and characters with nothing; that is, you want to delete them.



4. Click the **Replace All** button. Excel tells you it has made 11 replacements. Click **OK**. All the parentheses and words inside them are deleted.
5. Close the **Find and Replace** dialog box.

The two most useful wildcards in Excel are the asterisk and the question mark.²⁹

* **asterisk** represents any number of characters. For example

ch* matches any text string that begins with **ch** such as **Charles**, **check**, and **chess**.

***ch** matches any text string that ends with **ch** such as **March**, **inch**, and **fetch**.

ch matches any text string that contains **ch** in any position such as **Chad**, **headache**, and **arch**.

? **question mark** represents any single character. For example:

pri?e matches **price**, **pride**, and **prize**.

???-??? matches any string containing 2 groups of 3 characters separated with a hyphen such as **ABC-DEF**, **ABC-123**, and **111-222**.

- p. Set up the **Rent IF Data** worksheet to print in **Landscape** orientation, all on **one page**, **centered horizontally** but not vertically and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook and close it.

HW05-4 Commission IF

Problem: How can you determine an employee's commission, total pay, and target pay based on their sales record?

- a. Open the workbook **HW05-4 Commission IF Original**, which is one of the files you downloaded at the start of the term.

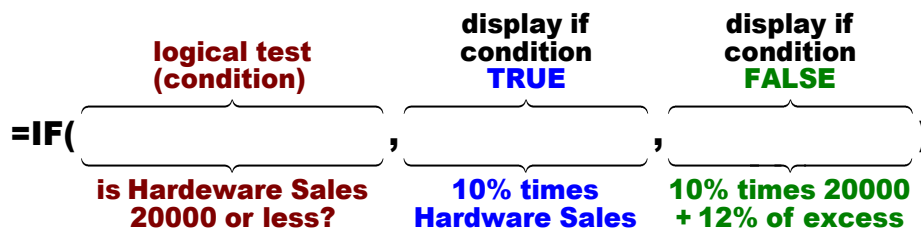
²⁹ This information is from <https://www.ablebits.com/office-addins-blog/2020/10/14/excel-wildcard-find-replace-filter-formulas/>. It has lots more information on wildcards.

- b. Save the workbook using the name **HW05-4 HWID Commission IF Done**
- c. In **D4**, enter a formula that will calculate Sherri's hardware commission. Use the following rules to construct the formula:

- If an employee sells up to \$20,000 worth of hardware, she earns a hardware commission of 10% of her hardware sales. For example, Mary will earn 10% of \$13,500, which is \$1,350.
- If an employee sells more than \$20,000 worth of hardware, she earns a hardware commission of 10% of \$20,000 plus 12% of the amount that her hardware sales were over \$20,000. For example, Sherri will earn 10% of \$20,000 plus 12% of \$3,000, which is $\$2,000 + \$360 = \$2,360$.

Basically, you want to use the **IF** function to select between two formulas: one that calculates the commission if the hardware sales are \$20,000 or less and the other if the sales are over \$20,000. This commission problem is similar to the overtime pay problem described in **Project HW03-4** on page **SG66**.

In the space below, write the **IF** statement for **D4**. To find the sales over \$20,000, subtract 20000 from the **Hardware Sales** (so Sherri would be 3000). Be sure to put that in parentheses so Excel does the subtraction before the multiplication by 12%.



1. Type the formula in **D4** and tap **Enter**. Do you need to use absolute or relative references. Absolute, which uses the \$, says to NOT change any row numbers when you fill down. Relative says to change row numbers.
 2. Check the result. Sherri's Hardware Sales were 23000. So, her commission should be $10\% \times 20000 + 12\% \times 3000 = 2360$.
 3. Fill **D4** down to row **80**. Check the result for Mary in **D5**. Her Hardware Sales were 13500 so her commission should be $10\% \times 13500 = 1350$.
- d. Click **E4** and enter an Excel formula to calculate the software commission. An employee earns 8% on software sales. You do not need an **IF** function here because there is no decision to be made—every software commission is calculated in the same way.
- e. Click **F4** and enter an Excel formula to calculate the total commission (the sum of the **Hardware Commission** and the **Software Commission**).

- f. Click **G4** and enter an Excel formula to calculate the **Total Earnings** for Sherri. Employees earn a base salary plus their **Total Commission**. The base salary is calculated as follows:

\$10,000 if the **Total Commission** is \$1,200 or less;

\$11,000 if the **Total Commission** is between \$1,200 and \$1,400;

\$12,000 if the **Total Commission** is \$1,400 or over.

Follow the directions below to do this calculation using “nested” **IF** formulas. You use nested **IF** logic in your daily life. For example, when you approach a traffic signal while driving your car:

IF green light **THEN** keep going, **ELSE**

IF red light **THEN** stop **ELSE**

the light is yellow so speed up or slow down depending on how far you are from the light.

For this problem the logic will go like this:

IF Total Commission <= 1200 **THEN** 10000 + **Total Commission** **ELSE**

IF Total Commission < 1400 **THEN** 11000 + **Total Commission** **ELSE**

12000 + **Total Commission**

When you write your Excel formula, you will use the cell reference for **Total Commission** (**F4** for Sherri) rather than the words, and commas instead of **THEN** and **ELSE**. If your version of Excel has the **IFS** function you could use that instead of nested **IF**, but the logic will be the same.

Do the following:

1. Type your formula in **G4** and tap **Enter**. Do **NOT** put commas in the numbers in the formula. Excel considers commas delimiters (separators) between parts of a formula and will give you an error message.

=IF (**THEN** **ELSE** (**THEN** **ELSE**))

F4<=1200 , **10000+F4** , IF (**F4<1400** , **11000+F4** , **12000+F4**)

Condition 1 **Condition 2**

Here is the formula using **IFS**:

Default value is 12000 + F4

=IFS (**THEN** **ELSE** **THEN** **ELSE** **THEN**)

F4<=1200 , **10000+F4** , **F4<1400** , **11000+F4** , **F4>=1400** , **12000+F4**

Condition 1 **Condition 2** **Condition 3**

2. Check the result. Sherri's **Total Commission** is 2,424. Since this is over 1,400 her base will be 12,000. So, her **Total Earnings** should be 12,000 + 2,424, which is 14,424.

3. Fill E4:G4 down to row 80.

Check the result for Mary in **G5**. Her **Total Commission** is 1,390, which is between 1,200 and 1,400, so her base is 11,000. Her **Total Earnings** should be 11,000 + 1,390, which is 12,390.

Check the result for Monica in **G8**. Her **Total Commission** is 970.24, which is less than 1,200, so her base is 10,000. Her **Total Earnings** should be 10,000 + 970.24, which is 10,970.24.

- g. In cells **B81:G81**, enter formulas for the **Totals** of columns **B:G**.
- h. In cells **B82:G82**, enter the formulas for the **Averages** of columns **B:G**.
- i. Perform a **Goal Seek** for Lawrence to see what his **Hardware Sales** would have to be to make his **Total Earnings** \$15,000 (**Data, Forecast, What-If, Goal Seek**). The answer is \$28,200.00

Click **B6** and insert a note that says **Used Goal Seek here** (right-click, **New Note**).

5	Mary	\$	13,500.00	\$	500
6	Lawrence	\$	28,200.00	Douglas F. Robertson: Used Goal Seek here.	
7	Brady	\$	75,192.00	\$	960

- j. Set up a conditional format to highlight the high performers by making the cell fill for **Employee** names yellow if their **Total Earnings** is over \$20,000.³⁰
- k. Split the worksheet below row **10** (**View, Split**) and adjust things so you can see the top and bottom rows.

³⁰ Select **A4:A80** since that is where you want the formatting to appear. Click **Conditional Formatting, New Rule, Use a formula to determine which cells to format, =G4>20000, Format, Fill**.

I. Format the worksheet so that it looks like the following:

	A	B	C	D	E	F	G
1	<i>MicroMania, Inc., Sales and Earnings Summary</i>						
2							
3	Employee	Hardware Sales	Software Sales	Hardware Commission	Software Commission	Total Commission	Total Earnings
4	Sherri	\$ 23,000.00	\$ 800.00	\$ 2,360.00	\$ 64.00	\$ 2,424.00	\$ 14,424.00
5	Mary	\$ 13,500.00	\$ 500.00	\$ 1,350.00	\$ 40.00	\$ 1,390.00	\$ 12,390.00
6	Lawrence	\$ 28,200.00	\$ 200.00	\$ 2,984.00	\$ 16.00	\$ 3,000.00	\$ 15,000.00
7	Brady	\$ 75,192.00	Douglas F. Robertson: Used Goal Seek here.	\$ 23.04	\$ 76.80	\$ 8,699.84	\$ 20,699.84
8	Monica	\$ 9,500.00		\$ 50.00	\$ 20.24	\$ 970.24	\$ 10,970.24
9	Jezebel	\$ 79,944.00	\$ 919.00	\$ 9,193.28	\$ 73.52	\$ 9,266.80	\$ 21,266.80
76	Marisa	\$ 25,271.00	\$ 782.00	\$ 2,632.52	\$ 62.56	\$ 2,695.08	\$ 14,695.08
77	Sean	\$ 98,630.00	\$ 810.00	\$ 11,435.60	\$ 64.80	\$ 11,500.40	\$ 23,500.40
78	Max	\$ 62,357.00	\$ 958.00	\$ 7,082.84	\$ 76.64	\$ 7,159.48	\$ 19,159.48
79	Amy	\$ 33,883.00	\$ 974.00	\$ 3,665.96	\$ 77.92	\$ 3,743.88	\$ 15,743.88
80	Jessica	\$ 58,418.00	\$ 388.00	\$ 6,610.16	\$ 31.04	\$ 6,641.20	\$ 18,641.20
81	Totals	\$ 4,050,169.00	\$ 44,539.00	\$ 456,120.06	\$ 3,563.12	\$ 459,683.18	\$ 1,378,683.18
82	Averages	\$ 52,599.60	\$ 578.43	\$ 5,923.64	\$ 46.27	\$ 5,969.91	\$ 17,904.98

There is no **AutoFormat** style that you can use to do the formatting. So, you will have to use the buttons on the **Home** tab and the **Format Cells** dialog box. For example:

- For **Row 1**, merge and center the title across the table, and make it 16 pt bold, italic.
- For **Row 3**, bold the cells. To make the text wrap where you want, use a manual line break. For example, in **B3** place the insertion point to the left of the **S** in **Sales** and tap **Alt + Enter**. This places **Sales** below **Hardware**. If it is not done automatically, wrap the text.
- **AutoFit** the columns.
- For **Row 3** through **Row 82**, use **Format Cells** and the **Border** tab to set the different border types. For the borders, be sure you select the cells whose borders you wish to set before choosing **Format Cells**. Once you are in the **Border** tab, click the style of the line you want (light line, double line, thick line) in the **Line Style** box, click where you want the line to be applied in the **Border** box, and then click **OK**.

There is a light border around most of the cells and a bold border around the entire table and between row **80** and **81**.

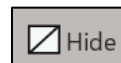
There is a double line border between rows **3** and **4**, and between columns **A** and **B**.

This will take some experimentation on your part and will help you gain familiarity with these powerful formatting features.

m. Do the following to print the worksheet:

1. Remove the split screen.
2. Hide rows **11** through **75** as you did on page **SG56**.

Do **NOT** go to the **View** tab, **Window** group, and click **Hide**.



That will hide the entire workbook! If you do that, click **Unhide** to get the window back.

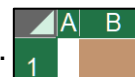


3. Set the **Print Area** to **A1:G82**.
4. Set up the **Commission IF Sales Data** worksheet to print in **Landscape** orientation, all on **one page**, **centered horizontally** but not vertically and include a footer that contains the **file name** on the left and the **sheet name** on the right. Set the note to print (**Page Layout**, **Page Setup**, **Sheet**, **Comments and notes**, **As displayed on sheet**). Compare the preview with the key. Make needed corrections, save the workbook, and close it.

HW05-5 Sorting Values

Problem: How can you create summary information on home values and then display particular values based on certain conditions?

- a. Open the workbook **HW05-5 Sorting Values Original**, which is one of the files you downloaded at the start of the term.
- b. Save the workbook using the name **HW05-5 HWID Sorting Values Done**.
- c. Freeze the pane so that rows **1** and **2** are always on the screen (select row **3**, then **View**, **Window**, **Freeze Panes**, **Freeze Panes**).
- d. Number the addresses by doing the following:
 1. In **B3**, to display the row number of the cell, type **=row()** click the **Enter** checkbox. The number **3** is displayed.
 2. Change **B3** to **=row()-2** and tap **Enter**. The number **1** is displayed. This is the first entry in the list. Later, when you sort the rows, the number **1** will remain in **B3** indicating that there is a new number **1** in the list.
 3. Fill the formula down to **B15**. You can see that there are 13 items in the list.
- e. Often, it is useful to be able to distinguish between cells that contain formulas and those that contain labels or raw data. To see how this works, do the following:
 1. Click the **Select All** triangle in the upper left corner of the worksheet.
 2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**, and select **New Rule**.



Mac: From **Style**: select **Classic**.

3. Select **Use a formula to determine which cells to format**.

4. Type this into the formula box: **=isformula(a1)**. This is true if a cell contains a formula (that is, it begins with an = sign). While the formula indicates only cell **A1**, it will apply to all the cells of the worksheet because you selected all the cells before **Conditional Formatting**.
 5. Click **Format** and set the font color to dark red.
 6. Click **OK** three times. The numbers in cells **B3:B15** now are red.
- f. Create a conditional format so that the data for homes whose **Lot Sizes** are greater than 1 will have an orange fill. If you need help, follow the steps below:
1. You want to apply the formatting to all the data so select **B3:I15**.
 2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**, select **New Rule**, and click **Use a formula to determine which cells**.
 3. Type this into the formula box: **=F3>1** This tells Excel to see if the value in **F3** (the **Lot Size** for the first home) is greater than 1. If it is, Excel will apply a special format; otherwise, the format will not change. Note the use of the \$. You need that so that Excel will always check the value in column **F** and not values in other columns.
 4. Click **Format** and set the fill to light orange.
 5. Click **OK** three times.

	A	B	C	D	E	F	G	H	I
1		Home Values							
2		Num	Address	Estimated Value	Property Tax	Lot Size (acre)	Cable TV Hookup	Small Lot with Cable	Small Lot or Cable
3		1	1457 Via Colinas	\$ 252,467	\$ 1,969.00	0.80	Yes		
4		2	1459 Via Colinas	\$ 301,582	\$ 2,352.00	1.20	Yes		
5		3	1461 Via Colinas	\$ 285,456	\$ 2,227.00	0.94	Yes		
6		4	23 Fourth Street	\$ 242,467	\$ 2,051.00	1.12	No		

- g. Create additional summary information by doing the following:
1. In **C17**, enter a formula that will display the number of houses that have a **Cable TV Hookup**. Check the result.³¹
 2. In **C18**, enter a formula that will display the number of properties that are **over one acre** in size and whose **Property Taxes** is under **\$2,100**. Check the result.³²

³¹ You are counting the number of houses based on a condition so use **=COUNTIF(G3:G15,"Yes")**

³² You are counting the number of houses based on **two** conditions so use **=COUNTIFS(F3:F15,">1",E3:E15,"<2100")**

3. In **C19**, enter a formula that will display the sum of the **Property Taxes** for lots that are over one acre.³³ Check the result. A quick way of checking is to click the **Property Tax** of home **2**, hold down the **Ctrl** key, and then click the **Property Taxes** of homes **4**, **9**, and **10**. Now, look in the bottom right corner of the window, on the **Status Bar**, and you can see the **SUM** of the selected cells is **\$8,724.00**.

Average: \$2,181.00 Count: 4 Sum: \$8,724.00

4. In **C20**, enter a formula that will display the sum of the **Estimated Value** of the properties whose **Lot Size** is over 1 and that do not have **Cable TV Hookup**. Check the result.³⁴
5. In **C21**, type **Click here to open Zillow.com to see more home values**. Click the **Enter** checkbox to keep **C21** active.
6. With **C21** still active, tap **Ctrl + k**. This is the shortcut for **Insert Hyperlink**. You can also click **Hyperlink** on the **Insert** tab.
7. Near the bottom of the **Insert Hyperlink** dialog box, in the **Address** box, type the URL for Zillow: **http://www.zillow.com/**

Address: <http://www.zillow.com/>

8. Click **OK**. The hyperlink is created and the style for the **URL** is automatically set to **Hyperlink** (underlined blue text).
9. Point to (do NOT click) **C21** to see the hyperlink.



10. Click cell **C21** and your web browser will open and take you to the web site. Just for fun, if you wish, type your home address and Zillow will show you its estimated value. Here is what you will see if you type 1600 Pennsylvania Ave NW, Washington, DC 20006. This is the White House, valued at about \$459 million. Note the 35 bathrooms!



11. Close the web browser.

³³ You are looking for a sum with certain conditions so use **=SUMIFS(E3:E15,F3:F15,">1")**

³⁴ **=SUMIFS(D3:D15,F3:F15,">1",G3:G15,"No")**

If you want to select the cell that contains the hyperlink, point to it and hold down the left mouse button for 3 seconds. That selects the cell without activating the link.

If you want to remove the link, select the cell, tap **Ctrl + k**, and then click the **Remove Link** button.

h. In Project 1 you used **Boolean Operators** when searching for files that contained specific words. Those operators, **AND**, **OR**, and **NOT** can be used in **IF** functions. To see how this works, do the following:

1. Click **H3**. You want to create a formula that will determine which homes have a **small lot AND cable TV**. To do that you can use the **AND** operator inside an **IF** formula.

Type **=if(and(f3<1,g3="Yes"),"Yes","No")** and click the **Enter** checkbox. Here, the **AND** function requires that **both** conditions be met. That is, **F3**, the **Lot Size**, must be **less than 1** and also **G3, Cable TV Hookup**, must be **Yes**. If either is not true, then the condition is not true.

Check the result. The **Lot Size** for the first home is **0.80**, which is less than **1**, **AND** the **Cable TV Hookup** is **Yes** so the result should be **Yes**.

2. Fill the formula down to row **15**. Check the result for the second home. It's **Lot Size** is **1.20**, which is greater than **1**, and the **Cable TV Hookup** is **Yes**. Since one of the two conditions is not true, the entire condition is not true and so **H4** displays **No**.

3. Click **I3**. Create a formula that determines which homes have a **small lot OR cable TV**. To do that you can use the **OR** operator inside an **IF** formula.

Type **=if(or(f3<1,g3="Yes"),"Yes","No")** and click the **Enter** checkbox.

Here, the **OR** function requires that **either** condition be met. That is, **F3**, the **Lot Size**, must be **less than 1** **OR** **G3, Cable TV Hookup**, must be **Yes**. If both are not true then the condition is not true.

Check the result. The **Lot Size** for the first home is **0.80**, which is less than **1**, and the **Cable TV Hookup** is **Yes** so, the result should be **Yes**.

4. Fill the formula down to **H15**. Check the result for the second home. It's **Lot Size** is **1.20**, which is greater than **1** so that does not match. But, the **Cable TV Hookup** is **Yes** and that does match. So, it meets at least one of the conditions and so **I4** displays **Yes**.

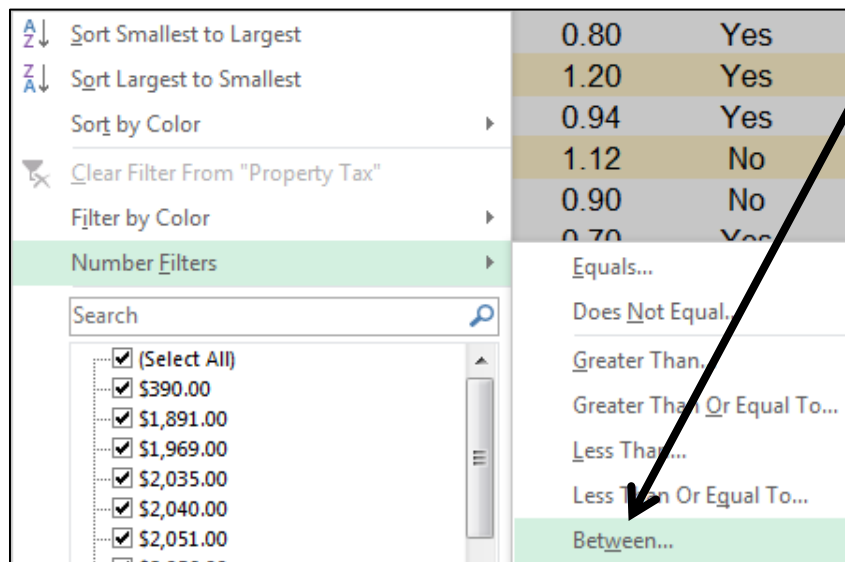
For the fourth home, the lot size is **over 1** and there is **no cable**. Since neither condition is true the entire condition is false and a blank is displayed.

- i. Do the following to filter the data in the table so that only rows with the **Property Tax** between **1500** and **2100**, inclusive, are displayed:

1. Select the range **B2:I2**
2. On the **Home** tab, in the **Editing** group, click **Sort & Filter**, and select **Filter**. This puts little upside down triangles in row 2.

	A	B	C	D	E	F	G	H	I
1		Home Values							
2		Nu	Address	Estimated Value	Property Tax	Lot Size (acre)	Cable TV Hookup	Small Lot with Cab	Small Lot or Cable
3		1	1457 Via Colinas	\$ 252,467	\$ 1,969.00	0.80	Yes	Yes	Yes

3. Click the triangle in **E2**, select **Number Filters**, and select **Between**.



4. Enter **1500** and **2100** in the **Custom Autofilter** dialog box.

Custom AutoFilter

Show rows where:

Property Tax

is greater than or equal to 1500

☒ And ☐ Or

is less than or equal to 2100

5. Click **OK**.

	A	B	C	D	E	F	G	H	I
1		Home Values							
2		Nu	Address	Estimated Value	Property Tax	Lot Size (acre)	Cable TV Hookup	Small Lot with Cab	Small Lot or Cable
3		1	1457 Via Colinas	\$ 252,467	\$ 1,969.00	0.80	Yes	Yes	Yes
6		4	23 Fourth Street	\$ 242,467	\$ 2,051.00	1.12	No	No	No
7		5	3579 Lake Avenue	\$ 252,467	\$ 2,056.00	0.90	No	No	Yes
8		6	1458 Via Colinas	\$ 260,890	\$ 2,035.00	0.70	Yes	Yes	Yes
11		9	3580 Lake Avenue	\$ 262,890	\$ 1,891.00	1.05	No	No	No
15		13	22 Fourth Street	\$ 263,578	\$ 1,969.00	0.82	Yes	Yes	Yes

- j. Add a second filter so that only rows whose **Address** has an orange fill are displayed. To do this, click the filter button in cell **C2** and select **Filter by Color** and click the orange box.



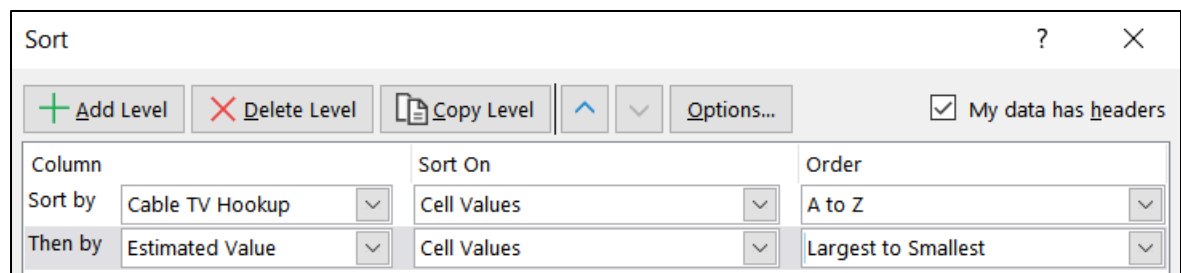
Now, the only data displayed are for those whose **Property Tax** is between **1500** and **2100**, inclusive, **AND** whose **Address** cell fill is orange (which corresponds to **Lot Size** is greater than 1).

	A	B	C	D	E	F	G	H	I
1									
2									
6		4	23 Fourth Street	\$ 242,467	\$ 2,051.00	1.12			
11		9	3580 Lake Avenue	\$ 262,890	\$ 1,891.00	1.05			

- k. Do the following to sort the data in ascending order by **Cable TV Hookup** status and then, within that, in descending order by **Estimated Value**.
1. Copy the **Values Original** worksheet and rename the new worksheet **Values Sorted**.
 2. Remove the filters so all rows show (**Home**, **Editing**, **Sort & Filter**, **Filter**).
 3. Select rows **2:15** (be sure to select the entire rows by clicking the row numbers on the left).
 4. On the **Home** tab, in the **Editing** group, click **Sort & Filter**, and then select **Custom Sort**. Be sure **My data has headers** is checked.
 5. In the **Sort by** drop-down menu, select **Cable TV Hookup** and confirm that the **Order** is **A to Z**.
 6. With the **Sort** dialog box still open, click **Add Level**.

Mac: **Add Level**, **Delete Level**, and **Copy Level** are in the lower left corner of the **Sort** dialog box.

7. In the **Then by** section select **Estimated Value** and choose **Largest to Smallest** from the drop-down menu under **Order**.



8. Click **OK**. The data are sorted by **Cable TV Hookup** with the **No's** first, and then the **Yes's**. Within the **No's**, the data are sorted by **Estimated Value** in reverse numerical order. Likewise, within the **Yes's**, the data are sorted by **Estimated Value** in reverse numerical order.

	A	B	C	D	E	F	G	H	I
1			Home Values						
2		Num	Address	Estimated Value	Property Tax	Lot Size (acre)	Cable TV Hookup	Small Lot with Cable	Small Lot or Cable
3		1	24 Fourth Street	\$ 262,990	\$ 2,430.00	1.10	No	No	No
4		2	3580 Lake Avenue	\$ 262,890	\$ 1,891.00	1.05	No	No	No
5		3	3578 Lake Avenue	\$ 261,578	\$ 2,149.00	0.80	No	No	Yes
6		4	3579 Lake Avenue	\$ 252,467	\$ 2,056.00	0.90	No	No	Yes
7		5	23 Fourth Street	\$ 242,467	\$ 2,051.00	1.12	No	No	No
8		6	25 Fourth Street	\$ 50,000	\$ 2,313.00	0.95	No	No	Yes
9		7	1459 Via Colinas	\$ 301,582	\$ 2,352.00	1.20	Yes	No	Yes
10		8	1460 Via Colinas	\$ 297,566	\$ 2,321.00	0.97	Yes	Yes	Yes
11		9	3582 Lake Avenue	\$ 296,566	\$ 390.00	0.77	Yes	Yes	Yes
12		10	1461 Via Colinas	\$ 285,456	\$ 2,227.00	0.94	Yes	Yes	Yes
13		11	22 Fourth Street	\$ 263,578	\$ 1,969.00	0.82	Yes	Yes	Yes
14		12	1458 Via Colinas	\$ 260,890	\$ 2,035.00	0.70	Yes	Yes	Yes
15		13	1457 Via Colinas	\$ 252,467	\$ 1,969.00	0.80	Yes	Yes	Yes

Notice that the **Num** column is still in order but the numbers are assigned to different houses. That is because rather than typing the numbers individually you used the **ROW()** function to have them keyed to the row number.

- i. Set up the **Values Sorted** worksheet to print in **Landscape** orientation, all on **one page, centered horizontally** but not vertically and include a footer that contains the **file name** on the left and the **sheet name** on the right. Include **row and column headings**. Compare the preview with the key. Make needed corrections, save the workbook and close it.

HW05-6 Find and Macros

Problem: How can you download data, break up the values into meaningful pieces, and use buttons to sort data and to move about a worksheet?

Before the start of each semester, I download from the University's database Excel files that contain my class lists. A typical file looks like this:

	B	C	D	E	F	G	H	I	J	K	L	
10	ID	Name	Sec	Type	Units	Grd Basis	Acad Career	Acad Level	Program	Primary Plan	Email	FERPA
11	7023072	Berg,Alex D	1	LAB	4	A-F	UGRD	Senior	CEHD	Business Ed	berg7023@umn.edu	Suppress
12	7266721	Bets,Sam A	1	LAB	4	A-F	UGRD	Senior	Design	Retail Mer	bets7266@umn.edu	
13	2106779	Biff,Timothy B	1	LAB	4	A-F	UGRD	Freshman	Design	Retail Mer		

For each student, I need to place the last name and first name in separate cells so I can access each individually. In [HW03-4 Payroll IF](#) (page [SG67](#)) you did just that by using the **Flash Fill** feature in the **Data Tools** group on the **Data** tab. That was quick and easy and is fine if you occasionally need to break up or join simple data strings. Text within a cell also can be split up by selecting the data and, on the **Data** tab, in the **Data Tools** group, clicking **Text to Columns**. Our data are too complex to use either of those. Also, every semester I have to set up a gradebook for each of the sections of courses that I teach so using either method would not be efficient.

To get around this I created Excel formulas to do the separation automatically. To see how this works, do the following.

- Open the workbook [HW05-6 Find and Macros Original](#), which is one of the files you downloaded at the start of the term. This is a simplified version of my gradebook for CI 1871 for section 1. I pasted the raw data from the U of M database into the **Server** tab. I have scrambled the names, ID's and email's to protect privacy.
- Save the workbook using the name [HW05-6 HWID Find and Macros Begin](#).
- We need to put the **Last Name** and **First Name** in separate cells, but they are in a single cell that has this structure:

Last Name, comma, First Name, space, middle initial.

ID	Name
7023072	Berg,Alex D

This means that the **Last Name** consists of the characters from the start of the name until the comma. You can use the **FIND** function to find the position of the comma and then display the letters to the left of that position.

The **FIND** function has the form: **=FIND(find text,within text)**

You are looking for the comma in the cell that has the student's name:

=FIND(what to look for, where to look)
 Looking for comma so use "," C3 has the name so use C3

To see how this works, do the following:

1. On the **Server** sheet, in **V3** type **=find(",","c3)** and click the **Enter** checkbox. For **Berg,Alex D** the comma is the 5th character from the left so **5** will be displayed. That means the last name is the first 4 characters in the string. If there had been no comma in **C3**, then **#VALUE!** would have been displayed.
2. The **First Name** consists of the characters between the comma and the space. Use **FIND** to find the position of the space.

=FIND(what to look for , where to look)
Looking for space so use "," C3 has the name so use C3

In **W3** type **=find(" ",c3)** and click the **Enter** checkbox.

For **Berg,Alex D** the space is the 10th character from the left so **10** will be displayed. If there had been no space in **C3**, then **#VALUE!** would have been displayed.

Note that the **FIND** function does not help you “find” something in a range. For that you would use one of the **LOOKUP** functions (see page **SG79**). Also, the **FIND** function is case sensitive so in the “what to look for” words like **Beans** and **beans** are considered different. To ignore case, use the **SEARCH** function.

- d. Use the **LEFT** function to display in **U3** the **Last name**. **LEFT** has the form:
=LEFT(text,num chars)

You are looking in the cell that contains the student’s name and want to display the characters up to the comma.

=LEFT(where to look , number of characters)
C3 has the name Position of comma - 1

The position of the comma is in **V3** so the number of characters for the first name is **V3 – 1**. That is, 5 - 1 = 4 for **Berg**.

In **U3** type **=left(c3,v3-1)** and click the **Enter** checkbox. Since the value in **V3** is 5, this will pick off the first 4 characters in **C3**. **Berg** will be displayed.

U3							
	U	V	W	X	Y	Z	AA
1		Scratch Area					
2	Last name	Comma	Space				
3	Berg	5	10				

- e. The **First Name** consists of the characters between the comma at position 5 and the space at position 10.

Berg,Alex D
5 ↓
First ↑
10

- i. Fill the formulas for **N3:W3** down to row **42** and preserve the formatting.

The rows that have no student data (**38 to 42**) have **#VALUE!** and zeros displayed. You will get around this problem later.

The error **#VALUE!** also appears in **N6** and **T6**. That indicates the formulas cannot be calculated. The problem is that the name in cell **C6** looks like this: **Bing Jr,William Bill**. Here, a space appears to the **left** of the comma and that means in the formula **=MID(C6,V6+1,W6-V6-1)** the **W6-V6** is a negative number and the **MID** function does not know what to do with it. You could put in more formulas to take such a situation into account, but it would make the worksheet much more complicated and since this seldom occurs it is easiest to simply change the raw data **Bing Jr** to **Bing**. Do **NOT** do that now.

This brings up the important point that unexpected errors can occur and so you should always eyeball your formula results to be sure things look OK. To make locating errors like this easier to find, set up a conditional format to make them stand out by doing the following:

1. Select the entire **Server** worksheet.
2. On the **Home** tab, in the **Styles** group, click **Conditional Formatting** and choose **New Rule**.
3. Click **Use a formula to determine which cells to format**.
4. In the box, type **=iserror(a1)** The **ISERROR** function is **TRUE** if the cell contains one of these errors: **#N/A**, **#VALUE!**, **#REF!**, **#DIV/0!**, **#NUM!**, **#NAME?** or **#NULL!**
5. Set the format so the cells with an error have an orange fill.
6. Click **OK** three times. The cells that contain **#VALUE!** are highlighted.

	M	N	O	P	Q	R	S	T	U	V	W
1											
2		Name	ID	College	Year	Major	Email	First name	Last name	Scratch Area	
3		Berg, Alex	7023072	CEHD	Senior	Business Ed	berg7023@umn.edu	Alex	Berg	5	10
4		Bets, Sam	7266721	Design	Senior	Retail Mer	bets7266@umn.edu	Sam	Bets	5	9
5		Biff, Timothy	2106779	Design	Freshman	Retail Mer	0	Timothy	Biff	5	13
6		#VALUE!	3263672	CLA	Sophomore	Undeclared	bing3263@umn.edu	#VALUE!	Bing Jr	8	5
7		Cheng, Recca	2172092	CLA	Freshman	Undeclared	chen2172@umn.edu	Recca	Cheng	6	12

7. Fix the problem for **Bing Jr,William Henry** by deleting **space Jr** in **C6**. The **#VALUE!** error disappears.
8. There is also a problem with **Tondryk,Marvin** in row **33**. Marvin has no middle name so there is no "space" for the **FIND** function to locate. Fix this by clicking **C33** and adding a space to the end of the name **Marvin**. Again, you could take care of this automatically by adding more code, but it seldom occurs so do not bother.

If you are interested, here is a fix:

=IF(ISERROR(FIND(" ",C33)), LEN(C33)+1 , FIND(" ",C33))
If no space is found THEN pretend space is at end OTHERWISE show position of space

This says if there is an error in attempting to find the space then pretend there is a space at the end of the string. Otherwise, display the location of the real space.

j. Set up the gradebook by doing the following:

1. On the **Server** worksheet, copy **N3:U37**. You are leaving off the rows that have no data and so show errors.
2. Click the **Sec 1** worksheet tab, click **B11**, and use **Paste Special** to paste the values only. To save you lots of typing, I have already entered scores for the students so you can test the formulas you will enter that calculate the **HW**, **Tot Pts**, and **Grade**.
3. **AutoFit** columns **B:K**.
4. Some students will add the course after I have downloaded the data. Add the following student, **Ben Apple**, and his data to row **46**. When you add the email address, Excel probably will convert it to a hyperlink with underlined blue text. To undo that, tap **Ctrl + z** right after moving to the next cell.

	A	B	C	D	E	F	G	H	I
46	136	Apple, Ben	1233212	CEHD	Freshman	Business Ed	appl1234@umn.edu	Ben	Apple

5. Like the **Server** worksheet, the **Sec 1** worksheet has both raw data and formulas. As you did on page **SG147**, set up a conditional format that uses **ISFORMULA** to make the font **red** for all cells that contain formulas.
- k. This workbook is larger than can fit on a single screen. Do the following to freeze the panes so that the column headings (row **10**) and the student names (column **B**) are always visible.
1. Click **C11**. When you apply **Freeze Panes** the rows above 11 and the columns to the left of C will be frozen.
 2. On the **View** tab, in the **Window** group, click **Freeze Panes** and select **Freeze Panes**.

- To see how freeze panes works, scroll horizontally and vertically until the screen looks like the following. Freeze lines are indicated by the vertical line just to the right of column **B** and the horizontal line just below row **10**.

	A	B	AG	AH	AI
1	CI 1871 sec 1, Professor Rot				
2					
3					
4					
5					
6					
7					
8					
9					
10	HWID	Name	HW	Tot Pts	Grade
45	135	Yang, Bryan			
46	136	Apple, Ben			
47	137				

Vertical Freeze Line

Horizontal Freeze Line

- In **AG11**, enter a formula that will calculate the score for homework, rounded to the nearest whole number. A student's homework score is the sum of the student's scores divided by the sum of the points possible for each homework project, and then multiplied by 100. That is, for **AG11**

$$\text{HW} = \frac{\text{sum of R11 through AF11}}{\text{sum of R9 through AF9}} * 100$$

Written in Excel code this is **=SUM(R11:AF11)/SUM(\$R\$9:\$AF\$9)*100**

Notice the use of the absolute references (the \$ signs) in the denominator. Those are needed so that when the formula is filled down the data in row **9** are always used in the denominator.

- Type the formula in **AG11**. The result is **96.203**.
- To round off the homework score to a whole number, use the **ROUND** function, which has the form:

=ROUND(number,num digits)

You want to **round SUM(R11:AF11)/SUM(\$R\$9:\$AF\$9)*100** to **0** digits:

=ROUND(SUM(R11:AF11)/SUM(\$R\$9:\$AF\$9)*100,0)

Modify the formula in **AG11**. The result is **96**.

- If a student name is blank, you want a blank displayed rather than a 0. Use an **IF** function to do that. That is, if the name in **B11** is blank, display a blank, which is called a null string. It is two double quotes "" Otherwise, display the results of the formula.

=IF(B11="", "", ROUND(SUM(R11:AF11)/SUM(\$R\$9:\$AF\$9)*100,0))

Modify the formula in **AG11**.

4. Fill the formula down to row **50** and preserve the format. As a result of the **IF** formula, cells **AG47:AG50** are blank.

Think about how this formula was constructed. It was built up in three steps. That is a good technique to use when constructing complicated formulas. If you find a formula is incorrect, you can reverse the process – that is, remove parts one at a time until you see where the error occurred.

- m. Calculate the total points and letter grade for each student by doing the following:

Total points is calculated using weightings of **35% for the Excel exam**, **20% for the Word exam**, **10% for the PowerPoint exam**, and **35% for the homework score**. That is:

$$\text{Total points} = 35\% * \text{Excel exam score} + 20\% * \text{Word exam score} + 10\% * \text{PowerPoint exam score} + 35\% * \text{Homework score}$$

The weights for the exams are listed in **O5:Q5** and the weight for the homework is in **AG9**. The Excel code will use those cell references along with the cell references of the individual scores. Type the following in **AG9**. Notice the use of absolute references (the **\$**) on the cells that contain the percentage weightings:

$$= (\underbrace{\$O\$5 * O11}_{\text{Excel}} + \underbrace{\$P\$5 * P11}_{\text{Word}} + \underbrace{\$Q\$5 * Q11}_{\text{PowerPoint}} + \underbrace{\$AG\$9 * AG11}_{\text{Homework}}) / \underbrace{100}_{\substack{\text{Converts} \\ \text{to a} \\ \text{percent}}}$$

1. Enter your formula in **AH11**. The answer should be **86.75**.
2. Add **ROUND** and **IF** functions as you did for the homework score and type your formula in cell **AG11**.³⁶ **Be sure to read footnotes**
3. In **AI11**, enter a formula that will display the letter grade based on the total points in **AH11** and the table of points and letter grades in **U1:AE2**. You are looking up a letter grade in a horizontal table so use **HLOOKUP** or **XLOOKUP**. Remember to use absolute references, **\$**, where appropriate.
4. Use an **IF** function to display a blank if the student name is blank.³⁷
5. Fill the formulas in **AH11:AI11** down to row **50** and preserve the formatting.

³⁶ =IF(B11="", "", ROUND((\$O\$5*O11+\$P\$5*P11+\$Q\$5*Q11+\$AG\$9*AG11)/100,0))

³⁷ =IF(B11="", "", HLOOKUP(AH11,\$U\$1:\$AE\$2,2)) or
=IF(B11="", "", XLOOKUP(AH11,\$U\$1:AE1,\$U\$2:\$AE\$2,"Not Found",-1))

- n. If a student registers for a class, and then drops, instructors are required to keep their name in the gradebook and record a grade code of either **NOL** or **W**.

NOL stands for **Not On List**. This is for students who drop before week 3 of the semester. In that case, the course will not appear on their transcript.

W stands for **Withdraw**. This is for students who drop after week two of the semester. In that case, the course will appear on their transcript with a grade of **W**.

It helps to keep track of such students by using a conditional format to gray fill the cells that contain their data. Do the following:

1. In **K14** enter **NOL** and in **K15** enter **W** so you can see if your conditional format works properly.
2. Select **A11:AI50**. A quick way of doing that is to type **A11:AI50** in the name box.
3. On the **Home** tab, in the **Styles** group, click **Conditional Formatting**, select **New Rule**, and click **Use a formula to determine which cells to format**.
4. Enter a formula that will be true if **K11** is either **NOL** or **W**. Since there are two conditions, use the **OR** function to make the cells have a gray fill if **either** condition is true.

The formula is **=or(\$k11="NOL",\$k11="W")**

Note that a **\$** is needed to the left of **K11** to ensure that Excel only checks column **K**, where the grade code is located. If you leave off the **\$** the formula will still work but only the cells in column **A** will be shaded.

5. Set the format to gray fill and then click **OK** twice.
- o. There are some operations that you have to do repeatedly within a workbook. For example, in my gradebook I sometimes need student names in alphabetical order, such as when I check registrations and submit my final grades, while other times I need the names in HWID order, such as when I insert scores from the paper grader. Since I do these two types of sorts many times throughout the semester for each of my gradebooks, I have constructed **macros** so I can do the sorts with a single mouse click. A **macro** is a small app (set of commands) that you can have Excel carry out with a single mouse click or keystroke. While very useful, macros have the potential to completely mess up a worksheet, so it is a good idea to make a backup copy of the workbook before constructing macros.
1. Tap **Ctrl + s** to save your workbook. This is a good idea when working with macros because they can really mess up things if done improperly. If that happens, just close the workbook without saving and try again.

To see how macros work, do the following:

2. If the **Developer** tab is not showing, click the **File** tab, click **Options**, click **Customize Ribbon**.

Mac: Click **Excel, Preferences, Ribbon & Toolbar**.

Down on the right, put a check in the box next to **Developer**. Then, click **OK**. The new **Developer** tab appears on the ribbon.

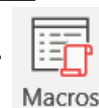


Excel macros use a programming language called **Visual BASIC**. If you know the language you can directly write your own macros. If you do not know the language, you can ask Excel to record your keyboard and mouse actions and it will write the code for you. To see how this works, do the following:

3. Click the **Developer** tab.
4. In the **Code** group, click **Record Macro**.
5. In the **Macro name:** box, type **SortByName**. Macro names can contain only letters and numbers and must begin with a letter.
6. Click **OK**. Excel will record all of your keystrokes and mouse actions until you tell it to stop.
7. Select rows **10:50**.
8. On the **Home** tab, in the **Editing** group, click **Sort & Filter**, and select **Custom Sort**.
9. Be sure that there is a check in **My Data has headers**. In the **Sort by** box, select **Name** and be sure **A to Z** is selected.
10. Click **OK**.
11. Tap **Ctrl + Home** to make **C11** active.
12. Click the **Developer** tab and click **Stop Recording**. You should see **136 Apple, Ben** at the top of the list.

10	HWID	Name	ID	College	Year	Major
11	136	Apple, Ben	1233212	CEHD	Freshman	Business Ed
12	101	Berg, Alex	7023072	CEHD	Senior	Business Ed
13	102	Bets, Sam	7266721	Design	Senior	Retail Mer

13. On the **Developer** tab, in the **Code** group, click **Macros**. This will show a list of all the macros in the workbook.



Mac: Click **Visual Basic**.

 The image shows the "Macro" dialog box. It has a label "Macro name:" followed by a text input field containing "SortByName". There is a small icon of a document with an upward arrow next to the input field.

The new macro is listed. To see what the code looks like, click **Edit**.

```
Sub SortByName()
'
' SortByName Macro
'
'
'
    Rows("10:50").Select
    ActiveWorkbook.Worksheets("Sec 1").Sort.SortFields.Clear
    ActiveWorkbook.Worksheets("Sec 1").Sort.SortFields.Add2 Key:=Range("B11:B50") _
        , SortOn:=xlSortOnValues, Order:=xlAscending, DataOption:=xlSortNormal
    With ActiveWorkbook.Worksheets("Sec 1").Sort
        .SetRange Range("A10:BF50")
        .Header = xlYes
        .MatchCase = False
        .Orientation = xlTopToBottom
        .SortMethod = xlPinYin
        .Apply
    End With
    Range("C11").Select
End Sub
```

Sub at the top and **End Sub** at the bottom indicate that this is what programmers call a **subroutine**, which is a mini-app within a larger one. The apostrophes indicate comment lines where you can write any comments you wish. The rest of the lines are the executable code.

14. Tap **Alt + Q** to close the **Visual Basic** window.
15. Tap **Ctrl + s** to save the file and its macro. You will get an error message that says:

The following features cannot be saved in macro-free workbooks:

- VB project

To save a file with these features, click **No**, and then choose a macro-enabled file type in the File Type list.

To continue saving as a macro-free workbook, click **Yes**.

This says you cannot save a file that has macros (Visual Basic subroutines) unless you save it as a **macro-enabled** file. If you click **Yes** the file will be saved without the macros. **DON'T DO THAT!**

16. Click **No** and the **Save As** dialog box will open.
17. Navigate to your **Excel Files** folder.
18. Change the file name to **HW05-6 HWID Find and Macros Enabled Done**.
19. Change the file type to Excel **Macro-Enabled Workbook**.

HW05-6 HWID Find and Macros Enabled Done

Excel Macro-Enabled Workbook (*.xlsm)

 Save

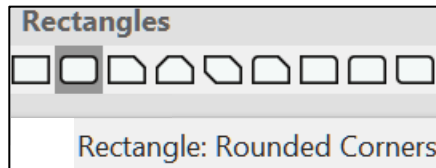
20. Click **Save**. Now, each time you save the file the macros will be saved also.

- p. Follow a similar procedure to create a macro called **SortByHWID** that sorts the data by the **HWID** in column **A**. Now, **101 Berg, Alex** will be at the top (row 11)

Don't Forget to Click Stop Recording!

- q. To create buttons that you can click to run the macros, do the following:

1. On the **Insert** tab, in the **Illustrations** group, click **Shapes** and click **Rectangle: Rounded Corners**.

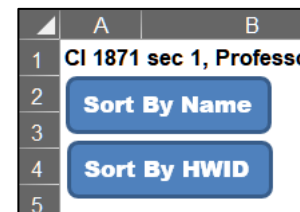


The cursor will turn into a small cross.

2. Drag the cross down and to the right to form the rectangle.
3. Let up the mouse button to reveal the rectangle.
4. Make the height of the rectangle **0.4** and the width **1.5**.
5. Drag the rectangle to the upper left corner of the window, about at cell **A2**.
6. Right-click the rectangle, select **Edit text**, and type **Sort By Name**. Make the font 12 pt **Arial Black**.
7. Right-click the rectangle and click **Assign Macro**.
8. Click **SortByName** and then **OK**. Now, you have a button that will run the macro with a single mouse click.
9. Select the button by holding down the **Ctrl** key and clicking the button.
10. Tap **Ctrl + D** to create a duplicate of the button.

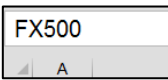


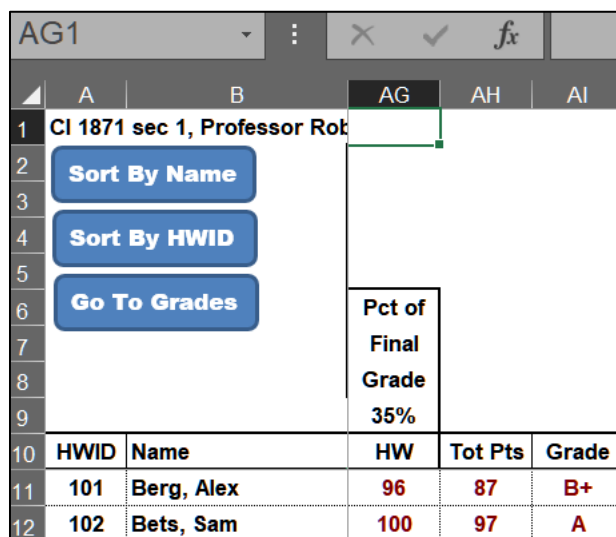
11. Change the name to **Sort By HWID**.
12. Assign the **SortByHWID** macro to this button.
13. **Ctrl + Click** the new button and drag it so that it is just below the other one.



14. Click the **Sort By Name** button and notice how the data are sorted by **Name** with **136 Ben Apple** at the top.
15. Click the **Sort By HWID** button and notice how the data are sorted by **HWID** with **101 Berg, Alex** at the top.

r. Macros can be used to move to specific places in a worksheet with the click of a button. This is useful for large worksheets where scrolling would be time consuming. To see how this works, do the following:

1. On the **Developer** tab, in the **Code** group, click **Record Macro**.
2. In the **Macro name:** box, type **GoTo Grades** and then click **OK**.
3. In the **Name Box**, type **fx500** and tap **Enter**. This will move the active cell to a place far away from the cell you want to go to. This is needed because if the active cell is close to the target cell Excel may not adjust the screen properly. 
4. In the name box, type **ag1** and tap **Enter**. This is where you want to be.
5. Click the **Developer** tab and click **Stop Recording**.
6. Create a button with the label **Go To Grades** and assign this new macro to it. Drag the button so it is just below the **Sort By HWID** button.
7. Try your new macro by making **C11** active (tab **Ctrl + Home**) and then clicking the **Go To Grades** button to make **AG1** active.



	A	B	AG	AH	AI
1	CI 1871 sec 1, Professor Rot				
2	Sort By Name				
3					
4	Sort By HWID				
5					
6	Go To Grades				
7					
8					
9					
10	HWID	Name	HW	Tot Pts	Grade
11	101	Berg, Alex	96	87	B+
12	102	Bets, Sam	100	97	A

s. Enter formulas that summarize the total points for students in different colleges and at different academic levels by doing the following:

1. In **D3**, enter a formula that will display the number of **CLA** students in the gradebook. Since you want the **NUMBER** of students who meet a certain criterion, **COUNTIF** would be a good choice. Because you are going to fill this formula down, be sure to use **\$** where appropriate. ³⁸
2. Fill down the formula in **D3** to **D8** and preserve the formatting.

³⁸ =COUNTIF(\$D\$11:\$D\$50,C3)

3. In **E3**, enter a formula that will display the average total points of **CLA** students. Since you want the **AVERAGE** of students who meet a certain criterion, **AVERAGEIFS** would be a good choice.

what to average where to look what to look for
=AVERAGEIFS(average range **,** criteria range **,** criteria **)**
range that has total points AH11:AH50 range that has stu colleges D11:D50 cell that has college of interest C3

Remember to put in **\$** on cells that you do **NOT** want to change when the formula is filled down.

=AVERAGEIFS(\$AH\$11:\$AH\$50,\$D\$11:\$D\$50,C3)

4. Fill down the formula in **E3** and preserve the formatting.
5. Since there are no **CSE** or **UC** students, **AVERAGEIFS** displays the **#DIV/0!** error. To fix that, modify the formula in cell **E3** so that if the number of students in **D3** is **0**, then **n/a** will be displayed.

To do this, put the **AVERAGEIFS** inside an **IF** function:

=IF(D3=0,"n/a",AVERAGEIFS(\$AH\$11:\$AH\$50,\$D\$11:\$D\$50,C3))

6. Fill down the formula in **E3** and preserve the formatting.

College	Number	Total Pts Ave
CLA	4	52
CEHD	20	93
CFANS	1	97
CSE	0	n/a
Design	11	95
UC	0	n/a

Except for the CLA students, it looks like everyone did really well. Can the CLA student average total points really be **52**? What happened?

The problem is that CLA student 104 Bing never attended (his code is **NOL**) and so his total points is 0, and 105 Cheng withdrew early on (her code is **W**) and so her total points is 13. You do not want those numbers to be included in the average. To not include **NOL** and **W** students, add two more criteria to the **AVERAGEIFS** function.

=AVERAGEIFS(range to average, criteria range 1, criteria 1, criteria range 2, criteria 2, ...)

- **range to average** is the total points in **AH11:AH50**
- **criteria range 1** is **K11:K50** and **criteria 1** is **NOL**
- **criteria range 2** is **K11:K50** and **criteria 2** is **W**
- **criteria range 3** is **D11:D50** and **criteria 3** is **C3**

In **E3**, type the following (note that **<>** means **not equal to**):

**=IF(D3=0,"n/a",AVERAGEIFS(\$AH\$11:\$AH\$50,\$K\$11:\$K\$50,"<>NOL",
\$K\$11:\$K\$50,"<>W",\$D\$11:\$D\$50,C3))**

7. Fill **E3** down. Now the average for CLA students is 98. That makes more sense.

I know, this one probably blew your socks off, and it took a while. Think about how the formula was built up in parts, each one addressing a problem caused by the data.

- t. Enter a function that will display the current date and time by doing the following:

1. Merge **A9:C9** and left align.
2. In **A9**, use the **NOW** function to enter the current date and time.
3. Format the merged cells so they display something like
Printed Fri 3 Jun 2022 at 10:18 AM³⁹.

- u. Set up the worksheet for printing by doing the following:

1. On the **Sec 1** worksheet, hide columns **F:AA** (select the columns, right-click, select **Hide**).
2. Set the print area of the **Sec 1** worksheet so that **A1:AI17** will be printed (select **A1:I15**, click **Page Layout**, **Print Area**, **Set Print Area**).
3. Set up the **Sec 1** worksheet to print in **Landscape** orientation, all on **one page**, **centered horizontally** but not vertically, and set all margins to **0.5** inch. Include a footer that contains the **file name** on the left and the **sheet name** on the right. Print with **row and column headings**. Compare the preview with the key. Make needed corrections, save the workbook and close it.

Step 4 Submit Now, submit the following. Use these names for the pdf files:

HW05-1 HWID River Done (River Depth and Temp Chart) – This is the River Depth and Temp Chart chartsheet

HW05-2 HWID Loans IF Done

HW05-3 HWID Rent IF Done

HW05-4 HWID Commission IF Done (Sales Data) – This is the Sales Data worksheet

HW05-5 HWID Sorting Values Done (Values Sorted) – This is the Values Sorted worksheet

HW05-6 HWID Find and Macros Enabled Done (Sec 1) – This is the Sec 1 worksheet

Create a pdf file of the output for each of the above, place them in a folder called **HW05 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW05 Excel: Customize Charts, Make Decisions, and Sort**.

Step 5 Backup Now would be a good time to backup your files.

³⁹ The **Format Cells** code is "Printed "ddd d mmm yyyy " at " h:mm AM/PM

Project 6

Sample Exam Questions for Excel

You should do this project in preparation for the Excel exam, but you do not have to submit it for grading. If you do submit it, you may earn up to 80 extra credit points which will be added to your homework score. If you do not submit it, it will not count against you.

Step 1 Read For this project, there are no pages to read in your textbook.

Step 2 Activities For this project, there are no textbook activities.

Step 3 Homework Review for the Excel exam.

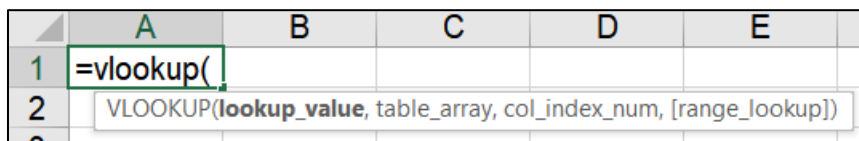
HW06-1 Sample Exam Questions for Excel

Problem: How can you do well on the Excel exam?

Go back through projects 2 through 5 and be sure you know how to do the activities in both the textbook and this Study Guide. You do not have to re-do them all, just skim them and, if you think you have forgotten how to do something, read through the material on that activity.

When I grade your exam, I will look at your formulas as well as the displayed results. So, if you cannot get something to work don't waste time trying to figure out the answer by hand and typing in the result. You will get no points for that. Instead, write as much of the formula as you can and type it **WITHOUT** the equal sign. That way, I will be able to see your formula and you may earn partial credit.

Recall that as you start typing a function, Excel will display a screen tip that will show its structure. So, for example, typing **=vlookup(** will display the following:



	A	B	C	D	E
1	=vlookup(
2	VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])				

The screen tips should help jog your memory. Here, it shows that you must enter:

lookup_value - the cell reference of the thing you are looking for, e.g. **A4**

table_array - the range of cells where you are looking, e.g., **C5:D12**

col_index_num - the number of the column in the **table_array** that contains the thing you want to display, e.g., **2**

[range_lookup] - **TRUE** if the **table_array** is sorted low to high and you want only an approximate match, or **FALSE** if you must have an exact match. The square brackets [] mean this is optional. It is assumed to be **TRUE** if you leave it out.

Below are some tips on the functions students find most difficult:

=VLOOKUP(what to find, where to look, what column to display, TRUE or FALSE)

Used to **locate** an item in a vertical list and then to display something in the same row. See **SG85**. If the list is horizontal, use **HLOOKUP**. See **SG79**.

Example: =VLOOKUP(C11,\$H\$11:\$I\$20,2) from HW04-4

If your version of Excel has **XLOOKUP**, it is better to use that. See page **SG82**.

=IF(logical test, display if true, display if false)

Used to choose between two things based on a **logical test**. See **SG67**.

Example: =IF(F9<=40,0,E9*1.5*(F9-40)) from HW03-4

If there is more than one condition, use **IFS** (**SG57**) or nested **IF**'s (**SG143**).

=COUNTIF(where to look, what to look for)

Used to find the **number** of things that match the **what to look for** criteria. Criteria must be inside quotes or a cell reference. See textbook page 395.

Example: =COUNTIF(H9:H36,">0") from HW03-4

If there is more than one condition, use **COUNTIFS**. See **SG71**.

=SUMIFS(which cells to sum up,where to look, what to look for, ...)

Used to find a **total** of things that match the **what to look for** criteria. Criteria must be inside quotes or a cell reference. See **SG59**.

Example: =SUMIFS(A15:A42,F15:F42,"Tulips") See page **SG59**.

Can be used if there is more than one condition. See **SG72**.

Example: =SUMIFS(F9:F28,D9:D28,"M",E9:E28,"<5")

=AVERAGEIFS(which cells to average,where to look, what to look for,...)

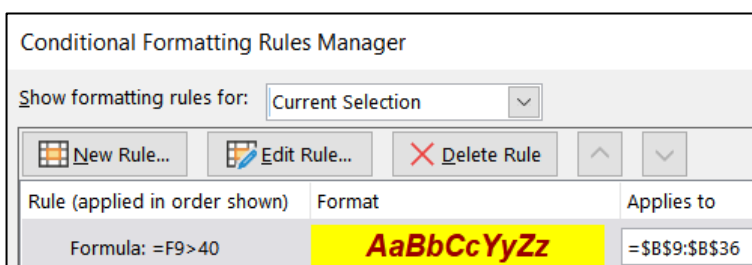
This is just like **SUMIFS** but it calculates the average of things that match the **what to look for** criteria. Criteria must be inside quotes or a cell reference. See **SG60**.

Example: =AVERAGEIFS(D15:D42,F15:F42,"Tulips")

Can be used if there is more than one condition.

Conditional format: Used to highlight values that match specific criteria. Select the range you want to format **BEFORE** you open the conditional formatting dialog box. Then, choose **Conditional Formatting, Manage Rules, New Rule**, Type the condition that describes what you want to find and then choose a format. See **SG72**.

Example from HW03-4:



Do the following (solutions begin on page **SG178**):

- a. Open the workbook **HW06-1a Excel Practice Questions Original**, which is one of the files you downloaded at the start of the term.
- b. Save the workbook to your **Excel Exam** folder using the name **HW06-1b HWID Excel Practice Questions Done**.

Sales Data Worksheet

- c. Click the **Sales Data** worksheet tab and do the following.

1. Insert the following data in between the rows for **Braasch** and **Good**:

7	Clover, May	Sales	5584
8	Day, Dennis	Marketing	6588

2. In **C17**, insert a formula that will find the total of the values in **C4:C15**.

This formula and all the others you construct must work if the data change. In other words, you cannot simply figure out the sum on your calculator and then type in the answer.

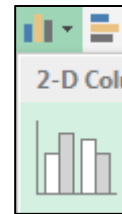
3. In **C18**, insert a formula that finds the average of the values in **C4:C15**.
4. In **D4**, enter a formula that will calculate the commission for Adams. If her total sales are below \$5,000, the commission is \$9,000 plus 8% of her total sales. Otherwise, the commission is \$9,400 plus 12% of the total sales that are above \$5,000. Fill the formula down to **D15**.
5. In **E4**, enter a formula that will calculate the percent of **Total Sales** for Adams. This is the value in **C4** divided by the total in **C17** and then multiplied by 100. Fill the formula down to **E15**.
6. Format **C4:D20** as currency with two decimal places and the dollar sign showing. Use currency style, not accounting style.
7. Format **E4:E15** as a number with one decimal place showing.
8. In **F4**, display the word **Great** if Adams' **Total Sales** in **C4** are over \$8,000, **Good**, if **C4** is between \$6,000 and \$8,000, and **Poor** if **C4** is \$6,000 or less. Fill the formula down to **F15**.
9. In **D20**, enter a formula that will display the sum of the **Total Sales** for people whose **Commissions** are over \$9,800.
10. Create a conditional format so that the names and department name of the people in the **Marketing Department** whose commissions are over \$9,600 have a yellow fill.
11. In **D22**, enter a formula that will display the number of commissions that are over \$9,600 for people in the **Marketing Department**.

12. In **D1**, enter a formula that will automatically display the date and time the worksheet is printed. The format should look like **Printed on Tue 8 July 2020 at 11:50 AM**.
13. Change the value in **C4** so that Adam's **% of Total Sales** is exactly **25.00**.
14. Change the widths of all the columns to **12**.
15. Merge **D1:F1** and left align it.
16. Center and wrap the text in **D21**.
17. Center **D19:D22**.
18. Set the **Print Area** to **A1:F22**.
19. Set up the **Sales Data** worksheet to print in **Landscape** orientation, all on **one page, centered horizontally** but not vertically with 1 inch margins. Include a footer that contains the **file name** on the left and the **sheet name** on the right. Show **gridlines** and **row and column headings**. Compare the preview with the key. Make needed corrections, save the workbook but do NOT close it.

Column Chart – New Chartsheet Based on Sales Data

d. Create a **chart** of the data on the **Sales Data** worksheet.

1. Create a clustered column chart of the data in **C4:C15**.
2. Place the chart on a new chartsheet called **Column Chart**.
3. Use the data in **A4:A15** for the horizontal axis.
4. Type your four-character **HWID** as the **Chart Title**.
5. Type **Total Sales** for the **Vertical Axis Title**.
6. Type **People** for the **Horizontal Axis Title**.
7. Display the **Data Labels** and make their font red Arial Black rounded to the nearest whole dollar.
8. Do not show the **Legend**.
9. Add a **Thought Bubble: Cloud** callout with the text **Wow!** Position the callout as shown. Make the font 12 pt Arial Black and the color yellow.
10. Change the background of the chart to **Newsprint** texture.
11. Set up the **Column Chart** chartsheet to print in **Landscape** orientation and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook but do NOT close it.



Bonus Data Worksheet

e. Click the **Bonus Data** worksheet.

1. Click **A1** and make the text bold and red and center the text across columns **A:G**.
2. Enter a formula in **C4** that will display the bonus for the sales value in **B4**. Use the data table in **B10:G12**. Fill the formula down to **C8** and **preserve the formatting**.
3. Sort the rows of data by **Bonus** in decreasing order.
4. Create a conditional format that will make the **Names**, **Sales**, and **Bonuses** bold red and the background of the cell light green if the bonus for a person is between \$300 and \$900.
5. In **A2**, display this: **Highest Bonus Awarded was \$x,xxx.00**, where **xxx** is the largest value in **C4:C8**. Merge across **A2:D2**.

	A	B	C	D
1	Bonus Data			
2	Highest Bonus Awarded was \$1,000.00			

6. Create an orange **Column Sparkline** in **C9** of the values in **C4:C8**.
7. In cell **D3**, enter a formula that shows the average of the **Total Sales** on the **Sales Data** worksheet. Format **D3** so that it displays **Average of Total Sales is \$x,xxx.00**. **Merge and Center D3:F3**.
8. Set up the **Bonus Data** worksheet to print in **Landscape**, all on **one page**, **centered horizontally** but not vertically and include a footer that contains the **file name** on the left and the **sheet name** on the right. Include **gridlines** and **row and column headings**. Compare the preview with the key. Make needed corrections, save the workbook, but do NOT close it.

Sort Data Worksheet

f. Make the **Sort Data** tab active and do the following:

1. Delete **Row 8** (it has red text).
2. Delete **Column C** (it has blue text).
3. Sort the data by **Class** in ascending order (A to Z) and, within **Class** by **Trend** in descending order (Largest to Smallest).
4. Filter the data in **A1:D33** so that only rows with **Class** to **C** or **T** are showing.


Births Data Worksheet

g. Click the **Births Data** worksheet tab.

1. Split the screen just below row **9** and then scroll the bottom half of the screen down so you can see row **28**.

9	22	802	36	
28	49	30	1	

2. Set up **Data Validation** for **A2:A28**. The ages should be whole numbers between 14 and 50, inclusive. If an error occurs, have a **Warning** message display the text **Age must be between 14 and 50, inclusive**. Here is what should happen if you type 1 in **A2** and tap **Enter**.

	A	B	C
1	Age of Mother	Births/Thousand	Index
2	1	15	850
3	<div> <div>Microsoft Excel</div> <div>  <p>Age must be between 14 and 50, inclusive.</p> <p>Continue?</p> <div> <input type="button" value="Yes"/> <input type="button" value="No"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/> </div> </div> </div>		40
4			30
5			20
6			10
7			00

Births Chart – New Chartsheet Based on Births Data

3. Create an **XY Scatter** plot of the data in columns **A** and **B**. Do not connect the points by a smooth line.
4. Move the chart to its own chartsheet called **Births Chart**.
5. Make the Chart Title **Live Births Per Thousand Women vs. Age**
Make the font 14 pt Arial Black.
6. Make the Horizontal Axis title **Age (years)** Make the font 12 pt Arial Black.
7. Make the Vertical Axis Title **Live Births Per Thousand Women**
Make the font 12 pt Arial Black.
8. Show the **Major** and **Minor gridlines** for both axes.
9. Make the data points square, green, and 8 point width.
10. Add a **Trendline** that is a degree 5 polynomial. Display the equation and **R** squared value. Make their font 10 pt Arial Black. Make the **trendline** solid, red, and 3 pt width.
11. Make the color of the **Chart** and **Plot** areas pink.
12. Make the **horizontal** and **vertical axes** 4 point width and dark blue and the numbers Arial Black.
13. Make the **major gridlines** 2 point width and dark gray.
14. Do not display the **minor gridlines**.

15. Scale the **horizontal axis** so that it starts at **12** and ends at **52** and make the interval between major grid lines 4.
16. Add a second set of data markers using **Age** for the **Horizontal (X) axis** and **Fertility Index** for the **Vertical axis (Y)**. Use **Index** for the **Series name**.
17. Move the equation and **R squared** value textbox so it is just above the horizontal axis
18. Add a **Thought Bubble: Cloud** callout that points to the data gap between ages 25 and 29. Insert the text **Data unavailable**
19. Arrange the sheet tabs alphabetically left to right.

Sales Data	Column Chart	Bonus Data	Sort Data	Births Data	Births Chart
------------	--------------	------------	-----------	-------------	--------------

20. Set up the **Births Chart** chartsheet to print in **Landscape** orientation and include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook, and close it.

PivotTable – Start

- h. Open the workbook **HW06-1c Excel Practice Questions PivotTable Original**, which is one of the files you downloaded at the start of the term.
- i. Save the workbook to your Excel Files Excel Exam folder using the name **HW06-1d HWID Excel Practice Questions PivotTable Done**

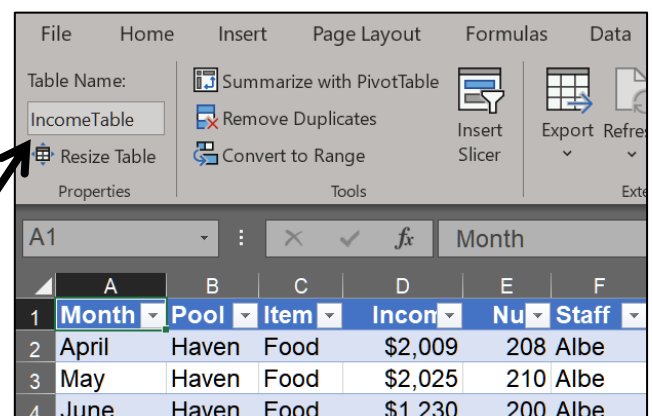
The workbook shows three months of data for an Aquatics Program sponsored by a Parks and Recreation department.

	A	B	C	D	E	F
1	Month	Pool	Item	\$	Num	Staff
2	April	Haven	Food	\$2,009	208	Albe

For example, row **2** shows that in **April** a total of **\$2,009** was taken in on **Food** supervised by **Albe** at the **Haven** pool.

PivotTable – Clean Up Data

- j. Remove blank rows, rename a field, and convert to a table.
 1. On the **Data** worksheet, in cell **D1**, change **\$** to **Income**.
 2. Remove all blank rows. Do NOT sort.
 3. Convert the data into a table called **IncomeTable**.



PivotTable – Construct PivotTable

k. Construct a PivotTable by doing the following:

1. Using the data in **IncomeTable**, insert a **PivotTable** on a new worksheet named **Pivot**. Place **Income** under **Values**, **Pool** under **Rows**, and **Item** under **Columns**.
2. Pivot the table so **Item** forms the rows and **Pool** forms the columns.
3. In the **Rows** area, display **Month** above **Item**.
4. Display the **averages** rather than **sums**. Round the numbers to the nearest dollar and display the dollar sign.
5. Collapse the data so the **Items** only show for **April**.

	A	B	C	D	E	F	G	H
1								
2								
3	Average of Income Column Labels							
4	Row Labels	Beach	Cape	Coral	Haven	Sands	Tropics	Grand Total
5	April	\$1,555	\$1,513	\$1,797	\$1,704	\$1,581	\$1,511	\$1,610
6	Ball	\$810	\$811	\$667	\$799	\$945	\$707	\$790
7	Dive	\$882	\$910	\$1,111	\$910	\$899	\$679	\$899
8	Food	\$2,100	\$2,204	\$2,230	\$2,009	\$1,801	\$1,799	\$2,024
9	Polo	\$380	\$383	\$493	\$450	\$487	\$356	\$425
10	Spa	\$2,264	\$1,907	\$2,102	\$2,250	\$2,349	\$2,196	\$2,178
11	Swim	\$2,894	\$2,864	\$4,181	\$3,805	\$3,007	\$3,326	\$3,346
12	May	\$1,696	\$1,452	\$1,613	\$1,596	\$1,501	\$1,384	\$1,540
13	June	\$1,567	\$1,498	\$1,509	\$1,413	\$1,447	\$1,381	\$1,469
14	Grand Total	\$1,606	\$1,488	\$1,640	\$1,571	\$1,510	\$1,425	\$1,540

Notice that **A3** displays **Average of Income** but **H4** and **A14** display **Grand Total**. The values in column **H** and row **14** are not **Totals** but **Averages**. For example, cell **H5** is the average of **H6:H11**. Also, cell **H14** is the average of **H6:H11** and **H13:H18** and **H20:H25**, even though the last two ranges are not visible. It is also the average of **B14:G14**. While those totals might be useful when sums are displayed, they are not useful when averages are displayed.

PivotTable – Construct 3-D Pie Chart

l. Construct a 3-D Pie Chart of the PivotTable:

1. Starting on the **Data** worksheet, create a new PivotTable with **Income** under **Values** and, **Pool**, **Month**, **Item**, and **Staff**, in that order under **Rows**.
2. Rename the worksheet **Pool**.
3. Collapse the fields so that only the **Pool** field shows.
4. Create a **3-D Pie Chart** of the data.
5. Place the chart on its own chartsheet called **3-D Pie**.
6. Show the **Data Labels** and format them to be percentages rather than sums.

7. Make the data labels **white 18 pt Arial Black**.
8. Make the title **Contribution of Each Pool**. Make the font 18 pt Arial Black.

Mac: Your graph may not show the **Field Buttons**. The tilt (perspective) of your graph may be different from that shown. That is OK.

9. Set up the **3-D Pie** chartsheet to print in **Landscape** orientation. Include a footer that contains the **file name** on the left and the **chartsheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook but do NOT close it.

PivotTable – Slicers

m. Use slicers to filter data:

1. Click the **Data** tab and insert another **PivotTable** named **Filtered**. Place **Income** under **Values**, **Month** under **Filters**, **Pool** under **Rows**, and **Item** under **Columns**.
2. Format the values as currency with **0** decimal places and the **\$** showing.
3. Insert a slicer for the **Pool** field. Apply a **yellow** slicer design.
4. Insert a slicer for the **Item** field. Apply a **green** slicer design.
5. Move the slicers so they are under the table.
6. Use the two slicers to filter the data to show the **Income** for **Dive** and **Swim** for the **Beach**, **Haven**, and **Tropics** pools.

	A	B	C	D
1	Month	(All)		
2				
3	Sum of Income	Column Labels		
4	Row Labels	Dive	Swim	Grand Total
5	Beach	\$2,555	\$9,147	\$11,702
6	Haven	\$2,799	\$9,438	\$12,237
7	Tropics	\$2,213	\$7,735	\$9,948
8	Grand Total	\$7,567	\$26,320	\$33,887

Drag the slicers so that they are just under the PivotTable.

7. Set up the **Filtered** worksheet to print in **Portrait** orientation, **Adjust to 150 %** of normal size, **centered horizontally** but not vertically. Include a footer that contains the **file name** on the left and the **worksheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook and create the pdf file, but do NOT close it.

PivotTable – Individual Reports

- n. Place the **Dive Lessons** and **Swim Team** data for **Beach** on its own worksheet named **Beach**. **AutoFit** the columns.

	A	B	C	D	E	F
1	Month	Pool	Item	Income	Num	Staff
2	June	Beach	Dive	791	86	Melby
3	May	Beach	Dive	882	95	Melby
4	April	Beach	Dive	882	95	Melby
5	June	Beach	Swim	2876	295	King
6	May	Beach	Swim	3377	345	King
7	April	Beach	Swim	2894	296	King

Navigation: Data | Pivot | 3-D Pie | Filtered | **Beach** | Stacked

Set up the **Beach** worksheet to print in **Portrait** orientation, **Adjust to 150 %** of normal size, **centered horizontally** but not vertically. Include a footer that contains the **file name** on the left and the **worksheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook and create the pdf file, but do NOT close it.

PivotTable – Stacked Column Chart

- o. Create a **Stacked Column Chart** based on the PivotTable on the **Filtered** worksheet.
1. From the **Filtered** worksheet, insert a **Stacked Column** PivotChart.
 2. Move the chart to its own chartsheet called **Stacked**.
 3. Filter the chart to show the **April** and **May Income** for **Dive** and **Swim** for the **Coral, Haven, Sands, and Tropics** pools.
 4. Display the **Averages** rather than the **Sums**.
 5. Make the chart title **April and May Income for Dive and Swim for Coral, Haven, Sands, and Tropics Pools**.
 6. Make the title, legend, and axes **12 pt Arial Black**.
 7. Hide the **Filter Buttons** if they are showing.
 8. Set up the chartsheet to print in **Landscape** orientation. Include a footer that contains the **file name** on the left and the **chartsheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook but do NOT close it.

Click the **Filtered** worksheet and notice how the PivotTable has changed. This is because you changed the filters on the chart.

	A	B	C	D
1	Month	(Multiple Items)		
2				
3	Average of Income	Column Labels		
4	Row Labels	Dive	Swim	Grand Total
5	Coral	\$1,111	\$3,522	\$2,316
6	Haven	\$910	\$3,350	\$2,130
7	Sands	\$906	\$2,694	\$1,800
8	Tropics	\$734	\$2,660	\$1,697
9	Grand Total	\$915	\$3,056	\$1,986
10	Pool		Item	
11	Beach		Ball	
12	Cape		Dive	
13	Coral		Food	
14	Haven		Polo	
15	Sands		Spa	
16	Tropics		Swim	

PivotTable – Change Data and Update PivotTable

- p. You are going to update the raw data on the **Data** worksheet. This will change all the PivotTables to reflect the new data. However, for this practice activity, you want to keep those PivotTables as they were so you can go back and look at them later if you wish. For that reason, you are going to make a copy of the **Data** worksheet and base a new PivotTable on those data. Do the following:

1. Make a copy of the **Data** worksheet and name it **Updated Data**.

If there are too many tabs in this workbook, you can right-click a tab and select **Hide** to make more room. Or, use the arrows on the left of the tab list to scroll the tab names back and forth.

2. Starting from the **Updated Data** worksheet, insert a PivotTable that has **Income** in the **Values** box, **Pool** in the **Rows** box, and **Item** in the **Columns** box. Name the worksheet **Updated Pivot**.

	A	B	C	D	E	F	G	H
1								
2								
3	Sum of Income	Column Labels						
4	Row Labels	Ball	Dive	Food	Polo	Spa	Swim	Grand Total
5	Beach	2341	2555	6684	1386	6792	9147	28905
6	Cape	2043	2813	6612	1155	5721	8432	26776
7	Coral	2216	2943	6470	1349	6928	9610	29516
8	Haven	2804	2799	5264	1270	6699	9438	28274
9	Sands	2872	2713	5502	1473	6985	7630	27175
10	Tropics	2559	2213	5397	1311	6436	7735	25651
11	Grand Total	14835	16036	35929	7944	39561	51992	166297

3. Go back to the **Updated Data** worksheet and, in cell **D2 (April Haven Food)** replace **\$2,009** with **\$40,000**.

	A	B	C	D	E	F
1	Month	Pool	Item	Incom	Nu	Staff
2	April	Haven	Food	\$40,000	208	Albe

4. Add the following to the bottom of the table on the **Updated Data** worksheet.

	A	B	C	D	E	F
110	April	Cape	Souvenirs	\$100	40	Jones
111	May	Cape	Souvenirs	\$200	60	Jones
112	June	Cape	Souvenirs	\$300	80	Jones

5. Click the **Updated Pivot** worksheet and refresh the PivotTable. You should see a new column for **Souvenirs** with data, **600** and the **Haven Food** changed from **\$5,264** to **\$43,255**.
6. Arrange the worksheet tabs as follows:

Data	Pivot	3-D Pie	Filtered	Beach	Stacked	Updated Data	Updated Pivot
------	-------	---------	----------	-------	---------	--------------	---------------

Step 4 Submit Submitting this project is **optional**. However, you may earn extra credit on your homework score if you submit the following. Use these names for the pdf files:

HW06-1b HWID Excel Practice Done (Sales Data)
 HW06-1b HWID Excel Practice Done (Column Chart)
 HW06-1b HWID Excel Practice Done (Bonus Data)
 HW06-1b HWID Excel Practice Done (Births Chart)
 HW06-1d HWID Excel Practice Pivot Done (3-D Pie)
 HW06-1d HWID Excel Practice Pivot Done (Filtered)
 HW06-1d HWID Excel Practice Pivot Done (Beach)
 HW06-1d HWID Excel Practice Pivot Done (Stacked)

Create a pdf file of the output for each of the above, place them in a folder called **HW06 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW06 Sample Exam Questions for Excel**.

How to Solve Sample Exam Questions for Excel

Sales Data Worksheet – Solutions

- c1.** Question **c1** is on page **SG169**. Here is how to solve it:
- Click the number for row **7**, drag down to row **8**, right-click, and select **Insert**. This inserts two blank rows. Then, type the new data.
- c2.** You are finding a total of numbers so use **SUM**. Type **=sum(**, drag down from **C4** through **C15**, type **)**, and the tap **Enter**.
- c3.** Do the same as for **c2** but replace the word **SUM** with **AVERAGE**.

- c4.** You are entering a formula that displays one of two things. That is, the formula will choose between

Choice 1: \$9,000 plus 8% of total sales.

Choice 2: \$9,400 plus 12% of the total sales that are above \$5,000.

The formula makes the choice by seeing if total sales are below \$5,000. So, the condition is **C4<5000**. Type **=IF(C4<5000,**

If the condition is true, display Choice 1, which is \$9,000 plus 8% of her total sales. Since total sales are in **C4**, add this to the formula **9000+8%*C4**, to get **=IF(C4<5000,9000+8%*C4,**

If the condition is false, display Choice 2, which is \$9,400 plus 12% of the total sales that are above \$5,000. To find the total sales that are above 5000 subtract **C4-5000** (for Adams this will be 5644-5000, which is 644). Then, take 12% of that. Note that you must use parentheses, so the computer does the subtraction first and then multiplies by 12%. That is, **12%*(C4-5000)**. Finally, add 9400 to this to get **9400+12%*(C4-5000)**. Thus, the final formula is

=IF(C4<5000,9000+8%*C4,9400+12%*(C4-5000))

Tap **Enter**.

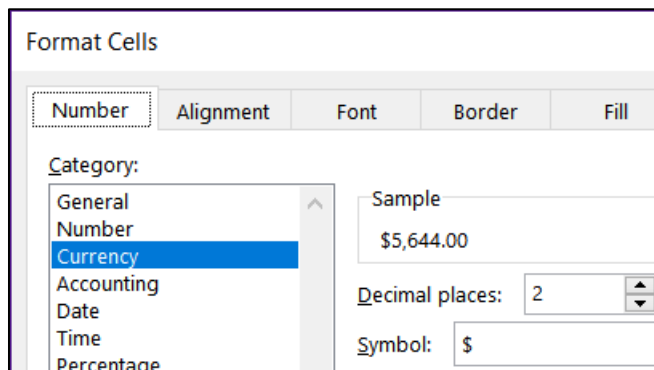
To fill the formula, click **D4**, drag down to **D15**, and tap **Ctrl + D**. Or, use the Fill Handle by pointing to the lower right corner of **D4** (so the little black cross appears), and drag down to **D15**.

- c5.** To find the percentage that something is of a whole, divide that something by the whole. That gives a decimal. Multiply by 100 to convert the decimal into a percent. For Adams, her total sales are in **C4** and the sum of the total sales for all employees is in **C17**. So, type **=C4/C17*100**

You are going to fill this formula down to row **15**. You want the **C4** to change to **C5**, and then to **C6** and so on. But, you want **C17** to always remain **C17** so you must use an absolute reference (the \$ signs).

Thus the formula is **=C4/\$C\$17*100**. To fill the formula, click **E4**, drag down to **E15**, and tap **Ctrl + D**.

- c6.** Select **C4:D20**, right-click, **Format Cells**, **Number** tab, **Currency**. Be sure the **Symbol** is **\$** and **Decimal places** is **2**.



- c7.** Select **E4:E15**, right-click, **Format Cells**, **Number** tab, **Number**, **Decimal places 1**. Note that since you multiplied by 100 in the formula, you do not use the percentage format. If you did, Adams would show 716.6%.
- c8.** You need to display one of three words depending on the value in **C4**. Since there are three choices you need two **IF** statements, one nested inside the other.

=IF $\left(\begin{array}{cc} \text{THEN} & \text{Else} \end{array} \left(\begin{array}{cc} \text{THEN} & \text{Else} \end{array} \right) \right)$
Condition 1 , **show this** , **IF** **Condition 2** , **show this** , **show this**

Develop the formula in steps:

What to do	Excel Code
Check to see if Total Sales are over 8000.	=IF(C4>8000,
If that is TRUE , display the word Great .	=IF(C4>8000,"Great",
If it is FALSE , check to see if C4 is over 6000.	=IF(C4>8000,"Great",IF(C4>6000,
If that is TRUE , display the word Good .	=IF(C4>8000,"Great",IF(C4>6000,"Good",
If it is FALSE display the word Poor .	=IF(C4>8000,"Great",IF(C4>6000,"Good","Poor"))

Or, you could do it in the reverse order like this:

=IF(C4<=6000,"Poor",IF(C4<8000,"Good","Great"))

Or, you could do it this way:

=IF(C4>8000,"Great",IF(C4<6000,"Poor","Good"))

If your version of Excel has the **IFS** function, you could use that instead of the nested **IF**'s. In that case, the formula would be:

=IFS(C4>8000,"Great",C4>6000,"Good",C4<=6000,"Poor")

In the key, I put in all four of these formulas so you could see how they work. Fill down in the usual way.

- c9.** You want to find a sum of **Total Sales** for people who meet a certain condition (**Commissions** are over \$9,800). So, use **SUMIFS**.

You want to sum the **Total Sales**, which are in **C4:C15**, type **=SUMIFS(C4:C15,**

The range to look in to see if the condition is met is **D4:D15**.

So, you have **=SUMIFS(C4:C15,D4:D15,**

The condition is **>9800**. So you have **=SUMIFS(C4:C15,D4:D15,">9800")**

Note the quotation marks on the condition. This is different than when using **IF**.

- c10.** For conditional formats, first select the cells that are to be formatted. Here, you want the names formatted so select **A4:B15**.

Click **Conditional Formatting, New Rule, Use a formula to determine which cells to format**.

The employee must meet two criteria: **Department** (column **B**) is **Marketing**, and **Commission** (column **D**) is over **9600**. So, use the **AND** function: **=AND(\$B4="Marketing",\$D4>9600)** The \$ are needed because you want two columns formatted. Also, notice that here you do not put in the range **B4:B15** but only **B4**. Same goes for column **D**. For Conditional Formatting, you select the cells where you want the formatting first, then you put in the rule for the first person and Excel does it for all the people that you have selected in **A4:B15**.

Finally, click the **Format** button, click **Fill**, and click **yellow**. Click **OK** a couple of times to close the conditional formatting dialog box.

- c11.** You are to display the number of things based on two criteria so use **COUNTIFS**.

The first condition is that the **Commission** (in column **D**) must be over 9600. So, you have **=COUNTIFS(D4:D15,">9600"**

The second condition is that the department is **Marketing** (in column **B**). So you have **=COUNTIFS(D4:D15,">9600",B4:B15,"Marketing")**

Note that in each case the condition must be inside quotation marks.

- c12.** To have the date and time update automatically, **NOW()**. Do NOT use **DATE** since that is used when you need to take three separate values and combine them to form a date (not very useful).

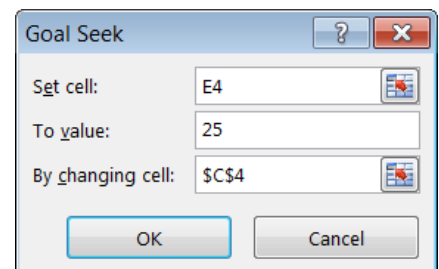
Once you have entered **=NOW()** click the green check. The date is stored as the number of days it is after January 1900. The time is stored as a fractional portion of a 24 hour day. So, if the date and time are 20 Jul 2020 at 3:23 PM, the number will be 44032.64127.

To format the date and time, right-click, **Format Cells, Number** tab, and **Custom**. The phrase **Printed on** must be in quotes since it is text. Then, enter the code for the day (**ddd**), the date (**d**), the month (**mmm**), the year (**yyyy**), the word " at " and the hour (**h**) a colon, the minutes (**mm**) and am/pm so Excel uses our normal 12 hour clock rather than military time. This is **"Printed on " ddd d mmm yyyy" at "h:mm am/pm**

- c13.** Use **Data, Forecast, What-If, Goal Seek** to get the exact value.

The answer is **24370.6624489115**.

- c14.** Select the entire worksheet, point to column heading **A**, right-click, select **Column width**, and enter **12**.



- c15.** Select **D1:F1**, click **Merge and Center**, then click **Right align**.



- c16.** Select **D21**, click **Center align**, click **Wrap text**.
- c17.** Select **D19:D22** and click **Center align**.
- c18.** Select **A1:F23**. On the **Page Layout** tab, in the **Page Setup** group, click the **Print Area** arrow, and click **Set Print Area**.
- c19.** Tap **Ctrl + p**, click **Page Setup**, and make the settings look like these:

The screenshot shows the 'Page Setup' dialog box with the 'Orientation' and 'Scaling' tabs selected. Under 'Orientation', the 'Landscape' radio button is selected. Under 'Scaling', the 'Fit to' option is selected, with '1' page(s) wide by '1' tall.

The screenshot shows the 'Page Setup' dialog box with the 'Margins' tab selected. The margins are set to: Top: 1, Header: 0.5, Left: 1, Right: 1, Bottom: 1, and Footer: 0.5. The 'Center on page' checkbox is checked, and 'Horizontally' is selected.

The screenshot shows the 'Footer' section of the Page Setup dialog box. It includes instructions on how to format text, insert a page number, date, time, file path, filename, or tab name, and insert a picture. Below the instructions is a row of icons for formatting and inserting elements. At the bottom, there are three sections: 'Left section:' containing '&[File]', 'Center section:' which is empty, and 'Right section:' containing '&[Tab]'.

Column Chart – Solutions

- d1. Select **C4:C15**. On the **Insert** tab, in the **Charts** group, select **2-D column**, and then **Clustered Column**.
- d2. Do NOT copy and paste the chart into a new **worksheet**. On the **Chart Design** tab, in the **Location** group, click **Move Chart**, and type the name **Column Chart**. This creates a new **chartsheet** that contains only the chart and no cells.
- d3. On the **Chart Design** tab, in the **Data** group, click **Select Data, Horizontal (Category) Axis Labels, Edit**. Click  to collapse the dialog, switch to the **Sales Data** worksheet, select **A4:A15**, and click  again.

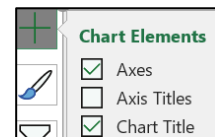
Click **OK** and click **OK** again.

- d4. The green cross allows you to put in many different chart elements.

Mac: There is no green cross. On the **Chart Design** tab, on the left, use the **Add Chart Element**.

Put a check next to **Chart Title**, if necessary. With **Chart Title** selected, in the formula bar, type your **HWID**.

- d5. Click the green cross and put a check next to **Axis Titles**. If necessary, click the vertical axis title so select it. Type **Total Sales** and tap **Enter**.



- d6. Click the horizontal axis title and type **People** and tap **Enter**.

- d7. Click the green cross and put a check next to **Data Labels**. Then, on the **Chart Format** tab, way over on the left, click the arrow and select **Series 1 Data Labels** to select them.

With the **Data Labels** selected, click the **Home** tab and change the font.

On the **Chart Format** tab, in the **Current Selection** group, be sure **Series 1 Data Labels** is selected, and click **Format Selection**. In the **Format Data Labels** pane, click **Label Options**. Click the **Number** triangle and, under **Category**, select **Currency**, and make the **Decimal places** 0.



- d8. Click the green cross and be sure **Legend** is NOT checked.
- d9. On the **Insert** tab, in the **Illustrations** group, select **Shapes, Callouts**, and click **Thought Bubble: Cloud**. Drag to open the callout. Type the text and then format the font. To point to the **Adams** column, grab the little orange circle at the end of the point and drag it to the desired position.
- d10. On the **Chart Format** tab, in the **Current Selection** group, click the arrow, select **Chart area**, and click **Format selection**. Click the paint bucket and under **Fill** click **Picture or texture fill**. Click the arrow to the right of **Texture** and select **Newsprint**.
- d11. Set up to print as usual.

Bonus Data Worksheet – Solutions

- e1. To center across cells, select **A1:G1** and, on the **Home** tab, in the **Alignment** group, click **Merge and Center**.
- e2. The sales and bonus data are in **B10:G12**. This is a horizontal table so use **HLOOKUP**.

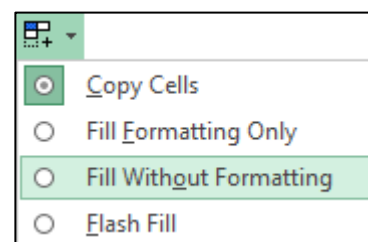
You want to look up the value in **B4** so use **=HLOOKUP(B4**

You want to lookup that value in the horizontal table **B10:G12** so use **=HLOOKUP(B4,\$B\$10:\$G\$12** Note the use of absolute references (the \$). This is because when you fill down this formula you want the location of the table to remain constant, which is what the \$ do.

When the value of **B4** is found in row 1 of the table, you want to display the value in row 3, so use **=HLOOKUP(B4,\$B\$10:\$G\$12,3**

Since you do not need an exact match and the table is in ascending order, type **TRUE** as the last parameter, **=HLOOKUP(B4,\$B\$10:\$G\$12,3,TRUE)**. **TRUE** is the default so you can leave it off if you wish.

When you fill down, to preserve the formatting be sure to select **Fill Without formatting** from the **Auto Fill Options**.



- e3. Be sure you select all the data in each row and not just the data in column **C**. That is, click the number for row **4** and drag down to row **8** to select those five rows and then, on the **Home** tab, in the **Editing** group, select **Sort & Filter, Custom Sort**. Under **Sort by**, select **Column C** and **Largest to smallest**, and then click **OK**.
- e4. Select **A4:C8** since those are the cells you want to format. Then, on the **Home** tab, in the **Styles** group, click **Conditional Formatting, New Rule, Use a formula to determine which cells to format**. There are two conditions, less than 900 and also greater than 300. Use **AND** for the condition, like this: **=and(\$c4<900,\$c4>300)**. Notice the use of the **\$** because you have selected more than one column and you want all three to have the format.

3	Name	Sales	Bonus
4	Maren	\$38,200	\$1,000
5	Sue	\$30,123	\$800
6	Melissa	\$25,821	\$600
7	Elana	\$22,054	\$400
8	Kathy	\$17,866	\$200

- e5. Here are two ways of doing this:

Method I: Since you are looking for the highest number in **C4:C8** use **=MAX(C4:C8)**. This gives you the number **\$1,000**. To format the cell right-click, select **Format Cells**, click the **Number** tab, click **Custom** and type "**Highest Bonus Awarded was "\$#,###.00**". The part inside quotes is text that will be displayed exactly as written. To the right of the quote shows the format for the number: The **\$** indicates currency, the **#** indicates numbers (you cannot use x's here), the **comma** indicates that it should be put there if the value is over one thousand, the **period** shows the decimal point, and the **00** shows that zeros should be displayed. Select **A2:D2** and click **Merge & Center**, and then **Align Left**.

Method II: This method uses the **&** to connect (concatenate) the text **Highest Bonus Awarded was** with the number **1000**. So, use **= "Highest Bonus Awarded was "&TEXT(MAX(C4:C8),"\$,###.00")**. The **TEXT** function must be used to show Excel how to format the number. If you do it this way you will not have to use **Merge & Center** to see the result.

- e6. Click **C9**. On the **Insert** tab, in the **Sparklines** group, click **Column Sparkline**. For the **Data Range** enter **C4:C8** and for the **Location** enter **C9**. Then, on the **Sparkline Design Style** tab, in the **Style** group, click **Sparkline color**, and select **Orange**.

- e7. Click **D3**, type **=**, click the **Sales Data** worksheet, click **C18**, tap **Enter**. The formula will look like this: **=Sales Data!C18** This says go to the **Sales Data** worksheet and display the contents of cell **C18**.

Right-click **D3**, **Format Cells**, **Number** tab, **Custom**, type **"Average of Total Sales is "\$#,###.00**

Select **D3:F3** and, on the **Home** tab, in the **Alignment** group, select **Merge & Center**.

- e8. Set up to print as usual.

Sort Data Worksheet – Solutions

- f1. Click the number for row **8**, right-click, and select **Delete**. Row **9** becomes row **8**. This gets rid of the entire row and not just the data in a row.
- f2. Click the letter for column **C (Height)**, right-click, and select **Delete**. Column **D** becomes column **C**.
- f3. Click the number for row **1** and drag down to the number for row **33**. This selects all the data in those rows and not just the data in a particular column. On the **Home** tab, in the **Editing** group, select **Sort & Filter**, **Custom Sort**. Be sure **My data has headers** is checked. Under **Sort by**, select **Class** and **A to Z**, click **Add Level**, select **Trend** and **Largest to Smallest**. Click **OK**.
- f4. Select **A1:D1**. On the **Home** tab, in the **Editing** group, select **Sort & Filter** and click **Filter**. Click the **Class** arrow and click **Select All** (to deselect everything) and then click **C** and **T**. Click **OK**.

	A	B	C	D
1	Level	Trend	Width	Class
5	1	9	7	C
6	5	5	85	C
7	2	3	111	C
8	2	3	111	C
22	5	5	7	T
23	5	5	7	T
24	1	4	114	T
25	2	3	111	T

Births Data Worksheet – Solutions

- g1. Click the number for row **10** and on the **View** tab, in the **Window** group, click **Split**. Scroll to the bottom part of the screen so row **28** shows.
- g2. Select **A2:A28**. Since the screen is split, rather than scrolling it will be faster to click **A2**, hold down **Shift**, and click **A28**.

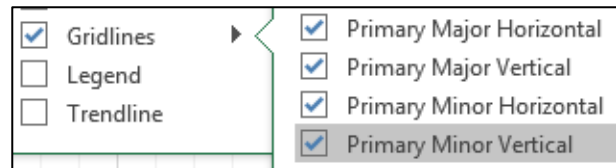
On the **Data** tab, in the **Data Tools** group, click the **Data Validation** arrow and select **Data Validation**. On the **Settings** tab, under **Allow**, select **Whole number**. Under **Data** select **between**, under **Minimum** enter **14**, and under **Maximum** enter **50**. Click the **Error Alert** tab and under **Style** select **Warning**, and under **Error message** type **Age must be between 14 and 50, inclusive**. Click **OK**.

In cell **A2**, type **1** to check if the warning comes up. Click cancel and the **1** will return to its original value.

Births Chart – Solutions

- g3.** Select **A2:B28**. On the **Insert** tab, in the **Charts** group, select **XY Scatter**.
- g4.** On the **Chart Design** tab, in the **Location** group, click **Move Chart**. Next to **New sheet**, type **Births Chart**, and click **OK**.
- g5.** Click the green cross and put a check next to **Chart Title**, if necessary. On the **Chart Format** tab, in the upper left corner, click the arrow and select **Chart Title**. In the formula bar, type **Live Births Per Thousand Women vs. Age**. Change the font size and type.
- g6.** Do the same for the **Horizontal (Category) Axis Title** and type **Age (years)**. Change the font size and type.
- g7.** Do the same for the **Vertical Axis Title** and type **Live Births Per Thousand Women**. Change the font size and type.

- g8.** Click the green cross, click the triangle to the right of **Gridlines** and put a check next to each box.



- g9.** On the **Chart Format** tab, in the upper left corner, click the arrow and select **Series 1**. This selects the data points. Just under that click **Format Selection** to open the **Format Data Series** pane. Click the **paint bucket** and click **Marker** and then **Marker options**.

To the right of **Type**, select square, to the right of **Size**, select **8 pt**.

Click the triangle next to **Fill**, click **Solid fill**, and select green.

- g10.** Click the green cross, click the arrow to the right of **Trendline** and select **More Options** to open the **Format Trendline** pane. Click the little column graph, click **Polynomial** and set the **Order** to **5**. Put checks next to **Display Equation** and **Display R-squared**. Select those on the chart and, on the **Home** tab, make the font 12 pt Arial Black.

Click the **Trendline** to select it. Click the paint bucket, click the **Dash Type** arrow, select the **solid line**, change the **Width** to **3**, and the color to red.


- g11.** In the upper left corner select **Plot Area** from the drop-down menu and click **Format Selection** to open the **Format Plot Area** pane. Click the paint bucket, click **Fill**, click **Solid fill** and select pink as the **Color**.

Repeat for the **Chart Area**.

- g12.** In the upper left corner select **Horizontal (Value) Axis** from the drop-down menu and click **Format Selection** to open the **Format Axis** pane. Click the paint bucket and then **Line** if necessary. Set the **width** to **4 pt** and the **color** to **dark blue**.

On the **Home** tab, in the **Font** group, select **Arial Black** and **Blue**.

Repeat for the **Vertical (Value) Axis**.

- g13.** On the **Chart Format** tab, in the **Current Selection** group, select **Horizontal (Value) Axis Major Gridlines** from the drop-down menu and click **Format Selection** to open the **Format Major Gridlines** pane. Click the paint bucket and then **Line** if necessary. Set the **Width** to **2 pt** and the **Color** to gray. Do the same for the **Vertical (Value) Axis Major Gridlines**.
- g14.** On the **Chart Format** tab, in the **Current Selection** group, select **Horizontal (Value) Axis Minor Gridlines** from the drop-down menu and click **Format Selection** to open the **Format Minor Gridlines** pane. Click **No line**. Do the same for the **Vertical (Value) Axis Minor Gridlines**.
- g15.** On the **Chart Format** tab, in the **Current Selection** group, select **Horizontal (Value) Axis** from the drop-down menu and click **Format Selection** to open the **Format Axis** pane. Click the little column graph, , click **Axis Options** and set the **Minimum** to **12** and the **Maximum** to **52**. Set **Units Major** to **4** (no need to set the **Minor** units since the minor gridlines are not showing).
- g16.** On the **Chart Design** tab, in the **Data** group, click **Select Data**, and click the **Add** button to open the **Edit Series** dialog box.

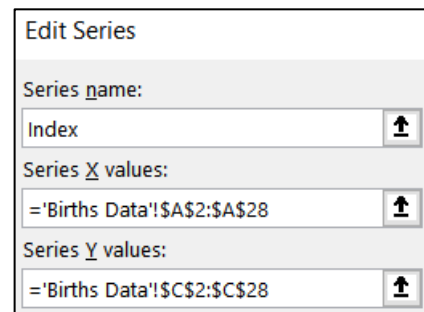
For **Series name** type **Index**.

For **Series X values**, click the collapse dialog button , click the **Births**

Data worksheet tab, select **A2:A28**, and click the collapse dialog button again.

For **Series Y values**, click the collapse dialog button, click the **Births Data** worksheet, select **C2:C28**, and click the collapse dialog button again.

Click **OK**. Click **OK** again.



- g17.** Select the textbox and drag it under the title.
- g18.** Click anywhere in the chart. On the **Insert** tab, in the **Illustrations** group, click the **Shapes** arrow and, near the bottom, select the **Thought Bubble: Cloud** callout. Drag the tiny cross to open the callout and enter the text. Grab the tiny orange circle and drag it to the data gap.
- g19.** Click each tab and drag it into position.
- g20.** Set up to print as usual.

PivotTable – Clean Up Data – Solutions

- j1.** Click cell **D1** and type **Income**.
- j2.** Click the row number of row **5** so a right pointing arrow appears.

4	June	Haven	Food	\$1,230	200	Albe
5						

Right-click and select **Delete**. Repeat for row **9** (old row **10**) and row **85** (old row **87**).

- j3. Select the range **A1:F109**. On the **Insert** tab, in the **Tables** group, click **Table** and then click **OK**.

	A	B	C	D	E	F
1	Month	Pool	Item	Incon	Nu	Staff
2	April	Haven	Food	\$2,009	208	Albe
3	May	Haven	Food	\$2,025	210	Albe

On the **Table Design** tab, in the **Properties** group, type **IncomeTable** in the **Table Name** box.

Table Name:

IncomeTable

PivotTable – Construct PivotTable – Solutions

- k1. Click anywhere inside the table. On the **Insert** tab, in the **Table** group, click **PivotTable** and click **OK**.

From the **PivotTable Fields** pane, drag the **Income** field so that it is under **Values** in the **Layout** section. Repeat for **Pool** and **Item**.

Double-click the new worksheet name and type **Pivot**.

The screenshot shows an Excel worksheet with a PivotTable and the PivotTable Fields task pane.

PivotTable Data:

Row Labels	Ball	Dive	Food	Polo	Spa	Swim	Grand Total
Beach	2341	2555	6684	1386	6792	9147	28905
Cape	2043	2813	6612	1155	5721	8432	26776
Coral	2216	2943	6470	1349	6928	9610	29516
Haven	2804	2799	5264	1270	6699	9438	28274
Sands	2872	2713	5502	1473	6985	7630	27175
Tropics	2559	2213	5397	1311	6436	7735	25651
Grand Total	14835	16036	35929	7944	39561	51992	166297

PivotTable Fields Task Pane:

- Choose fields to add to report:** Search box, checkboxes for Month, ☒ Pool, ☒ Item, ☒ Income, Num, Staff.
- Drag fields between areas below:**
 - Filters:** (Empty)
 - Columns:** Item
 - Rows:** Pool
 - Values:** Sum of Income
- Defer Layout Update:** ☐ **Update** button.


The worksheet tab is named **Pivot**.

k2. Drag **Pool** so that it is under **Columns** and **Item** so that it is under **Rows**.

	A	B	C	D	E	F	G	H
1								
2								
3		Sum of Income	Column Labels					
4	Row Labels	Beach	Cape	Coral	Haven	Sands	Tropics	Grand Total
5	Ball	2341	2043	2216	2804	2872	2559	14835
6	Dive	2555	2813	2943	2799	2713	2213	16036
7	Food	6684	6612	6470	5264	5502	5397	35929
8	Polo	1386	1155	1349	1270	1473	1311	7944
9	Spa	6792	5721	6928	6699	6985	6436	39561
10	Swim	9147	8432	9610	9438	7630	7735	51992
11	Grand Total	28905	26776	29516	28274	27175	25651	166297
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

k3. Drag **Month** down to the **Rows** area, just above **Item**.

k4. Right-click **Sum of Income** in cell **A3** and select **Value Field Settings**. In the dialog box, click **Average** and then click **Number Format**. Under **Category**, click **Currency**, and change the **Decimal places** to **0**. Be sure the **\$** is showing next to **Symbol**. Click **OK**. Click **OK** again.


k5. In cell **A12**, click  next to **May** to collapse that field. Repeat for **June**.

PivotTable – Construct 3-D Pie Chart – Solutions

11. Click the **Data** worksheet tab to make it active. On the **Insert** tab, in the **Table** group, click **PivotTable** and click **OK**. From the **PivotTable Fields** pane, drag the fields to the proper locations in the **Layout** area.

Rows	Σ Values
Pool	Sum of Income
Month	
Item	
Staff	

12. Double-click the new tab and type **Pool**.

13. In cell **A4**, right-click  next to **Beach**, point to **Expand/Collapse**, and select **Collapse Entire Field**.

	A	B
1		
2		
3	Row Labels	Sum of Income
4	Beach	28905
5	Cape	26776
6	Coral	29516
7	Haven	28274
8	Sands	27175
9	Tropics	25651
10	Grand Total	166297

14. Click anywhere in the PivotTable. On the **PivotTable Analyze** tab, in the **Tools** group, click **PivotChart**, click **Pie** select **3-D Pie**, and click **OK**.

Mac: Clicking **PivotChart** inserts a column chart. To change it, on the **PivotChart Design** tab, in the **Type**, group, click **Change Chart Type**, select **Pie**, and then **3-D Pie**.

15. On the **PivotChart Design** tab, in the **Location** group, click **Move Chart**. In the dialog box, replace **Chart1** with **3-D Pie**, and click **OK**.
16. Click anywhere inside the chart. Click the **Green Cross**, point to **Data Labels**, and click **More Options**.

Mac: On the **PivotChart Design** tab, in the **Chart Layouts** group, click **Add Chart Element**, **Data Labels**, **More Data Label Options**.

This opens the **Format Data Labels** pane. Click **Percentage** and deselect **Value**.

<input type="checkbox"/>	Value
<input checked="" type="checkbox"/>	Percentage

17. Click any data label to select them all and, on the **Home** tab, in the **Font** group, make the changes.
18. On the chart, click the title box to select it. Or, on the **PivotChart Format** tab, in the **Current Selection** group, click the arrow and select **Chart Title**. Then, click **Format selection**. In the formula box, type the title. Select the title and make the font changes.
19. Set up to print as usual.

PivotTable – Slicers – Solutions

- m1. Click the **Data** tab to make it active. On the **Insert** tab, in the **Table** group, click **PivotTable** and click **OK**. From the **PivotTable Fields** pane, drag the fields to the proper locations in the **Layout** area.

Double-click the new worksheet tab and type **Filtered**.

	A	B	C	D	E	F	G	H
1	Month	(All)						
2								
3	Sum of Income	Column Labels						
4	Row Labels	Ball	Dive	Food	Polo	Spa	Swim	Grand Total
5	Beach	2341	2555	6684	1386	6792	9147	28905
6	Cape	2043	2813	6612	1155	5721	8432	26776
7	Coral	2216	2943	6470	1349	6928	9610	29516
8	Haven	2804	2799	5264	1270	6699	9438	28274
9	Sands	2872	2713	5502	1473	6985	7630	27175
10	Tropics	2559	2213	5397	1311	6436	7735	25651
11	Grand Total	14835	16036	35929	7944	39561	51992	166297
12								
13								
14								
15								
16								

PivotTable Fields	
Choose fields to add to report: ⚙	
Search <input type="text"/>	
Drag fields between areas below:	
Filters Month	Columns Item
Rows Pool	Values Sum of Income

m2. Right-click **Sum of Income** in cell **A3** and select **Value Field Settings**. In the dialog box, click **Number Format**. Under **Category**, click **Currency**, and change the **Decimal places** to **0**. Be sure the **\$** is showing next to **Symbol**. Click **OK**. Click **OK** again.

m3. On the **PivotTable Analyze** tab, in the **Filter** group, click **Insert Slicer**. Click **Pool** and then **OK**.

On the **Slicer Options** tab, in the **Slicer Styles** group, click **Yellow**.

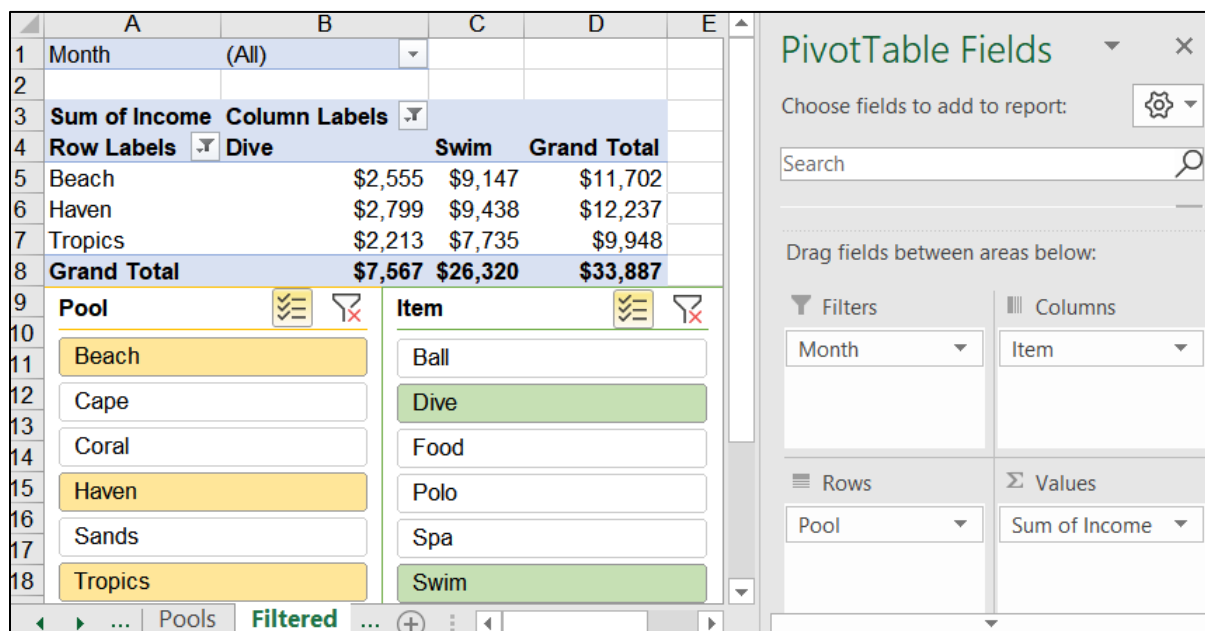
m4. On the **PivotTable Analyze** tab, in the **Filter** group, click **Insert Slicer**. Click **Item** and then **OK**.

On the **Slicer Options** tab, in the **Slicer Styles** group, click **Green**.

m5. Click each slicer heading and drag into position.

m6. In the **Pool** slicer, click the **Multi-Select** button . Then, click the pools you do **not** want leaving **Beach**, **Haven**, and **Tropics**.

Repeat the process in the **Item** slicer, leaving only **Dive** and **Swim**.



Month	Item	Sum of Income
Beach	Ball	\$2,555
Beach	Dive	\$9,147
Beach	Food	\$11,702
Beach	Polo	\$2,799
Beach	Spa	\$9,438
Beach	Swim	\$9,948
Haven	Ball	\$2,213
Haven	Dive	\$7,735
Haven	Food	\$9,948
Haven	Polo	\$2,555
Haven	Spa	\$9,147
Haven	Swim	\$2,799
Tropics	Ball	\$2,213
Tropics	Dive	\$7,735
Tropics	Food	\$9,948
Tropics	Polo	\$2,555
Tropics	Spa	\$9,147
Tropics	Swim	\$2,799
Grand Total		\$33,887

m7. Set up to print as usual.

PivotTable – Individual Reports – Solutions

n. On the **Filtered** worksheet, double-click **D5**, **Grand Total** for **Beach**. A new worksheet appears. Double-click the worksheet tab and type **Beach**.

PivotTable – Stacked Column Chart – Solutions

- o1. Click inside the table on the **Filtered** worksheet. On the **PivotTable Analyze** tab, in the **Tools** group, click **PivotChart**, select **Stacked Column**, and click **OK**



Mac: Clicking **PivotChart** inserts a column chart. To change it, on the **PivotChart Design** tab, in the **Type** group, click **Change Chart Type**, select **Column**, and then **Stacked Column**.

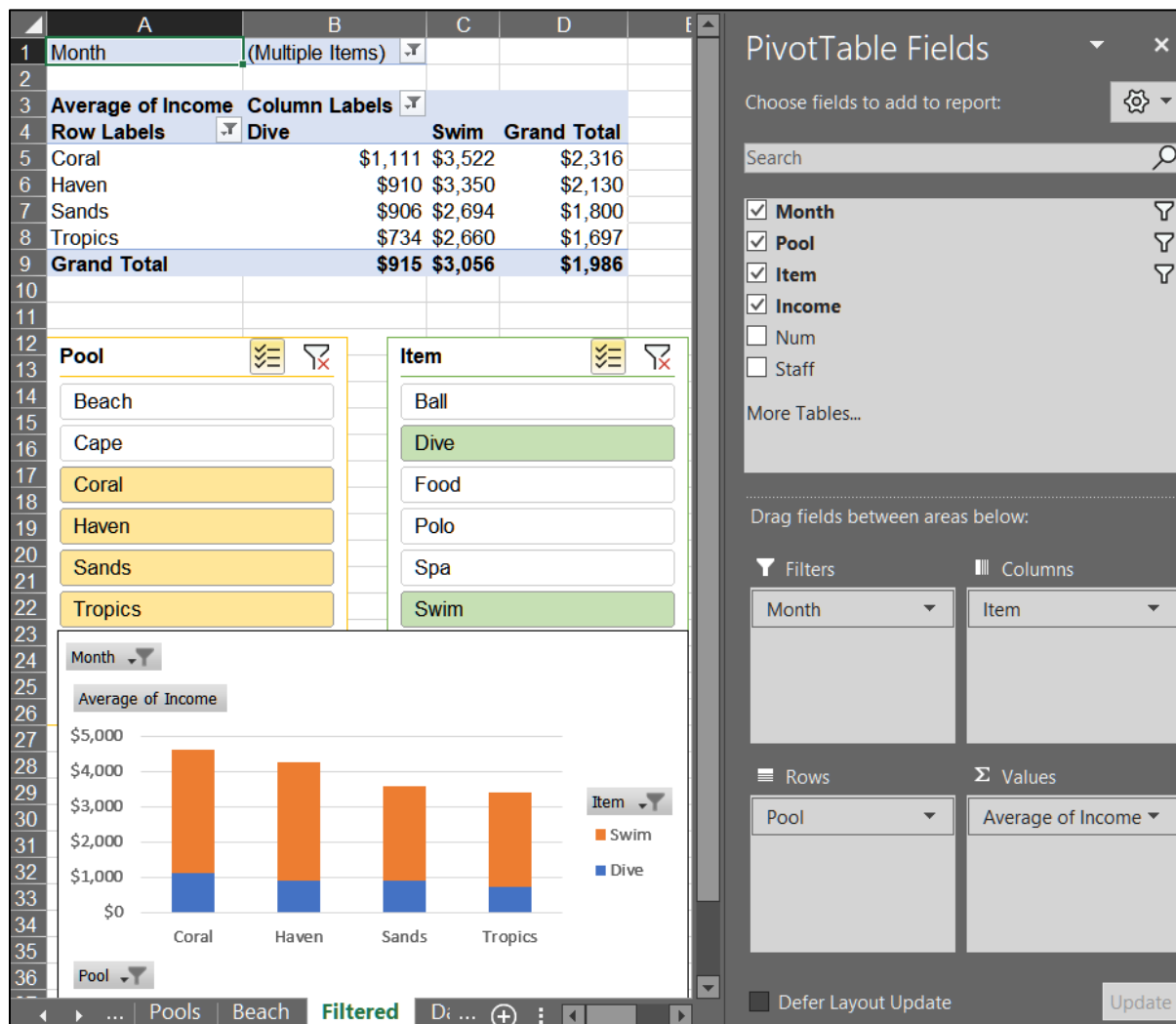
- o2. On the **PivotChart Design** tab, in the **Location** group, click **Move Chart**. Click the **New sheet** button, type **Stacked**, and click **OK**.
- o3. Windows users can use the **Filter Buttons** on the chart (they do not exist on the **Mac**). Alternatively, Windows and **Mac** users can use the cells in the PivotTable on the Filtered tab and/or the slicers

Filter Button on Chart	Cell in PivotTable	Slicer
Month ▼	B1	
Sum of Income	A3	
Pool ▼	A4 (Row Labels)	Pool
Item ▼	B3 (Column Labels)	Item

Here are the steps using the cells in the PivotTable:

- Click the arrow in cell **B1**, check **Select Multiple Items**, check **April** and **May**, and click **OK**.
- Click the arrow in cell **B3 (Column Labels)**, check **Dive** and **Swim**, and click **OK**. Or, use the **Item** slicer.
- Click the arrow in cell **A4 (Row Labels)** and check **Coral**, **Haven**, **Sands**, and **Tropics**, and click **OK**. Or, use the **Pool** slicer.

- o4. Right-click cell **A3 (Sum of Income)** and select **Value Field Settings**. Click **Average** and then **OK**.



- o5. On the **Stacked** chartsheet, click the green cross and select **Chart Title, Above Chart**.

Mac: On the **PivotChart Design** tab, in the **Chart Layouts** group, click **Add Chart Element, Chart Title, Above Chart**.

Select the **Chart Title** and type the title.

- o6. Click the title to select it. On the **Home** tab, in the **Fonts** group, select **12 pt** and **Arial Black**. Repeat for the legend, and axes.
- o7. On the **PivotChart Analyze** tab, in the **Show/Hide** group, click **Field Buttons**, and select **Hide All**.

Mac: Skip this. There are no **Field Buttons** on Mac.

- o8. Set up to print as usual.

PivotTable – Change Data and Update PivotTable – Solutions

- p1.** Click the **Data** worksheet, right-click its tab, select **Move or Copy**, check **Create a copy**, and click **OK**. Double-click the worksheet tab, type **Updated Data**, and tap **Enter**.
- p2.** Click inside the data table and, on the **Insert** tab, in the **Table** group, click **PivotTable**. Drag the fields to the appropriate boxes. Double-click the new worksheet tab, type **Updated Pivot**, and tap **Enter**.
- p3.** Click the **Updated Data** worksheet and change the value in cell **D2** from **\$2,009** to **\$40,000**.
- p4.** Starting at cell **A110**, type the new data.
- p5.** Click the **Updated Pivot** worksheet. It still shows the original data.

	A	B	C	D	E	F	G	H
1								
2								
3	Sum of Income		Column Labels					
4	Row Labels		Ball	Dive	Food	Polo	Spa	Swim
5	Beach		2341	2555	6684	1386	6792	9147
6	Cape		2043	2813	6612	1155	5721	8432
7	Coral		2216	2943	6470	1349	6928	9610
8	Haven		2804	2799	5264	1270	6699	9438
9	Sands		2872	2713	5502	1473	6985	7630
10	Tropics		2559	2213	5397	1311	6436	7735
11	Grand Total		14835	16036	35929	7944	39561	51992

Right-click any number and select **Refresh**.

	A	B	C	D	E	F	G	H	I
1									
2									
3	Sum of Income		Column Labels						
4	Row Labels		Ball	Dive	Food	Polo	Spa	Swim	Souvenirs
5	Beach		2341	2555	6684	1386	6792	9147	
6	Cape		2043	2813	6612	1155	5721	8432	600
7	Coral		2216	2943	6470	1349	6928	9610	
8	Haven		2804	2799	43255	1270	6699	9438	
9	Sands		2872	2713	5502	1473	6985	7630	
10	Tropics		2559	2213	5397	1311	6436	7735	
11	Grand Total		14835	16036	73920	7944	39561	51992	600

The data are updated and appear in the PivotTable. Cell **H6** shows a value of **600** for the **Cape** pool in the new column for **Souvenirs**. Cell **D8**, **Haven Food**, has changed from **5264** to **43255**.

- p6.** Click a tab and drag it into the correct position.

Information on the Excel Exam

The first exam will cover only Excel. You **may not submit** any Excel homework on or after the day the exam is sent to you.

Date and Time: Check your syllabus for the date and time.

Location: On your own Windows or Macintosh computer.

Time Allowed: I will email the exam to you in the morning and you will have to upload your zipped solution folder to Canvas by the afternoon of the next day.

Materials: I will email you a pdf copy of the exam questions and the original files you are to modify.

Submission: You will submit your exam in the same way as you did for the homework except you will NOT send pdf files. Instead, you will submit your modified Excel files so that I can see your formulas as well as the displayed results. **Do the exam as soon as you get it.** Do not wait until the last minute. If you miss the submission deadline you will receive a score of 0.

Preparation: Before exam day, be sure you have gone over **HW06-1 Sample Exam Questions for Excel** a few times before exam day. Be sure you have a reliable internet connection and computer. You may use either a Windows computer or a **Mac**. The exam will work on both platforms.

Questions: If you have questions during the exam, email me. Of course, I will not give you any help or hints, but if you think something is wrong with your copy of the exam let me know immediately.

Honesty: The exam is open book and notes, but you may NOT discuss the exam or get any help from anyone else or do the exam with anyone else. Doing so will result in your receiving a 0 for the exam and an F for the course.

Project 7

Word Chapter 1: Creating Documents

Step 1 Read Read the introductory material on page 103 of the textbook.

Step 2 Activities Turn on the computer and do the following:

Project 1A: Start at the top of page 105.

Instead of **Activity 1.01 step 1** do the following:

1. Open a blank Word document and save it to your **Word Files** folder using the name **Lastname_Firstname_1A_Flyer**

*You are not going to use sub folders (e.g., Word Chapter 1). Instead, so you can see them all at once, save all your Word files in the **Word Files** folder you downloaded on page **SG11**.*

2. Complete the rest of the Activities through step 6 on page 123. Do **NOT** do steps 7 and 8 in **Activity 1.16** on page 123.
3. **Return here** when you have completed Project 1A on page 123.

Do NOT do *GO! With Google Docs*

Project 1B: When you have completed Project 1A, start at the top of page 127.

Instead of **Activity 1.17 step 1** do the following:

1. Navigate to your **Word Files** folder and open **w01B_Programs**, which is one of the files you downloaded at the start of the term.
2. Save the file in your **Word Files** folder using the name **Lastname_Firstname_1B_Programs**
3. Complete the rest of the Activities through step 4 on page 146. Do **NOT** do steps 5 and 6 in **Activity 1.29** on page 146.
4. **Return here** when you have completed Project 1B on page 146.

Do NOT do *GO! With Google Docs* or *GO! To Work*

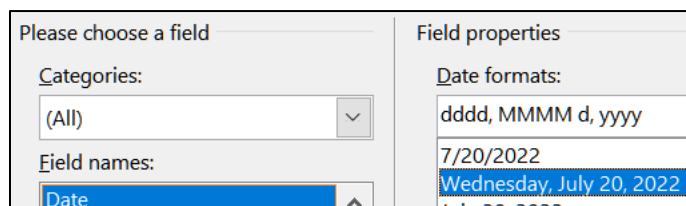
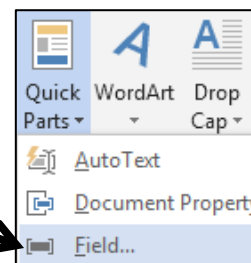
Step 3 Homework After you have completed Projects A and B return here, do the following additional activities, and turn them in for grading.

HW07-1 Flyer (Based on Project 1A)

Problem: How can you create a flyer to advertise an upcoming event?

- a. Open the document **Lastname_Firstname_1A_Flyer**, which you created while following the directions in the textbook and saved on page 123.
- b. Save the document in the **Word Files** folder using the name **HW07-1 HWID 1A Flyer Done**
- c. The orange textbox is too large and will get in the way of text you soon will add.
 1. Make the text in the orange textbox 12 pt.
 2. Make the textbox 0.75 inch high and 3.5 inches wide.
 3. Move the textbox so it is in the lower right corner of the page.
- d. In this project you learned how to insert a **field code** that displayed the name of the file in the footer. This is a bit different from Excel but the result is the same. Insert a few more field codes by doing the following:

1. Move the insertion point to the bottom of the document, just to the right of the word **website**.
2. Tap **Enter twice**, type **Today's Date:** and then a space.
3. On the **Insert** tab, in the **Text** group, click the **Quick Parts** arrow and select **Field**.
4. In the **Field names** group, scroll down and click **Date**.
5. In the **Date formats** group, select the format that has day, month, date, and year.

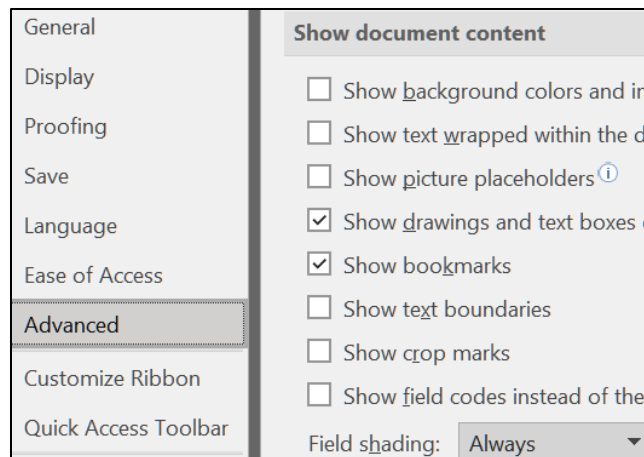


Mac: Click **Options**, click the format you want, click **Add to Field**.

6. Click **OK**. The current date will be shown.

7. To make it easy to identify text that is the result of a field code, tell Word to highlight all fields in the document by doing this:

Click the **File** tab, click **Options**, click **Advanced**, scroll down to the **Show document content** group, click the **Field shading** arrow, and select **Always**.



Mac: To have the field codes always shaded, from the **Word** menu, select **Preferences**, **View** and, next to **Field shading**, select **Always**.

8. Click **OK**. The date now appears with a shaded background. However, the shading will not appear on the printed copy.

Today's Date: Wednesday, July 20, 2022

9. Tap **Alt + F9** to view the actual field code. If that does not work, try **Fn + Alt + F9**. If that does not work, point to the field, right-click, and select **Toggle Field Codes** (works on **Mac**).

Today's Date: { DATE \@ "dddd, MMMM d, yyyy" * MERGEFORMAT }

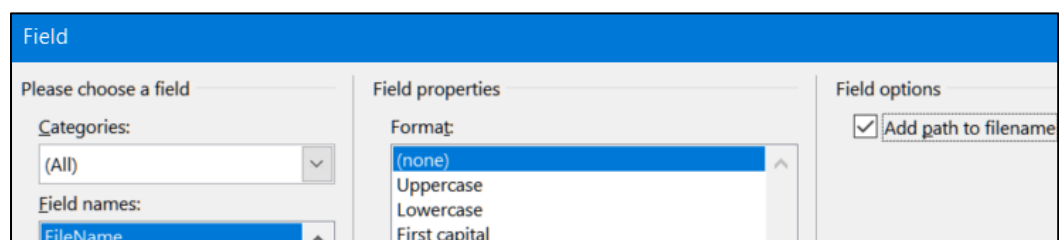
To show the results of the field codes, you would tap **Alt + F9** again. But, **do not do that yet**. **Alt + F9** is called a toggle because it switches (toggles) between two things.

10. Use the same technique to insert, under **Today's Date**, enter the following text and fields, one per line.

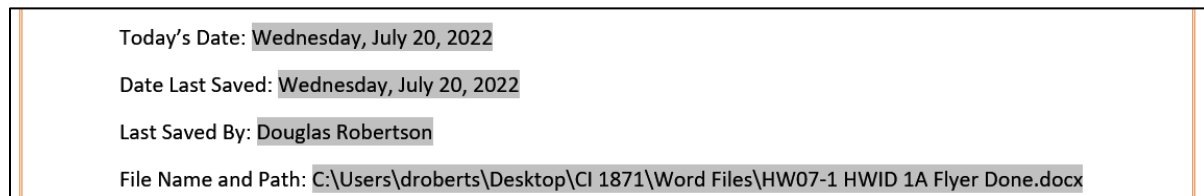
Date Last Saved: SAVEDATE

Last Saved By: LASTSAVEDBY

File name full location: FILENAME For this one, when you insert the file name field, click the box **Add path to filename** (the **path** is the location):



This shows the complete location just like you did in Excel. Tap **Alt + F9** to show the field name results.



- e. You are going to add a footer that contains the file name for every Word document you save. Here is a quick way of doing that using Word's **AutoText** feature. First, you will add **AutoText** to the **Quick Access Toolbar**. Here is what mine looks like:

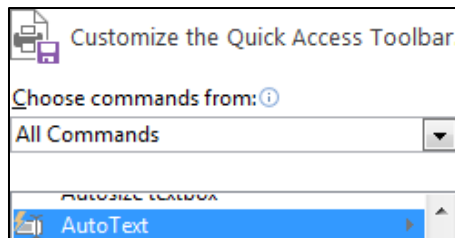



1. Click the **File** tab, click **Options**, and click **Quick Access Toolbar**.

Mac: From the **Word** menu, select **Preferences**, click **Ribbon & Toolbar**, click **Quick Access Toolbar** tab.

2. In the list under **Choose commands from**, click **All Commands**.
3. Scroll through the list of commands until you see **AutoText**.

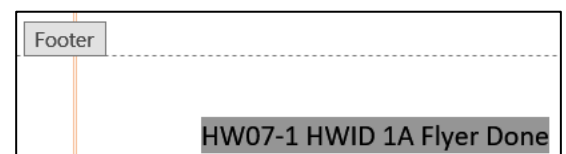
4. Click **AutoText**.



5. Click **Add >>**. The **AutoText** button  appears in the **Quick Access Toolbar**.
6. Click **OK**.

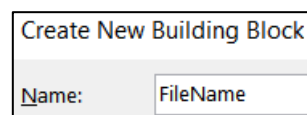
- f. To add an entry to the **AutoText** gallery, do the following:

1. Select the text that you want to add to the **AutoText** gallery. In this case, double-click the footer area where the file name appears and select the file name field code.

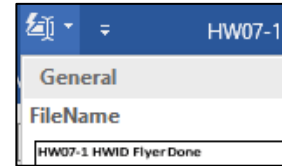


2. In the **Quick Access Toolbar**, click **AutoText**, and then click **Save Selection to AutoText Gallery**.

3. Type **FileName** in the **Name** box of the **Create New Building Block** dialog box. Leave the other boxes as they are.



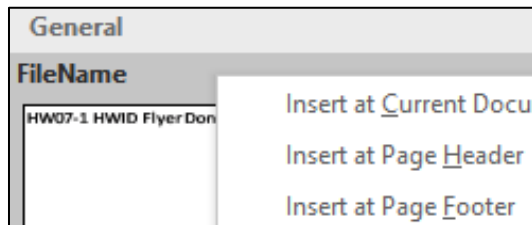
4. Click **OK**.
5. Click the **AutoText** button and you will see the **FileName** entry you just created.



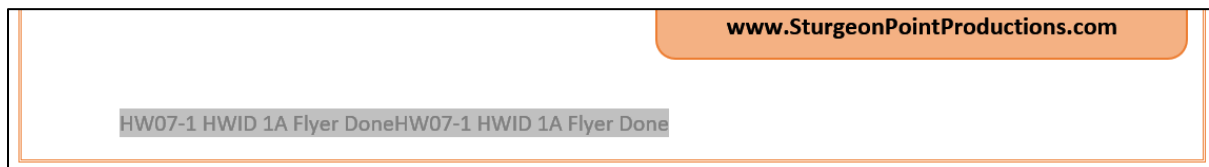
Even though the actual file name shows the **AutoText** entry it is really the field code that will change if you change the file name. Any time you want the field name inserted, simply select it from the **AutoText** button.

- g. You can have Word insert the file name field code directly into the footer without having to open the footer first.

1. On the **Quick Access Toolbar**, click the the **AutoText** button, point to **FileName**, right-click, and select **Insert at Page Footer**.



The file name field code is inserted directly into the footer (now the file name is there twice). If necessary, adjust the orange textbox so the file names in the footer are visible.



2. Save the document.

Depending on how your system is set up, the fields may not have automatically updated their values. To do that select the four lines in the body of the document that contain field codes, and then tap **F9**. Remember, on a laptop you may need to use the **fn** key also.

Mac: Right-click and select **Update Field**.

This will update the fields. You may have to do the same for the field names in the footer.

- h. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.

HW07-2 Programs (Based on Project 1B)

Problem: How can you create a flyer that advertises available internships?

- a. Open the document **Lastname_Firstname_1B_Programs**, which you created while following the directions in the textbook and saved on page 146.
- b. Save the document in the **Word Files** folder using the name **HW07-2 HWID 1B Programs Done**
- c. Do the following to adjust the title so that it is on two lines.

1. On the **Home** tab, in the **Paragraph** group, click the **Show/Hide button**  so you can see the paragraph codes.



shows where the **Enter** key has been tapped. It indicates a new paragraph.

- a dot shows where the **Spacebar** has been tapped.

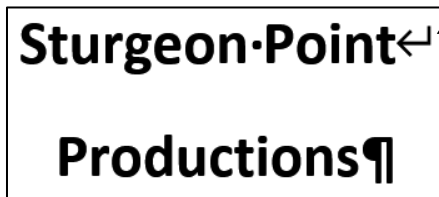


a right-pointing arrow shows where the **Tab** key has been tapped.

.....Page Break..... indicates a manual page break.

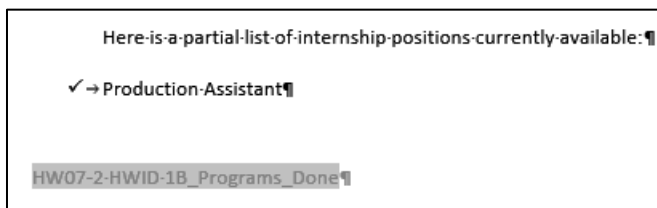
.....Section Break (Next Page)..... indicates a section break.

2. In the title, click just to the left of the word **Productions**.
3. Tap the **Backspace** key to remove the blank space.
4. Tap **Shift + Enter** to insert a manual line break. It is indicated by a left-pointing arrow



This means the two lines are still considered a single paragraph. If you had tapped **Enter** the two lines would be considered separate paragraphs.

- d. Scroll down so you can see the break between pages 1 and 2. Notice how the second list is split between the two pages.



If possible, it is a good idea to keep all items of a list on a single page so the reader can see all lines in the list at once.

Fix this by doing the following:

1. Select the text from **Here is a partial list...** through the end of the list.
2. Right-click and select **Paragraph**.
3. Click the **Line and Page Breaks** tab.
4. Check the first three boxes.

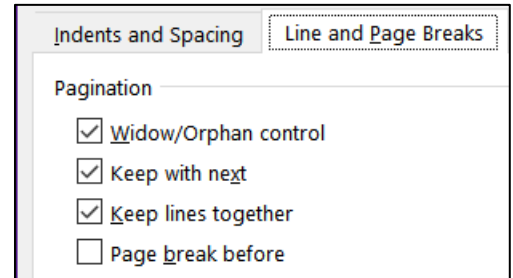
Widow is the last line of a paragraph that appears by itself at the top of a page. It is considered good form to force a second line to accompany a widow.

Orphan is the first line of a paragraph that appears at the bottom of a page by itself. It is considered good form to send an orphan to the next page to rejoin its paragraph.

Keep with next forces the current paragraph to appear on the same page as the next paragraph. This is good for lists and for rows of tables (so the table will not split across a page break) and subheads (so the subhead will stay with its following text).

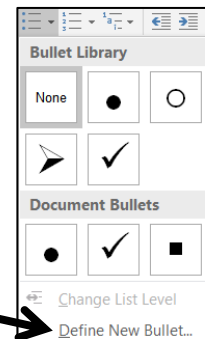
Keep lines together forces a paragraph to have all of its text on the same page, rather than split between the bottom of one page and the top of the next. This is good to do for short paragraphs.

Page break before. This puts the text on the next page no matter what.

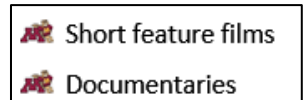


5. Click **OK**; selected items now are together on page 2.
- e. Change the bullet type on the first page:

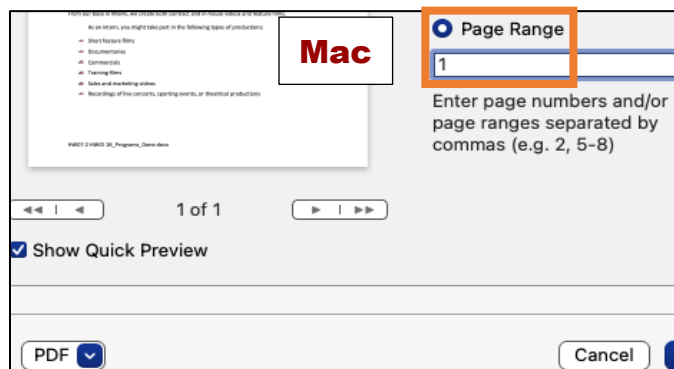
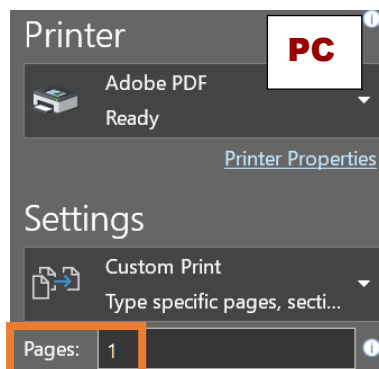
1. Select the first bulleted list and, on the **Home** tab, in the **Paragraph** group, click the **Bullet** icon arrow, and select **Define new Bullet**.
2. Click **Picture**.
3. Click **Browse** next to **From File**.



4. Navigate to the **Word Files** folder, select **HW07-2 Goldy Original**, click **Insert** and **OK**. If the image of Goldy cannot be added to the gallery, drag the file **HW07-2 Goldy Original** to the desktop and try again. If that fails, use any image.



- f. Tap **Ctrl + p** and print only page 1. Your print dialog should look like this:

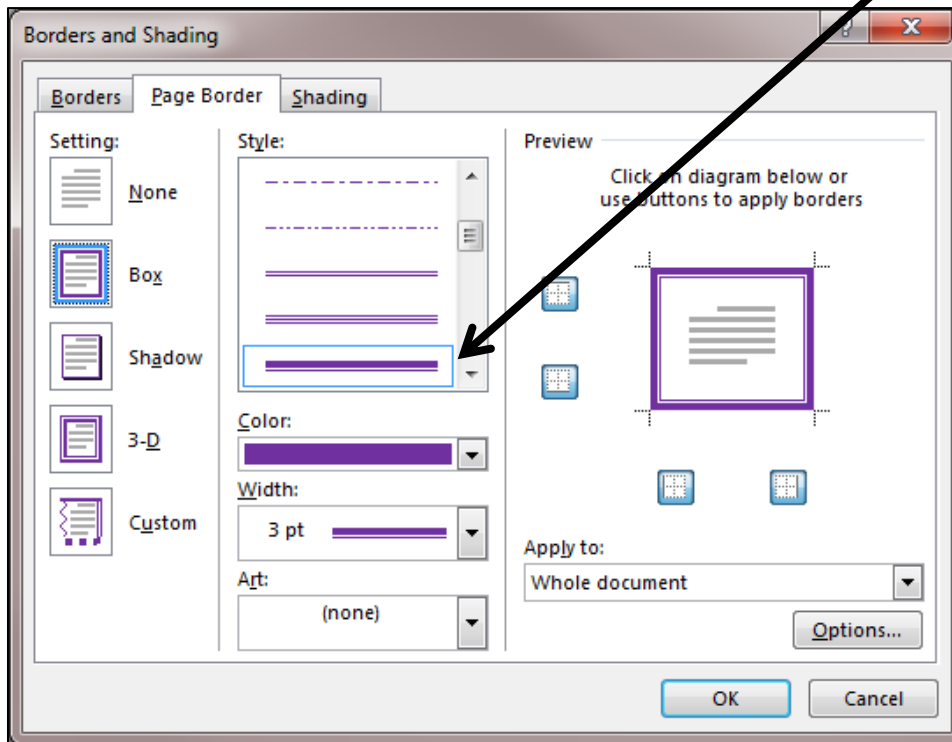



Make needed corrections, print, save the document, and close it.

HW07-3 Agenda

Problem: How can you create a draft agenda for a club meeting?

- Open the document **HW07-3 Agenda Original**, which is one of the files you downloaded at the start of the term.
- Save the document in the **Word Files** folder using the name **HW07-3 HWID Agenda Done**
- Insert a footer that contains the name of the file.
- Change all four margins to **1.25** inches.
- Put a border on the page. The border should have a purple thick and thin 3 pt line (**Design, Page Background, Page Borders**).




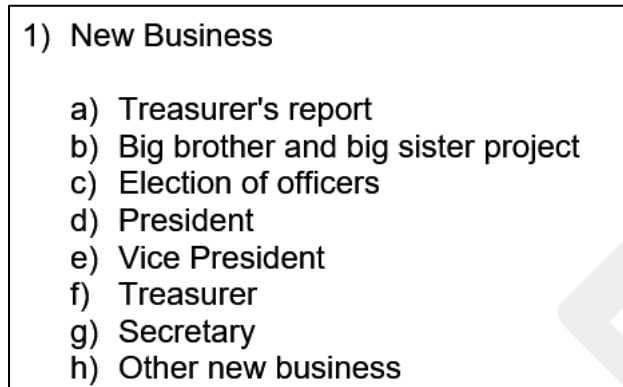
- Insert a **Watermark** that says **Draft** slanted across the page (**Design, Page Background, Watermark**)
- Make the font of the first two lines of the Agenda Arial Black, 18 pt, and red.
- Set up the agenda as an outline.
 - Select the lines starting with **New Business** and continuing all the way through **Continue discussion of fundraising projects**.
 - On the **Home** tab, in the **Paragraph** group, click the **Multilevel List** arrow  and then click this format:

1)	_____
a)	_____
i)	_____

The list will appear with numbers going from **1** to **12**.

- i. Do the following to change the outline level of the lines from **Treasurer's report** through **Other new business** so that they are subordinate to **New Business**.

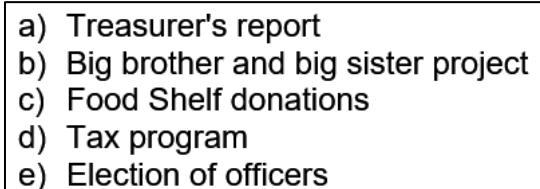
1. Select those lines.
2. On the **Home** tab, in the **Paragraph** group, click the **Increase Indent** button . Notice how the numbers of the selected lines are automatically changed to letters.



- j. Change the outline level of the list of officers.
1. Select the lines from **President** through **Secretary**.
 2. Click the **Increase indent** button. The list of officers will be indented and listed with Roman Numerals.
- k. Follow a similar procedure to change the outline level of the last two lines (**Reading of minutes** and **Continue discussion of fundraising projects**) so that they are subordinate to **Old Business**.
- l. To see how Word will automatically adjust the lettering of the items, add the following two lines just under **Big brother and big sister project**:

Food Shelf donations
Tax program

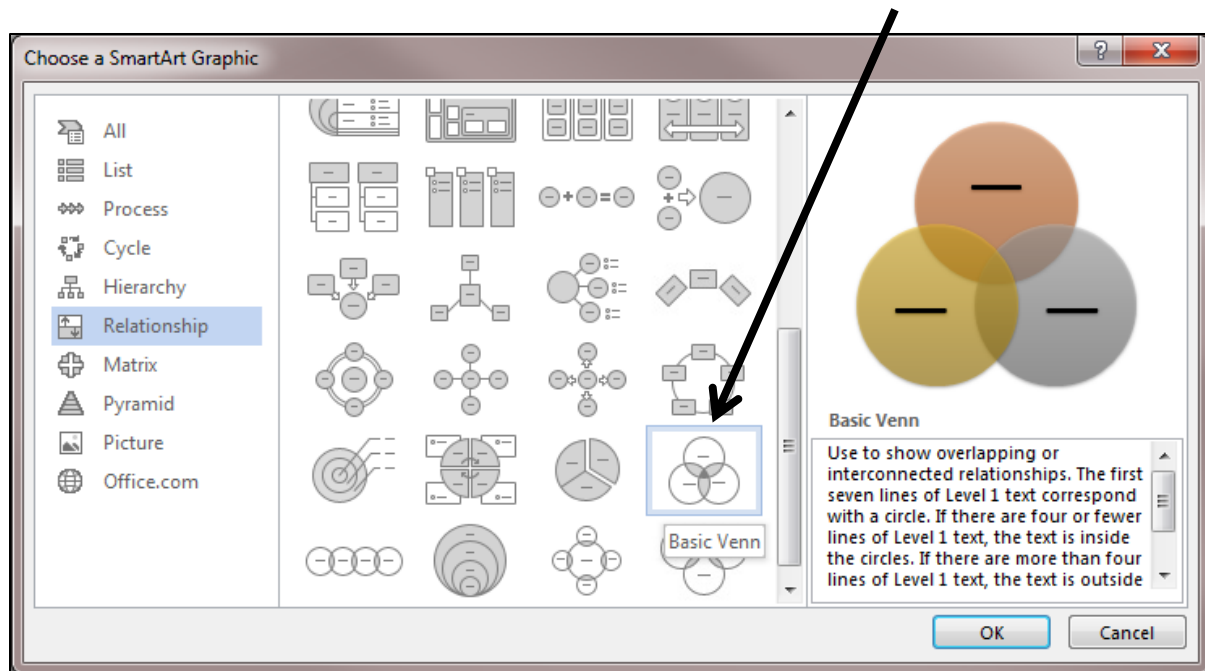
Notice how the items are automatically given letters and the letters of following items are changed.



- m. Delete the line with **Vice President**. Again, notice how the numbers for **Treasurer** and **Secretary** are automatically updated.

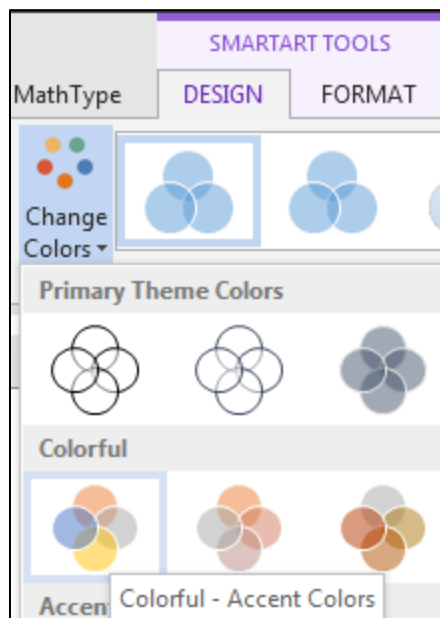
n. Insert a **SmartArt** object.

1. Tap **Ctrl + Home** to move to the top of the document.
2. On the **Insert** tab, in the **Illustrations** group, click the **SmartArt** button.
3. From the **Relationship** category, choose the **Basic Venn** shape.



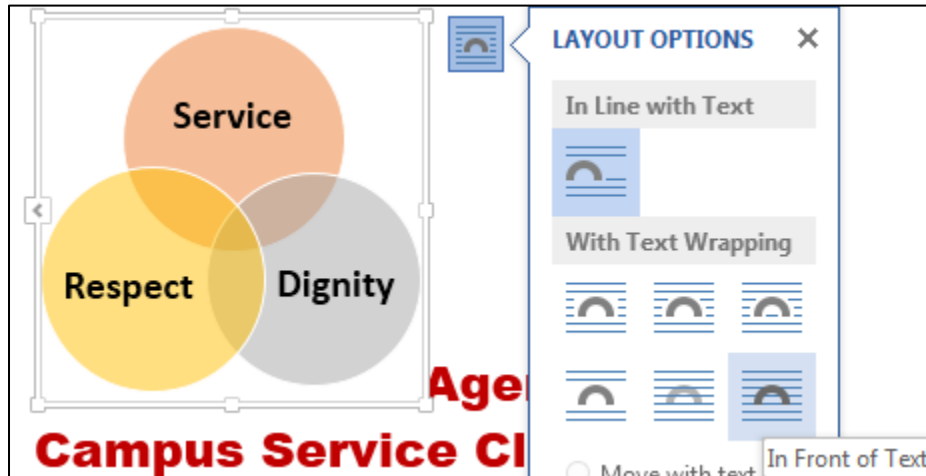
Click **OK**.

4. In the top circle, type **Service**; in the left circle, type **Respect**; in the right circle, type **Dignity**.
5. Apply a **Colorful** theme.



6. Make the font purple **12 pt Comic Sans MS**.
7. Make the height and width of the object **2 inches**.



8. Set the Wrap Text to In Front of Text.



9. Move the object to the upper right corner just inside the page border.
- a. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.

HW07-4 Brochures

Problem: How can you create a memo outlining features of a brochure that will be published?

- a. Open the document **HW07-4 Brochures Original**, which is one of the files you downloaded at the start of the term.
- b. Save the document in the **Word Files** folder using the name **HW07-4 HWID Brochures Done**
- c. Insert a footer that contains the name of the file.
- d. Set up the company logo and memo header by doing the following:
 1. Insert the JPG file, **HW07-4 Brochures Logo Original**.
 2. With the image selected, on the **Drawing Format** tab, in the **Arrange** group, click the **Wrap Text** arrow and select **In Front of Text**. You can also do this by clicking the **Layout Options** icon  and selecting the **In Front of Text** icon 

Drag the logo so it is in the upper left corner of the page, about a quarter inch from the top and side.
3. Insert a textbox (**Insert, Text, Text Box, Draw Text Box**) and enter this text:

PO Box 75732
 Colorado Springs, CO 80970
 719-638-9511
 JohnWells@ad-excellence.net

4. Change the font to 10 pt **Comic Sans MS**.
5. Move the textbox to the upper right corner of the page about a quarter inch from the top and side. It should have no border or fill (**Drawing Format, Shape Styles, Shape Outline, No Outline**).
6. Select the word **MEMO** and, on the **Insert** tab, in the **Text** group, click the **Word Art** arrow, and select the pink **A**.
7. Move the **Word Art** so everything is aligned like this:

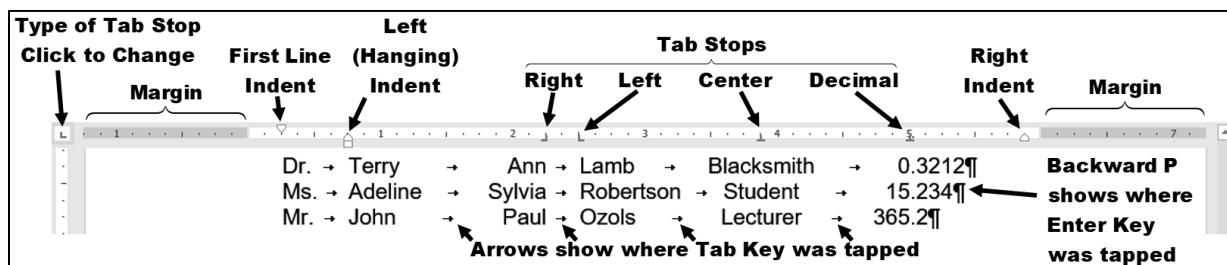


- e. Change the tab settings on the first 7 lines of the memo. Keep this in mind:

Page Margins are the amounts of blank white space at each side of the page (left and right, top and bottom).

Paragraph Indents are the little triangles that show where the first line, the left edge, and the right edge of a paragraph are located.

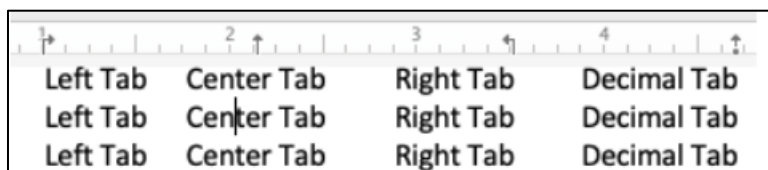
Tab Stops are locations where you want text to line up. When you tap the **Tab** key the text moves to line up with a tab stop.






In the above, notice how the

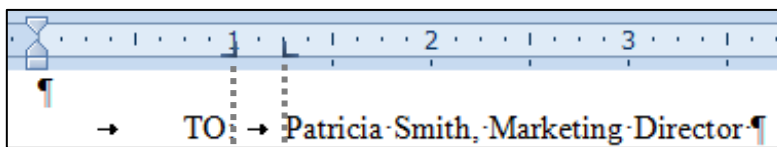
- middle names (Ann, Sylvia, Paul) are lined up on the **right**
- last names (Lamb, Robertson, Ozols) are lined up on the **left**
- occupations (Blacksmith, Student, Lecturer) are lined up in their **middles**
- numbers are lined up on their **decimal** points



Mac: Tab stops look a bit different on a **Mac**.



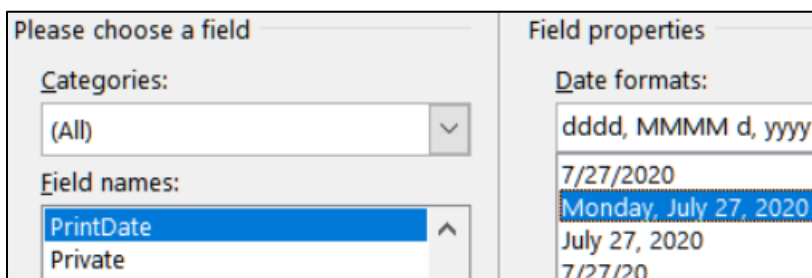
1. Select the 7 lines starting with the line that contains **TO** and ending with the line that contains **DATE**. Set a right tab stop  at 1 inch and a left tab stop  at 1.25 inches.

2. Click the **Show/Hide** button  to show the codes. Click just to the left of **P** in **Patricia** (between the **O** in **TO** and the **P**) and then tap the **Tab** key. It looks like nothing happened! Now, click just to the left of the **T** in **TO:** and tap **Tab**. Notice how the colon in **TO:** lines up with the right tab stop and the **P** in **Patricia** lines up with the left tab stop.



Remember, the **Tab stops** are the markers on the ruler  and  that show where the text will be aligned, while the **Tabs** are the little arrows → that show where the **Tab** key was tapped to move the text.

3. Repeat this procedure for the **FROM**, **SUBJECT**, and **DATE** lines.
4. Click to the right of the tab arrow in the **DATE** line. Insert the **PrintDate** field, which will display the date the memo was printed (**Insert**, **Text**, **Quick Parts**, **Field**). Set the date format to show the day, month, date, and year.



5. Click **OK**. The field will display **XXX, XXX 0, 0000** because you have not yet printed the document.

→ DATE: → XXX,XXX 00,0000

When you print, the proper date will appear.

6. Tap **Alt + F9** to see the field code.

→ DATE: → {PRINPTDATE \@ "dddd, MMMM-dd, yyyy" * MERGEFORMAT}


Mac: Right-click and select **Toggle Field Codes**.

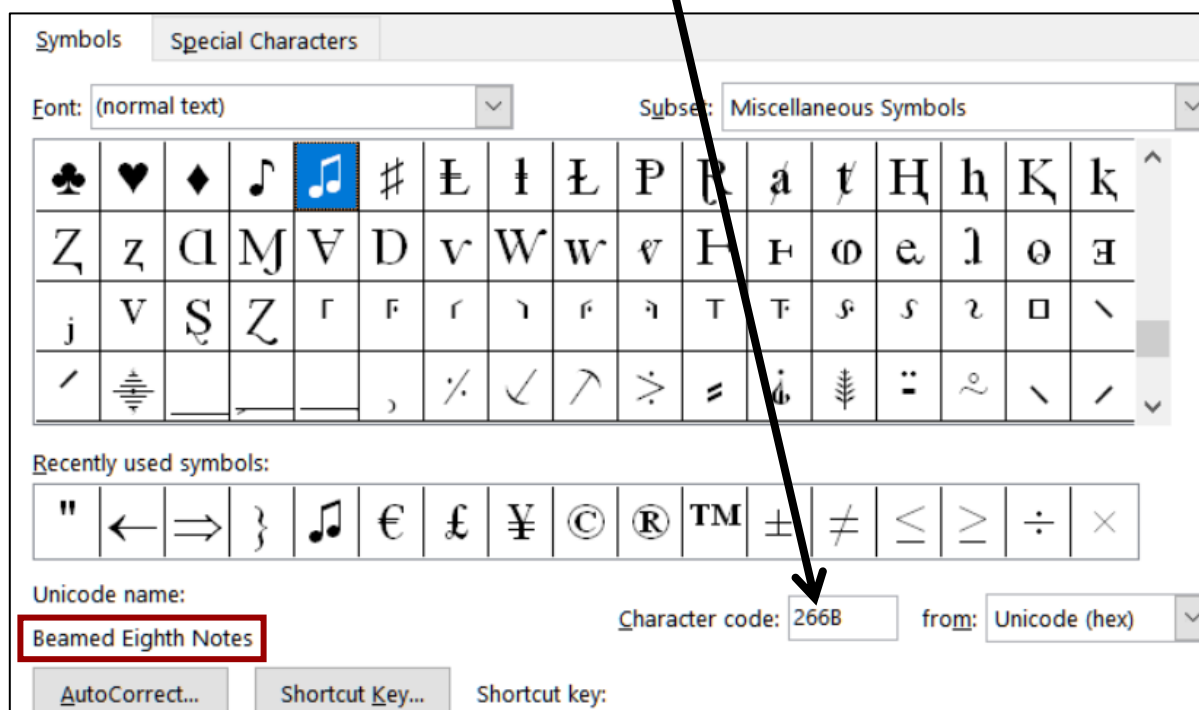
7. Tap **Alt + F9** again to see the result.
- f. Click in the paragraph that begins with **The concept for the new...** and set the first line indentation to 0.25 inch. You can do this by right-clicking the paragraph and then selecting **Paragraph** from the shortcut menu or by sliding the upside down triangle ▼ on the left side of the ruler to 0.25.
- g. Click in the paragraph that begins **I need to schedule....** Tap **Ctrl + y**. This is the shortcut for the **Repeat** command. It repeats your last action or text entry. The first line indent is set to 0.25 inch.

- h. Move the insertion point to the left of the first word of the paragraph that begins **Be prepared to discuss**. You are to insert a bullet here without using the automatic bulleted list feature. Like many of Word's automated features, the automatic bulleted list feature can save time, but it also can be annoying and do things behind your back that you do not want.

1. On the **Insert** tab, in the **Symbols** group, click **Symbol** and then **More Symbols**.
2. In the dialog box, if necessary click the **Symbols** tab.
3. From the **Font** box drop-down menu, select **(normal text)**

Mac: Instead of steps 4 and 5, select any symbol you wish.

4. From the **Subset** box drop-down menu, select **Miscellaneous Symbols**.
5. Scroll down until you see the symbol for beamed eighth notes . If you have trouble finding it, type **266B** in the **Character code** box near the bottom of the window. You may use a different symbol if you wish.



The lower left corner says you have selected **Beamed Eighth Notes** and it gives you the option of creating a **Shortcut Key** for this symbol. Let's do that so that if you want to insert this symbol again all you have to do is tap the shortcut.

6. Click **Shortcut key**.
7. Click in the box under **Press new shortcut key** and then tap **Alt + n** (n for note) or any other key combination you wish.
8. Click **Assign** and then click **Close** (or tap **Esc** key).
9. Click **Insert** and then click **Close**. The symbol is inserted.
10. In the **Symbol** dialog box, click **Close**.
11. Tap **Tab** to move the text **Be prepared to discuss...** to the next tab stop.

12. Follow the same procedure, or use the new shortcut key, **Alt + n**, to insert the **Beamed Eighth Notes** just to the left of **Have ready in...**

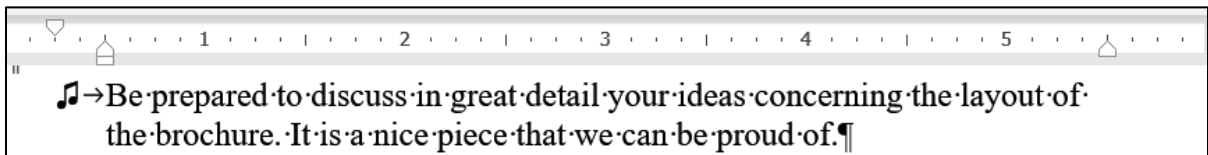
♪ → Be prepared to discuss in great detail your ideas concerning the layout of the brochure. It is a nice piece that we can be proud of.¶
 ¶
 ♪ → Have ready in report form your analysis of the marketability of the new product. Include the target population as well as revenue projections.¶

13. Select the two paragraphs you just worked on and use your **mouse** to slide the indent markers on the ruler as follows:

First line indent ▾ to 0.25 inch

Left indent (hanging indent) ▴ to 0.5 inch.

Right indent ▴ to 5.5 inches.



14. For the two paragraphs you just worked on, set a right tab stop with a dot leader at 5.5 inches by doing the following:

First, select the two paragraphs. Then:

Right-click and select **Paragraph**.

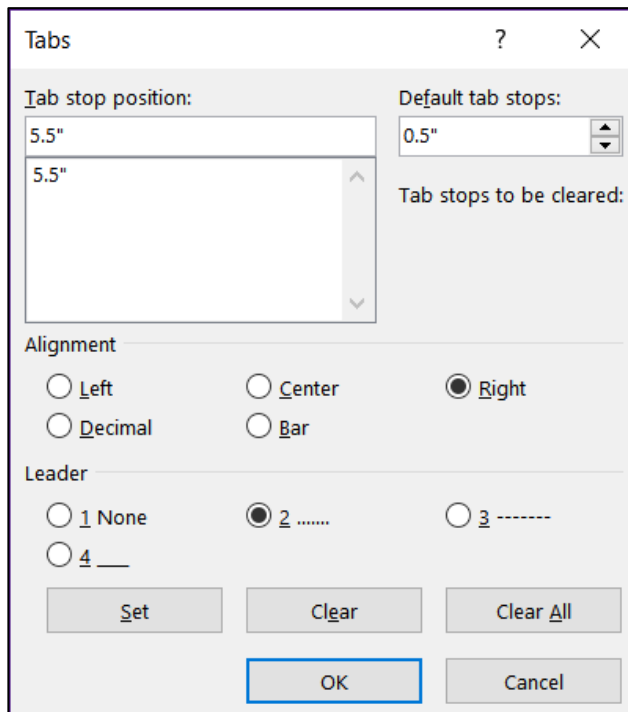
Click the **Tabs...** button.

Type **5.5** in the **Tab stop position** box.

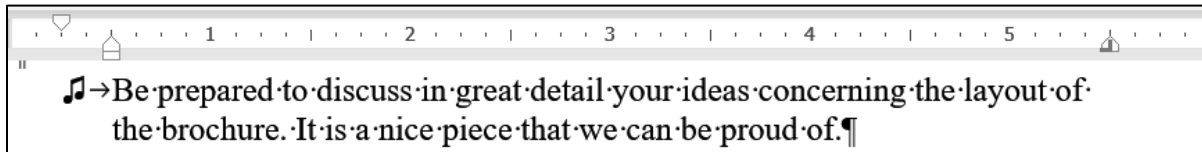
Click **Right** in the **Alignment** group.

Click **2....** in the **Leader** group.

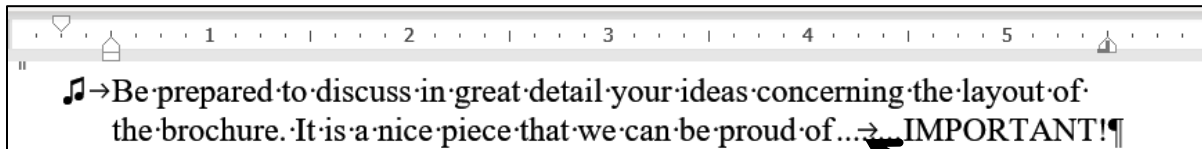
Click the **Set** button.



15. Click **OK**. The new right tab stop appears in the ruler.



16. In the first of the two paragraphs, click to the right of the words **proud of**, delete the period, tap the **Tab** key, and then type **IMPORTANT!**



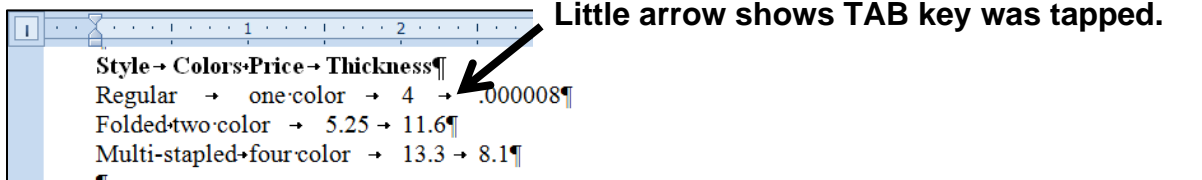
Dot leader

Depending on how your computer is set up, you might have noticed that the word **Be** in the first bulleted paragraph has a blue squiggly underline. Word does this to alert you that the grammar might be incorrect. It is like Word asking you “Are you sure this is the word you want?” In this case, it is.



- i. Use tabs to align the items in the list near the bottom of the document.
 1. The items are separated by a comma and a space. Replace the comma and space by a **TAB**. You can do that in one of two ways:
 - Use your mouse and the **TAB** key and make the changes one by one. This is easy but soooo unsophisticated and takes time.
 - OR, use Word’s **Find and Replace** feature as you did in Excel on page **SG140**. To use that, select the four lines and tap **Ctrl + h** to open the **Find and Replace** dialog box. Note that you can use wildcards in Word’s **Find and Replace**, but that is not necessary here.



Mac: From the menu bar, click **Edit, Find, Advanced Find and Replace, Replace**.



Type a comma and a space in the **Find what** box, type the **TAB** code, **^t**, in the **Replace with** box, and click **Replace All**. Twelve replacements will be made. When asked if you want to continue from the top of the document, click **No**.




2. Select the four lines and, on the ruler, insert the following tab stops:

Right tab stop at 2 inches  **Mac** 

Left tab stop at 2.5 inches  **Mac** 

Decimal tab stops at 4 and 5 inches.  **Mac** 

Bar tab stop at 5.5 inches. 

3. Click at the left of each line. Tap the **TAB** key to right align the first word of each line.

→	Style	→	Colors	→	Price	→	Thickness
→	Regular	→	one-color	→	4	→	.000008
→	Folded	→	two-color	→	5.25	→	11.6
→	Multi-stapled	→	four-color	→	13.3	→	8.1

- j. Changing the locations of the tab stops is easy. Do the following:

1. Select the four lines you just worked on.
2. Move the right tab stop to 1 inch (click it and drag to the left).
3. Move the left tab stop to 2 inches and set a dot leader for this tab (double-click any tab stop to open the **Tabs** dialog box).
4. Change the decimal tab stop at 4 inches to a left tab. To do that, click the tab stop and drag it down off the ruler. Then, set the tab type to **Left** and click at 4 inches. Notice that when you do this the numbers in the column no longer line up on their decimal points.
5. Drag the bar tab to 3 inches.

→	Style.....→.....	Colors	→	Price	→	Thickness
→	Regular.....→.....	one-color	→	4	→	.000008
→	Folded.....→.....	two-color	→	5.25	→	11.6
→	Multi-stapled.....→.....	four-color	→	13.3	→	8.1

6. Select only the line with the titles and change the decimal tab at 5 inches to a left tab at **4.75** inches. This lines up the title **Thickness** a bit better.

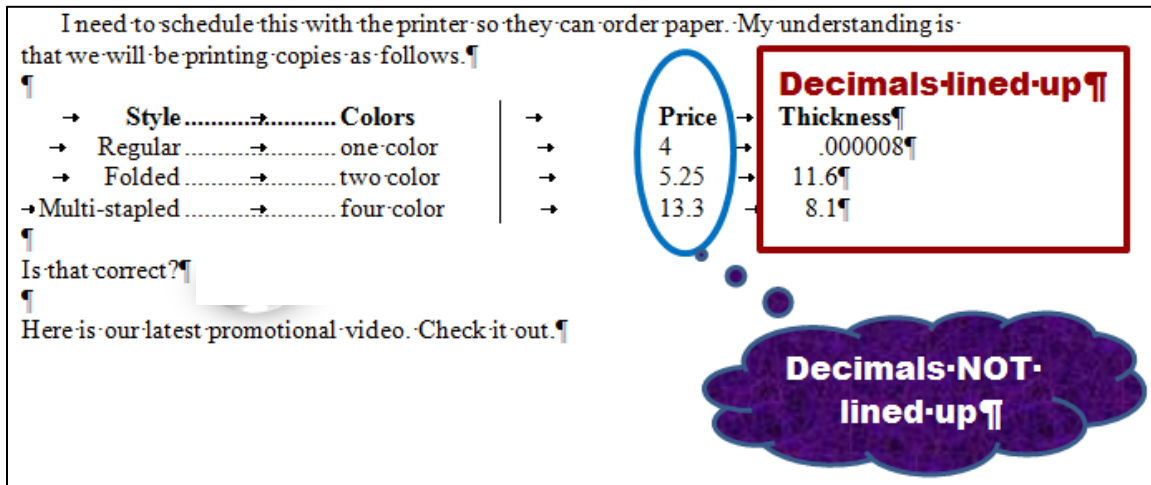
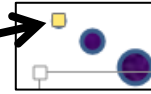
- k. Put in some textboxes to highlight parts of the memo.

1. Insert a textbox (**Insert, Text, Text Box, Draw Text Box**).
2. Type the text **Decimals lined up** and make it Arial Black 14 point red.
3. Make the textbox border red 3 pt and **Format the Shape Fill to No Fill**.
4. Adjust the position and size of the textbox so its box surrounds the last column of numbers.
5. Insert an oval and place it around the second column of numbers.
6. Set the oval to have no fill.
7. Make the border 3 pt and blue.
8. Adjust the position and size so the oval surrounds the second column of numbers.

Decimals lined up
Thickness
.000008
11.6
8.1

Price
4
5.25
13.3

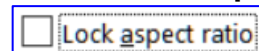
9. Insert a **Cloud Thought Bubble** (**Insert**, **Illustrations**, **Shapes**, **Callouts**).
10. Type **Decimals NOT lined up** and make the font Arial Black 14 pt white.
11. Set the **Fill** to **Texture**, **Purple mesh**.
12. Position the callout as shown below. To move the pointer part of the callout, click the little yellow box and drag it.



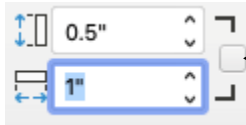
- I. When you fill out a form or write a paper for publication you typically are given a limit on the number of words or characters you may use. Word has a feature to help you determine this.
 1. Be sure nothing is selected and, on the **Review** tab, in the **Proofing** group, click **Word Count**. You should see that this document has **about** 161 words (plus or minus a few).
 2. Use the **Snipping Tool** to take a screenshot of the **Word Count** window and then close the window.
 3. Paste the screenshot into the document.
 4. Make the image 2 by 2 inches. You may notice that if you change one dimension to 2 inches, the other dimension automatically changes. Excel, Word, and PowerPoint do this to keep the same relative dimensions (called the **aspect ratio**) on an inserted picture.

To get around this, first select the Word Count image.


On the **Picture Format** tab in the **Size** group, click the launch dialog button to open the **Format Picture** pane. On the **Size** tab, uncheck **Lock aspect ratio** so you can change each dimension separately.



Mac: Remove the check in the box to the right of the height and width values.

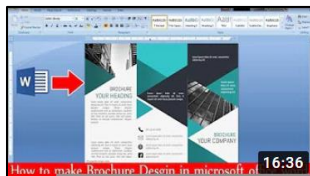


Then, enter **2** in the **Height** box and **2** in the **Width** box. Click **OK**

5. Click in a white area to deselect the Word Count image. On the **Insert** tab, in the **Illustrations** group, click the **Shapes** arrow and, under **Basic Shapes**, select the oval  This will display a cross. Drag the cross to display an oval.
 6. With the oval selected, on the **Shape Format** tab, in the **Size** group, make the height and width 2.85 inches so it is a circle.
 7. On the **Shape Format** tab, in the **Shape Styles** group, click the **Shape Fill** arrow and select yellow.
 8. Right-click the circle, and select **Send to Back**.
 9. Center the Word Count image in the circle.
 10. With the Word Count image selected, hold down the **Ctrl** key and click the circle. This selects them both.
 11. Right-click and select **Group**. This makes the two images act as one object so you can move both at the same time.
 12. Drag the Word Count/Circle group to the bottom right corner of the page.
- m. Insert a video on designing a brochure by doing the following:
1. Move to the end of the last sentence and tap **Enter** twice.
 2. Open your browser, type **youtube.com** in the address bar, and tap **Enter**.
 3. Type **brochure design in word** in the YouTube search box and tap **Enter**.
 4. Decide which video you want.

Mac: Take a screenshot of the video window. Switch to Word and paste the image. Then, switch back to your browser.

Open the video and copy the URL from the address bar. Here is the one I chose: <https://www.youtube.com/watch?v=nY9ayMpARHg>

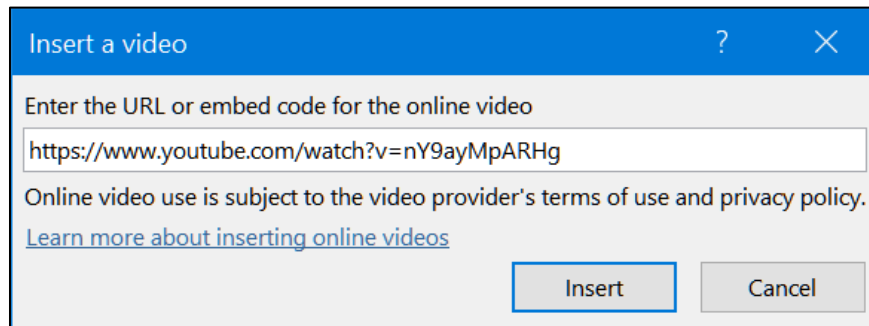


5. Return to your Word document, move to the line just below the last sentence, paste the URL, and then tap **Enter**.

Mac: Skip steps 6 and 7 below. Instead, right-click the screenshot, select **Hyperlink**, paste the URL in the box, and click **OK**.

6. On the **Insert** tab, in the **Media** group, click **Online Video**.

7. Paste the URL in the box.



Click **Insert**.

8. Make the video height **2** inches and position it just below the last sentence of the document. Right-click and select **Open link** to play the video.

Mac: Click the screenshot to play the video.

9. Save the Word document and close your browser.

n. Insert a motivational shape by doing the following:

1. Just to the right of **Is that correct?**, on the **Insert** tab, in the **Shapes** group, under **Basic Shapes**, select **Smiley Face**.

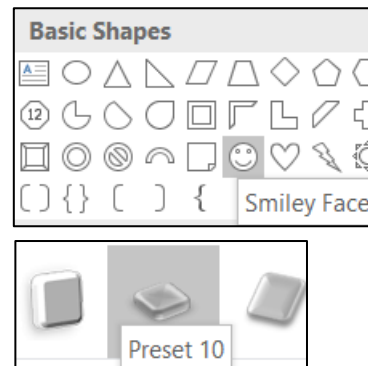
2. Drag the cross to open the smiley face.

3. Make the height and width **0.5** inch.

4. Apply the **Preset 10 Shape Effect**.

5. Make the fill color **red**.

6. Change the **Layout Option** to **In Front of Text** and move the shape so it is centered on the line.



- o. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.

Step 4 Submit Now, submit the following. Use these names for the pdf files:

HW07-1 HWID 1A Flyer Done

HW07-2 HWID 1B Programs Done Page 1 – Do NOT submit pages 2 or 3

HW07-3 HWID Agenda Done

HW07-4 HWID Brochures Done

Create a pdf file of the output for each of the above, place them in a folder called **HW07 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW07 Word Chapter 1: Creating Documents**.

Step 5 Backup Now would be a good time to backup your files.

Project 8

Word Chapter 2: Creating Letters and Tables

Step 1 Read Read the introductory material on page 169 of the textbook.

Step 2 Activities Turn on the computer and do the following:

Project 2A: Start at the top of page 171.

Instead of **Activity 2.01 step 1** do the following:

1. Navigate to your **Word Files** folder and open **w02A_Experience**, which is one of the files you downloaded at the start of the term.
2. Save the file in your **Word Files** folder using the name **Lastname_Firstname_2A_Resume**
3. To save time, instead of typing the text shown in several places in the textbook you may copy the text from the file **HW08-1 Resume Extra Text Original** and paste it in the locations described in the textbook:

Page 173, **Activity 2.02**, Step 2

Page 173, **Activity 2.02**, Step 3

Page 176, **Activity 2.03**, Step 11

Page 179, **Activity 2.06**, Step 4

4. The **Resume Assistant** is mentioned in **Step 4** on page 174. That is **NOT** installed on many computers so skip to **Step 9** on page 175.
5. Complete the rest of the Activities through step 16 on page 186. Do **NOT** do steps 17 and 18 in **Activity 2.10** on page 186.
6. Do **NOT** do **Activity 2.11** on pages 186-187.
7. **Return here** when you have completed Project 2A on page 185.

Do NOT do GO! With Google Docs

Project 2B: When you have completed Project 2A, start at the top of page 191.

Instead of **Activity 2.12 step 1** do the following:

1. Open a blank Word document and save it to your **Word Files** folder using the name **Lastname_Firstname_2B_Cover_Letter**
2. Complete the rest of the Activities through step 8 on page 205. Do **NOT** do steps 9 and 10 in **Activity 2.20** on page 206.
3. Do NOT do **Activities 2.21 through 2.24** on pages 206-211.


4. Return here when you have completed Project 2B on page 206.

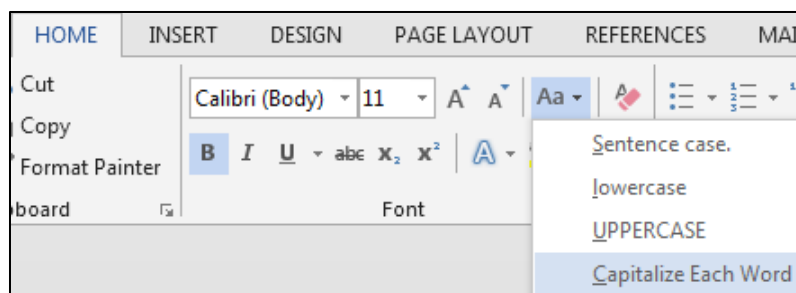
Do NOT do GO! With Google Docs or GO! To Work

Step 3 Homework After you have completed Projects A and B return here, do the following additional activities, and turn them in for grading.

HW08-1 Resume (Based on Project 2A)

Problem: How can you create a professional looking resume?

- Open the document [Lastname_Firstname_2A_Resume](#), which you created while following the directions in the textbook and saved on page 185.
- Save the document to your **Word Files** folder using the name [HW08-1 HWID 2A Resume Done](#)
- Make the following modifications.
 - On the **Table Layout** tab, in the **Table** group, if necessary, click **View Gridlines** so you can see the non-printing cell gridlines.
 - In the first column, select from **OBJECTIVE** through **HONORS AND ACTIVITIES**.
 - On the **Home** tab, in the **Font** group, click the **Change Case** button  and select **Capitalize Each Word**.



The letters are converted from all UPPERCASE so that each individual word is capitalized. This is really useful if you mistakenly tap the **CAPS LOCK** key and type a bunch of stuff that you did not want to be UPPERCASE.

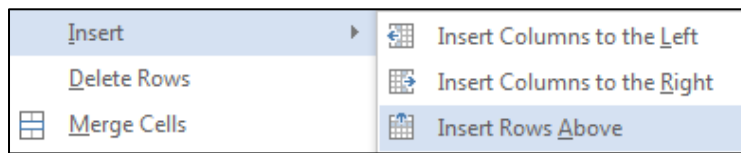
- Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.


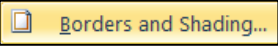

HW08-2 Cover Letter (Based on Project 2B)

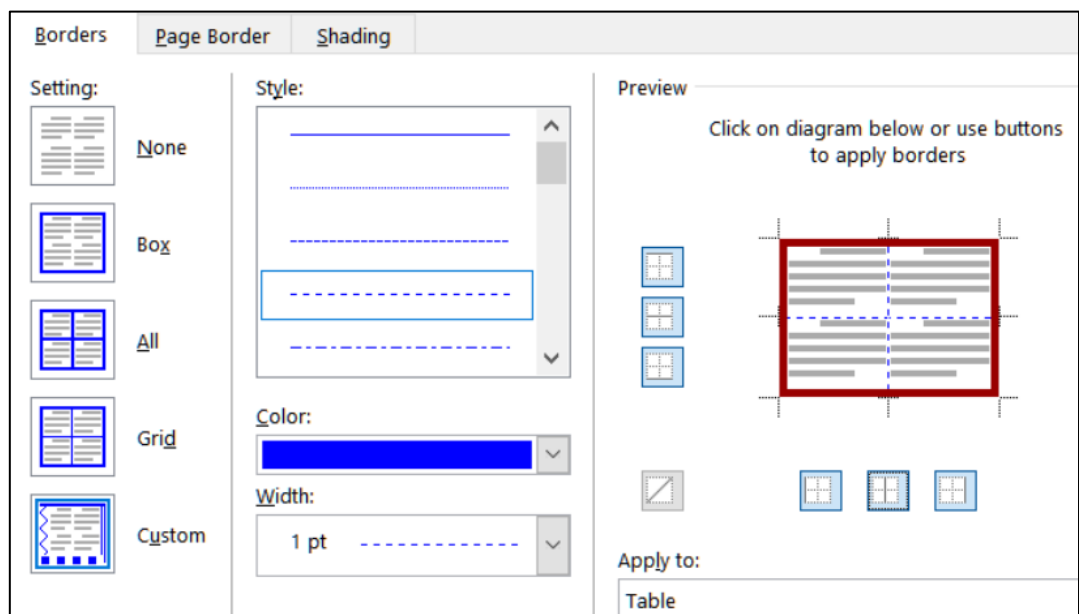
Problem: How can you create a cover letter that will catch the attention of the reader?

- Open the document **Lastname_Firstname_2B_Cover_Letter**, which you created while following the directions in the textbook and saved on page 206.
- Save the document to your **Word Files** folder using the name **HW08-2 HWID 2B Cover Letter Done**
- Modify the table in this document by doing the following:

- Select the first row of the table.
- Right-click and select **Insert, Insert Rows Above**.



- In the new top row, type **Program** in the left cell and **Duty** in the right.
- Select the entire table. On the **Home** tab, in the **Paragraph** group, click the arrow next to the border icon  and select  **Borders and Shading...**
- Click  **Custom** so you can change individual cell borders without affecting others.
- Under **Color**, select **red**. Under **Width**, select **3 pt**. In the **Preview** section, **click** on the four borders of the table.
- Make the **Style** dashed, the **Color** blue, and the **Width** 1 pt. In the **Preview** section, **click** on the inside horizontal and vertical lines.



8. Click **OK**.
 9. Select row 1. On the **Home** tab, in the **Paragraph** group, click the arrow next to the border icon and select **Borders and Shading**.
 10. Click the **Shading** tab and select gray for the **Fill**.
- d. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.

Setting up a resume is a necessary first step in finding a job while you are in school, and a must as graduation approaches. This project gave you some experience creating a resume that should help you get started using your own information. The next step is to make connections with employers and others who are working at jobs that might be of interest to you. “Networking” often is important in landing a job and in being effective once you are hired. One way to do that is through social networking sites like **Twitter**, **Instagram**, **Facebook**, and **LinkedIn**. Here are two links with some good information:

<http://jobsearch.about.com/od/networking/a/socialmedia.htm>

<http://www.cehd.umn.edu/career/networking/social/default.html>

HW08-3 Bill of Rights ⁴⁰

Problem: How can you reformat text from an email to make it easier to read?

During the debates on the adoption of the U.S. Constitution, its opponents repeatedly charged that the Constitution as drafted would open the way to tyranny (cruelty and injustice in exercising authority) by the central government. Fresh in their minds was the memory of the British violation of civil rights before and during the American Revolution. They demanded a **bill of rights** that would spell out the immunities of individual citizens. Several state conventions in their formal ratification of the Constitution asked for such amendments; others ratified the Constitution with the understanding that the amendments would be offered.

On September 25, 1789, the First Congress of the United States therefore proposed to the state legislatures 12 amendments to the Constitution that met arguments most frequently advanced against it. The first two proposed amendments, which concerned the number of constituents for each Representative and the compensation of Congressmen, were not ratified. However, Articles 3 to 12 were adopted and ratified by three-fourths of the state legislatures. They constitute the first 10 amendments of the U.S. Constitution. These amendments are collectively known as the **Bill of Rights**.

The amendments are necessarily brief and were designed to be applicable for centuries to come. It is the duty of the U.S. Supreme Court to interpret those rights in light of our current society. This is not easy. For example, the second amendment says “A well-regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed.” In 1789 “Arms” were knives, swords, and front loading single shot muskets. Today “Arms” include assault weapons, bazookas, and rocket-propelled grenades. Should every citizen be allowed to own those, or only front loading muskets, or something in between?

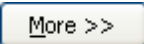

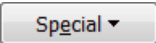
⁴⁰ Adapted from <http://www.archives.gov/exhibits/charters/charters.html>

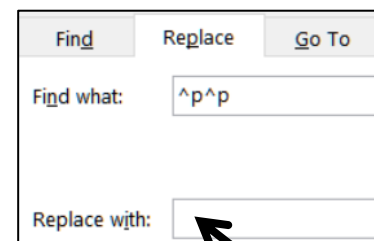
- a. Open the file **HW08-3 Bill of Rights Original**, which is one of the files you downloaded at the start of the term.
- b. Save the document in the **Word Files** folder using the name **HW08-3 HWID Bill of Rights Done**
- c. Insert a footer that contains the name of the file.

This copy of the **Bill of Rights** was received as a forwarded email. Instead of employing word wrap, the email app inserted paragraph marks at the end of each line. Your task is to reformat the document by removing the paragraph marks, restoring word wrap, and formatting the document to make it easier to read and more interesting to look at. This project will provide instruction and practice on using the **Find and Replace** feature of Word.

- d. Center the first three lines of the document and change the font to Arial Black.
- e. Make the font of the first line 18 point.
- f. If necessary, click the **Show/Hide** button to make the paragraph marks ¶ visible. Notice that most of the lines in the body of the text are separated by double paragraph marks. Replace the double paragraph marks with a space by doing the following:
 1. Open the **Find and Replace** dialog box by tapping **Ctrl + h** (or, on the **Home** tab, in the **Editing** group, click **Replace**).

Mac: From the menu bar, click **Edit, Find, Advanced Find and Replace, Replace**.

2. If the **More** button  is showing, click it to display the advanced options of the **Replace** feature. If the **Less** button  is showing the advanced options are already displayed.
3. In the **Find What** box, type two paragraph codes: ^p^p
To type a circumflex, ^, tap **Shift + 6**. The paragraph codes may also be selected from the **Special** menu .
4. In the **Replace With** box, type a space (tap the **Spacebar**).
5. Be sure that none of the boxes are checked and, unless it is dimmed, click the **No Formatting** button to be sure character formatting will be ignored.
6. Click **Replace All**. There should be 56 replacements.
7. Click **OK** and then close **Find and Replace**.



There is a blank space here but you cannot see it.

g. Format the paragraphs by doing the following.

1. Right-click anywhere in the paragraph that begins **Amendment I** and choose **Paragraph**.
2. Type **12** in the **Spacing before** box. This will put some blank space before (above) each paragraph and help to visually separate the paragraphs.
3. Under the word **Special**, select **First line** from the drop-down menu. Confirm that **0.5"** shows in the **By** box (if not, type it in). This will indent the first line of each selected paragraph.

In the **Spacing** group, you can also specify the line spacing. But there is no need to do that now unless you want to.

4. Click **OK**.

h. The document will be easier to read if you make each occurrence of the word **Amendment** into a heading. To do this, you can use one of Word's built in heading styles.

1. Move the insertion point to the top of the document and then tap **Ctrl + h** to open the replace dialog box.

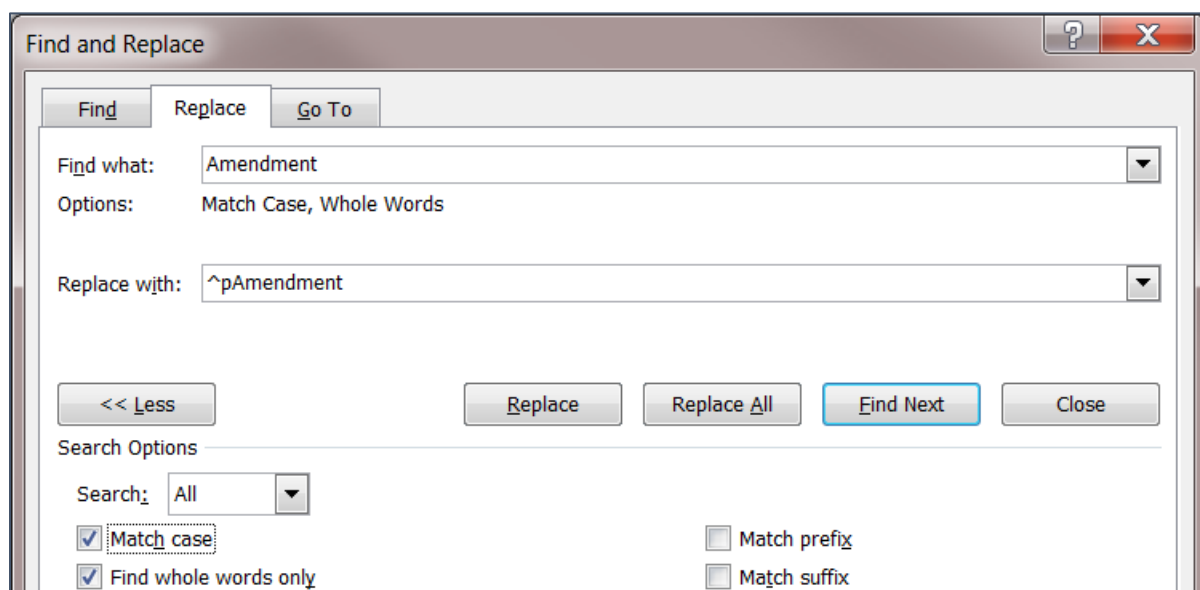
Mac: From the menu bar, click **Edit, Find, Advanced Find and Replace, Replace**.

2. In the **Find What** box, type **Amendment**

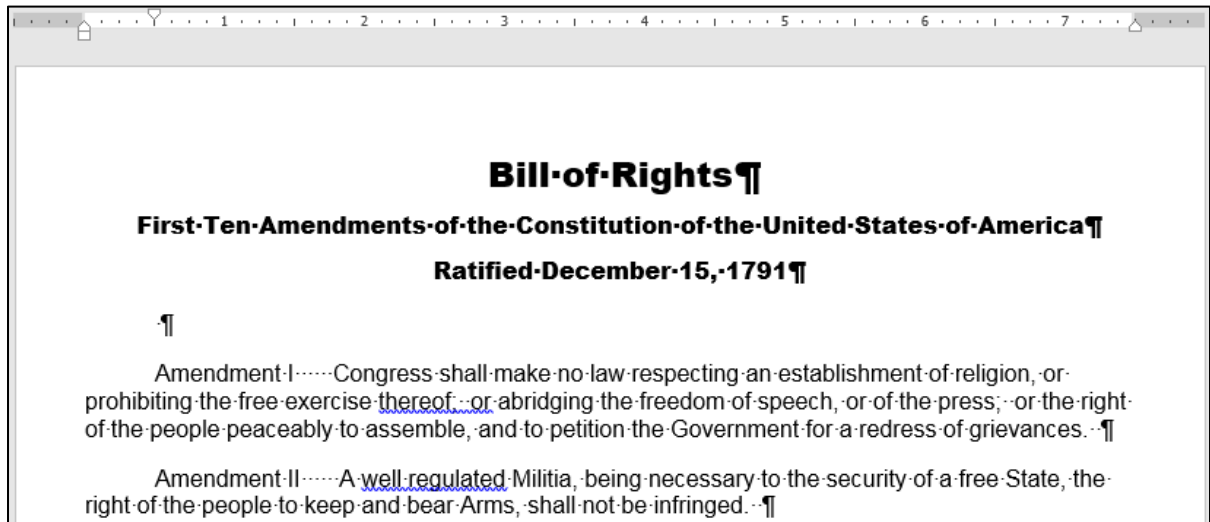
With the insertion point still in the **Find What** box, click the **Match case** box to ensure that words like **amendment** (lowercase **a**) will not match the criteria.

Also click the **Find whole words only** box to ensure that words like **Amendments** (it has an **s** on the end) will not match the criteria.

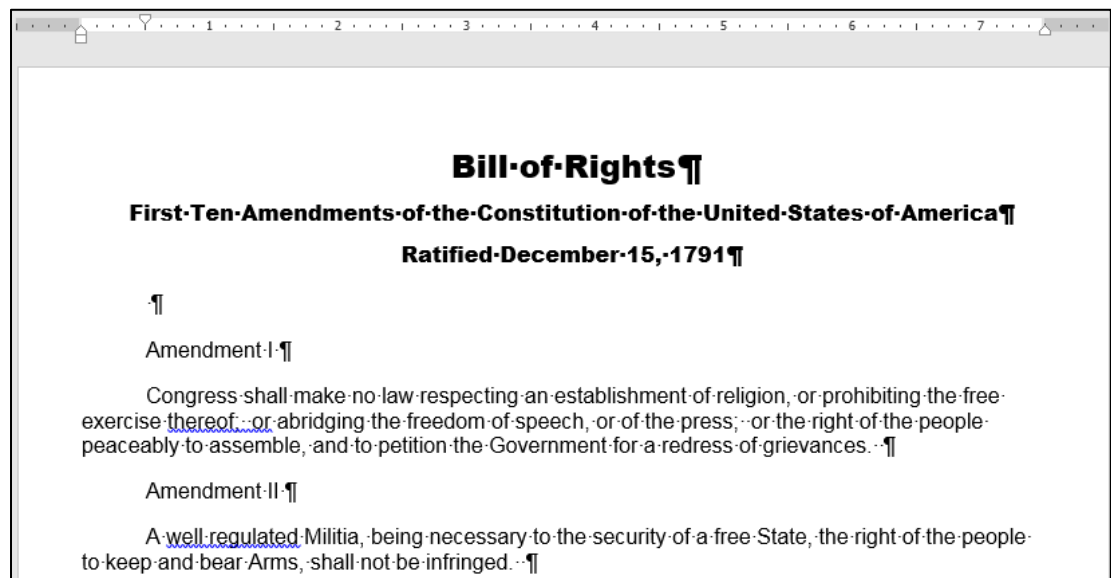
3. In the **Replace With** box, type **^pAmendment**. The **^p** is equivalent to tapping the **Enter** key before each occurrence of **Amendment** so they will appear on their own lines.



4. Click **Replace All**. There should be 10 replacements. Click **OK**.



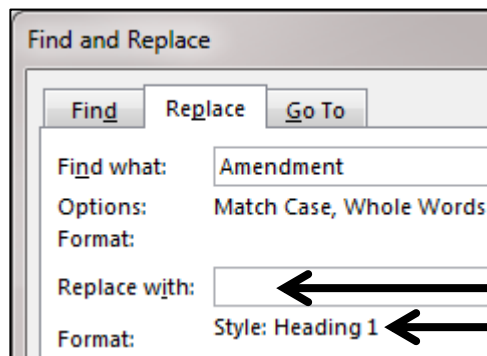
5. In the **Find What** box, type six spaces (tap the **Spacebar** 6 times). If necessary, uncheck the **Match case** and **Find whole words only** boxes.
6. In the **Replace With** box, type a single paragraph code: **^p**
7. Click **Replace All**. There should be 10 replacements. Click **OK**.



- i. Use **Replace** to change all occurrences of two spaces to one space. To do that, put two spaces in the **Find What** box, one space in the **Replace With** box, and click **Replace all**. There should be 16 replacements. Click **OK**.

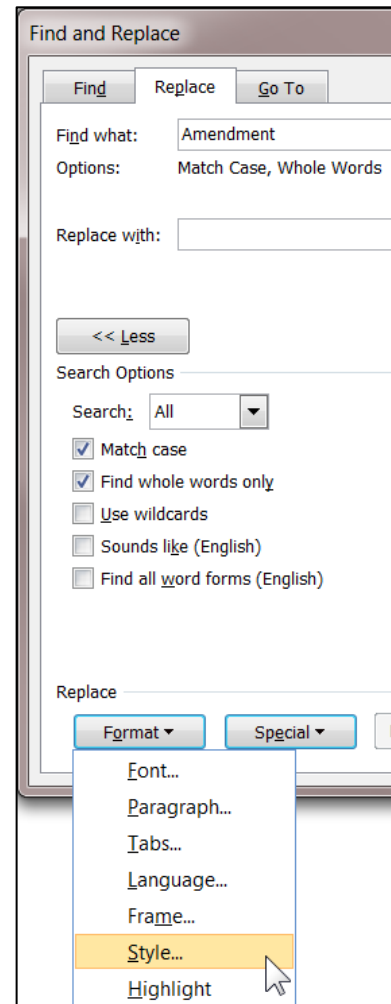
- j. Apply a heading style to each line that contains the word **Amendment** by doing the following:

1. In the **Find What** box, type **Amendment**
2. With the insertion point still in the **Find What** box, make sure the **Match case** and **Find whole words only** boxes are checked.
3. In the **Replace With** box, clear any text or spaces so that the box is blank. Be sure the insertion point is in that box.
4. At the bottom of the **Find and Replace** window, click the **Format** button and then select **Style**. This will display a list of the styles available to this document.
5. Scroll down and click **Heading 1**.
6. Click **OK**.

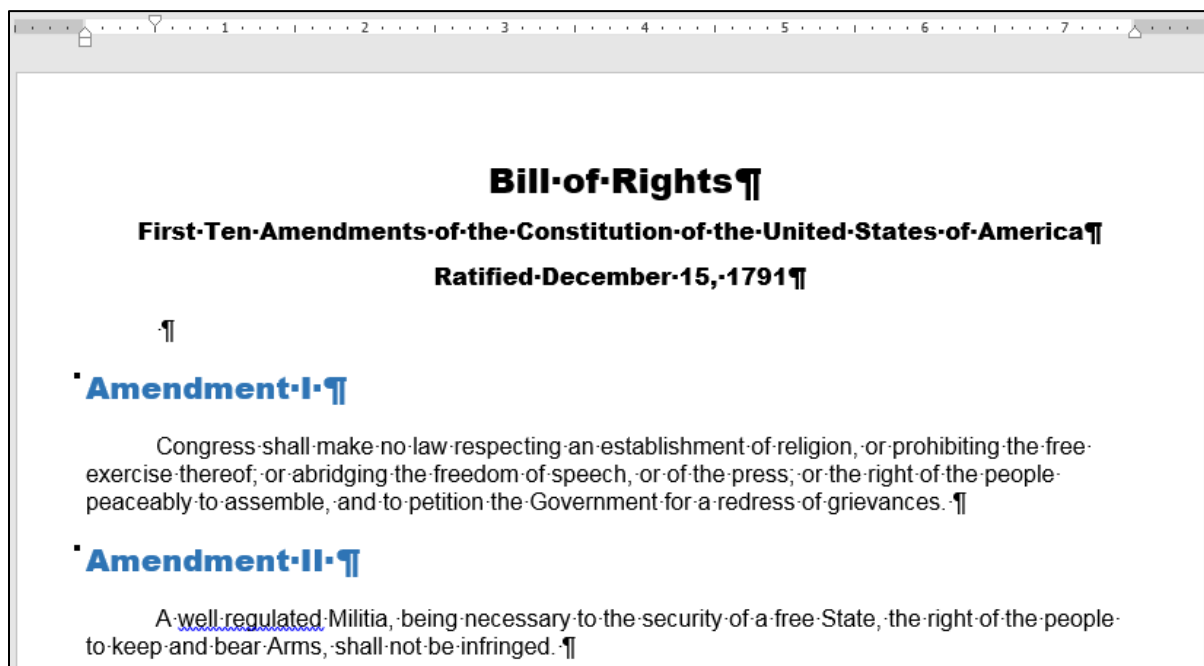


Nothing in here

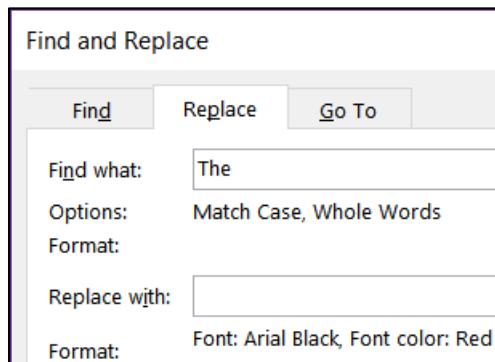
Style shown here



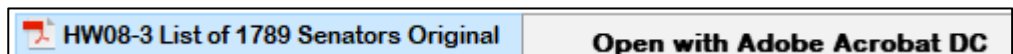
7. Click **Replace All**. There should be 10 replacements. Click **OK**. All the amendment headings are changed to the **Heading 1** style.



- k. To see how replace works within paragraphs, tell Word to find and modify only words that exactly match **The** by doing the following:
1. Tap **Ctrl + Home** to move to the top of the document.
 2. In the **Find What** box, type **The**. Confirm that the **Find whole words only** and the **Match case** boxes are checked. This will ignore words like **the**, which is not capitalized, and **these** and **thereof**, which have **the** embedded within them.
 3. Click inside the **Replace With** box and delete any text. Click **No Formatting** to remove the reference to the **Heading 1** style.
 4. In the lower left corner of the **Find and Replace** window, click **Format** and select **Font**.
 5. Change the font to red Arial Black. Click **OK**.



6. Click **Replace All**. There should be 3 changes. Click **OK** and then close **Find and Replace**. Under **Amendment IV** you should see a red **The**.
 7. Save the document but do not close it.
- l. Excel sometimes can be used to help edit text for Word documents. To see how this works, do the following:
1. Navigate to your **Word Files** folder. Right-click the file name **HW08-3 List of 1789 Senators Original** and select **Open with Adobe Acrobat**.



Do **NOT** double-click the file icon. If you do, it may open in a web browser and will not be useful to us.

This is a **pdf** file that contains the names of the US Senators in March 1789 when the Bill of Rights was proposed. I downloaded these names from

http://www.senate.gov/artandhistory/history/common/briefing/senators_chronological.htm

This file is in **pdf** format so it can be easily read on any computer. You want to insert these names at the end of the Bill of Rights document and in the form **FirstName LastName**.

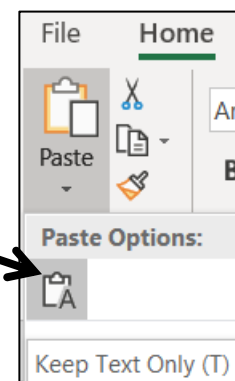
As will be explained on textbook page 258 in **Activity 3.14**, you can open a pdf file directly from within Word and have Word convert it to a Word document so you can edit it, but that conversion usually is not perfect. For this project you need only a small part of the file so use copy and paste.

2. Scroll to page 2 and select the lines with the names of the senators as of March 4, 1789 (**Bassett** through **Wingate**).

FIRST CONGRESS MARCH 4, 1789, TO MARCH 3, 1791			
Start of Initial Senate Service	Name/Party	End of Service	Rank
*** 1789 ***			
March 4	Bassett, Richard (Anti-Admin/Pro-Admin-DE)	March 3, 1793	1
	Butler, Pierce (Pro-Admin/Anti-Admin/R-SC)	October 25, 1796	2
	(Served again 1802)		
	Carroll, Charles (Pro-Admin-MD)	November 30, 1792	3
	Dalton, Tristram (Pro-Admin-MA)	March 3, 1791	4
	Ellsworth, Oliver (Pro-Admin/F-CT)	March 8, 1796	5
	Elmer, Jonathan (Pro-Admin-NJ)	March 3, 1791	6
	Few, William (Anti-Admin-GA)	March 3, 1793	7
	Grayson, William (Anti-Admin-VA)	March 12, 1790	8
	Gunn, James (Anti-Admin/F-GA)	March 3, 1801	9
	Henry, John (Pro-Admin/F-MD)	November 28, 1797	10
	Izard, Ralph (Pro-Admin-SC)	March 3, 1795	11
	Johnson, William S. (Pro-Admin-CT)	March 4, 1791	12
	Langdon, John (Pro-Admin/Anti-Admin/R-NH)	March 3, 1801	13
	Lee, Richard Henry (Anti-Admin-VA)	October 8, 1792	14
	Maclay, William (Anti-Admin-PA)	March 3, 1791	15
	Morris, Robert (Pro-Admin-PA)	March 3, 1795	16
	Paterson, William (Pro-Admin-NJ)	November 13, 1790	17
	Read, George (Pro-Admin-DE)	September 18, 1793	18
	Schuyler, Philip John (Pro-Admin-NY)	March 3, 1791	19
	(Served again 1797)		
	Strong, Caleb (Pro-Admin/F-MA)	June 1, 1796	20
	Wingate, Paine (Anti-Admin-NH)	March 3, 1793	21

3. Tap **Ctrl + c**.
4. Open a new blank **Excel** file. Be sure cell **A1** is active. On the **Home** tab, in the **Clipboard** group, click the **Paste** arrow, and click **Keep Text Only**.
5. **AutoFit** column **A**. As you can see, all the data are in **A1:A23**.

Note: If this paste did not work correctly, close the file and then open **HW08-3 List of Senators if pdf does not work Original** and use that one.



6. Do the following so all rows have the same structure:

- In row 1, delete **March 4 <space>**
- Delete the entire row 3, which contains **(Served again 1802)**.
Now, **Carroll, Charles** is in row 3.
- Delete the entire row 20, which contains **(Served again 1797)**.

Now, all 21 remaining rows have this same pattern:

LastName, FirstName (stuff in parentheses) Date Number

7. In **B1** type **Richard** and tap **Enter**.
8. On the **Home** tab, in the **Editing** group, click the **Fill** arrow and select **Flash Fill**. This will enter the first names in column **B**.
9. In **C1** type **Bassett** and tap **Enter**.
10. On the **Home** tab, in the **Editing** group, click the **Fill** arrow and select **Flash Fill**. This will enter the last names in column **C**.

	A	B	C
1	Bassett, Richard (Anti-Admin/Pro-Admin-DE) March 3, 1793 1	Richard	Bassett
2	Butler, Pierce (Pro-Admin/Anti-Admin/R-SC) October 25, 1796 2	Pierce	Butler
3	Carroll, Charles (Pro-Admin-MD) November 30, 1792 3	Charles	Carroll

11. In **D1** enter a formula to concatenate **FirstName space LastName**.⁴¹
12. Fill the formula down to row **21**.
13. Copy **D1:D21**.
14. Switch back to **HW08-3 HWID Bill of Rights Done**
15. Tap **Ctrl + End** to go to the end of the document.
16. Tap **Enter**.
17. Type **Names of Senators in March, 1789** and, on the **Home** tab, in the **Styles** group, click the **Heading 1** style.
18. Tap **Enter**.
19. Use **Paste Special** to paste the names as text only.
20. Select the names and remove the space before each paragraph.
21. Save the document **HW08-3 HWID Bill of Rights Done** but do not close it.
22. Close **Excel** without saving, and close **Adobe Acrobat**.

⁴¹ The formula is **=B1&" "&C1**

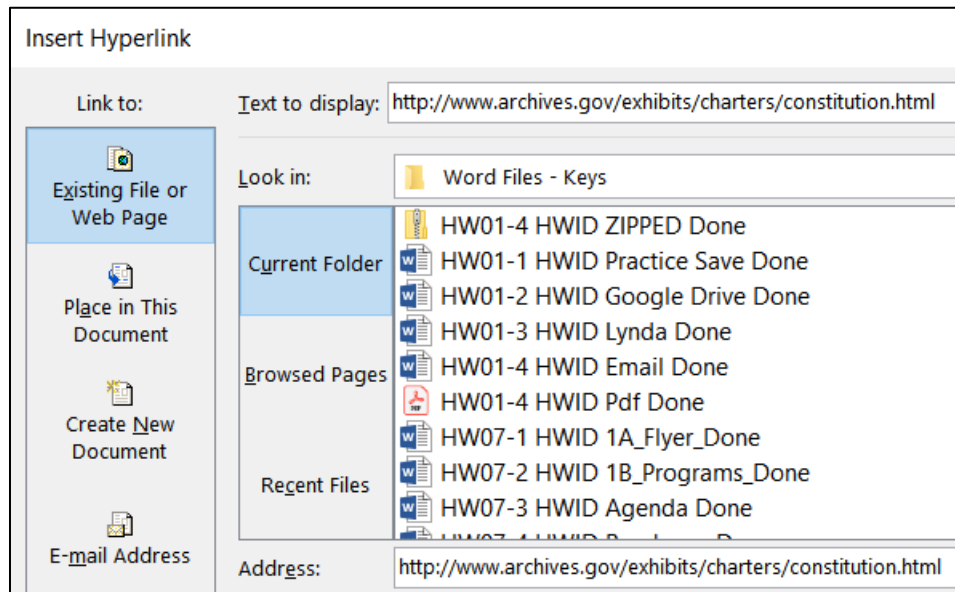
m. If your document will be read online it may be useful to include hyperlinks to web sites so that the user can go directly there with a single mouse click. The process in Word is similar to the one you used in Excel.

1. In the blank line under **Ratified December 15, 1791**, type the following all on one line:

The Constitution may be viewed at

<http://www.archives.gov/exhibits/charters/constitution.html>

2. Remove the first line indent, if necessary.
3. Select the web address and tap **Ctrl + k**. This is the shortcut for **Insert Hyperlink**. You can also click **Hyperlink** on the **Insert** tab.



The top box shows the text that will be displayed. Leave that as is so if someone is reading a printed copy, they will be able to see what to type to get to the web page. The bottom box has the actual web address. That is where you want to send the user when she clicks the link in the online document.

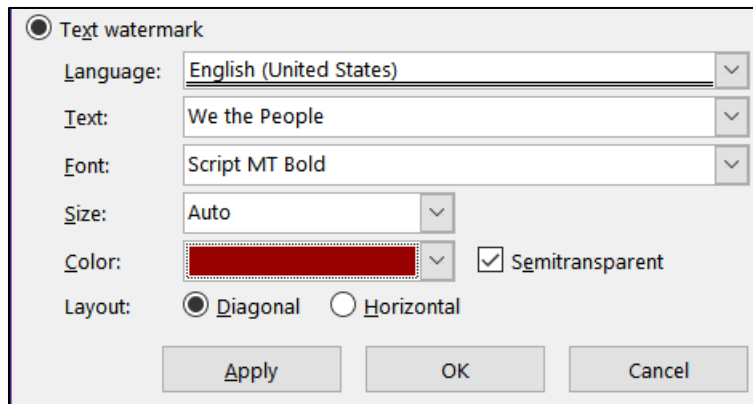
4. Click **OK**. The hyperlink is created and the style for the web address is automatically set to **Hyperlink** (underlined blue text). Point to the hyperlink and a screen tip will appear.



5. Hold down the **Ctrl** key and click the hyperlink. Your web browser will open and take you to the web site.



6. Right-click the image of the Bill of Rights and select **Copy Image**.
 7. Close the web browser.
 8. Paste the image in the second page of the Bill of Rights document. Change the height to 4 inches and set the **Wrap Text** to **In Front of Text**. Move the image so that it is in the lower right corner of the page.
- n. Put some text in the background of the document.
1. On the **Design** tab, in the **Page Background** group, click the **Watermark** arrow and select **Custom Watermark**.
 2. Click the button to the left of **Text** watermark.
 3. In the textbox type **We the People**
 4. In the **Font** box, select **Script MT Bold** (if that is not available, pick another).
 5. In the **Color** box, select dark red and leave **Semitransparent** checked.



6. Click **OK**.
- o. Tap **Ctrl + p** and compare the preview with the key (page 2 only). Make needed corrections, save the document, and close it. When you are ready to submit the pdf file, you will print only page 2.

HW08-4 Park

Problem: How can you create an eye-catching memo that includes tables?

- Open the document **HW08-4 Park Original**, which is one of the files you downloaded at the start of the term.
- Save the document in the **Word Files** folder using the name **HW08-4 HWID Park Done**
- Insert a footer that contains the name of the file.
- To the right of **DATE** in line 3, enter the **Date** field code. Use the format **Day, Month Date, Year**.
- Format the five lines that start with **Days** through **Sunday** by doing the following.
 - The sections of each line are separated by commas. Change the commas to tabs. A quick way to do this is to use the **Replace** feature. To do this, select the five lines, tap **Ctrl + h**, type a comma in the **Find what** box and the tab code, **^t**, in the **Replace with** box. Click **Replace All**. There are 10 replacements. The little arrows show where the tabs have replaced the commas. You cannot see some of them because you have not yet set up the **Tab Stops**.

Days→OpensCloses¶
Monday-Thursday→1·pm→10·pm¶
Friday·1·pm→11·pm¶
Saturday·and·Holidays → 11·am·11·pm¶
Sunday → Noon→11·pm¶

- Click anywhere in the first line. Set a right tab stop at **4** inches and a left tab stop at **4.5** inches. Make the tab stops have dot leaders.
- Set the left and first line indents to **1.5** inches.

- Change the format of the next four lines to match this first line. You could do this as you just did for the first line but, like Excel, Word has a **Format Painter** that allows you to copy the format of one line or group of characters and apply it to others. To see how this works, select the line you just formatted and, on the **Home** tab, in the **Clipboard** group, click the **Format Painter** paintbrush.

Now, select the next four lines (**Monday** through **Sunday**). The result is that all five lines now have identical formats.

- f. Select the 5 lines starting with the line that has **Ave, One Day, Season Pass**. Convert the text to a table (**Insert, Tables, Table, Convert Text to Table**). If necessary, change the font to 12 pt Arial.
- g. Shade some of the cells by doing the following:
1. Select the three column headings and, on the **Home** tab, in the **Paragraph** group, click the **Borders** arrow, and select **Borders and Shading**.
 2. Click the **Shading** tab and set the fill to gray. Confirm that the **Apply to** box shows **Cell**.
 3. Click **OK**.
 4. Do the same to shade the cells that have **Toddler, Junior, Adult, and Senior**.
- h. Remove the top and left border of the upper left cell by doing the following:
1. Click in the upper left cell and on the **Home** tab, in the **Paragraph** group, click the **Borders** arrow, and select **Borders and Shading**.
 2. In the **Apply to** box, select **Cell** so your changes will only affect the one cell.
 3. Under **Settings**, click **Custom Cell**.
 4. To remove the top border, click the border itself or the box next to the top border.



5. Use the same process to delete the left cell border.
6. Click **OK**. If the table gridlines are not showing, on the **Table Layout** tab, in the **Table** group, click **View Gridlines** to show them. It may appear that there still is a border on the upper left cell.

	Ave
Toddler	3 & t
Junior	4 to

The lines are not borders but cell gridlines. They will not print. To hide the gridlines, on the **Table Layout** tab, in the **Table** group, deselect **View Gridlines**.

- i. Adjust the position and size of the columns by doing the following:

1. Select the whole table by clicking the icon at the upper left of the table .

An alternative way of selecting the entire table is to go to the **Table Layout** tab, in the **Table** group, click the **Select** arrow, and click **Select Table**.

With the whole table selected, right-click and select **Table Properties**.

2. On the **Cell** tab, in the **Preferred width** box, enter 1.2”.

The screenshot shows the 'Cell' tab selected in the ribbon. Below the tabs, there is a 'Size' section. Under 'Size', the 'Preferred width' checkbox is checked, and the value '1.2" is entered in the adjacent box. To the right, the 'Measure in' dropdown is set to 'Inches'.

Click **OK**.

3. With the entire table still selected, on the **Home** tab, in the **Paragraph** group, click the **Center** icon. This will center the table between the page margins.
4. To center the characters inside the cells, select the cells, but not the whole table, and click the **Center** icon.


Admission charges are significantly different, with the price of season passes reduced by \$20 for Adults, and increased by \$20 for Juniors. Let's hope the 15% increase in revenue is realistic!

	Ave	One Day	Season Pass
Toddler	3 & under	Free	Free
Junior	4 to 11	\$19	\$89
Adult	12 to 59	\$39	\$129
Senior	60+	\$29	\$99

- j. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.

HW08-5 Bank Product Report Table

Problem: How can you convert raw data into a table, sort the data, and format the table?

- Open the document **HW08-5 Bank Product Report Original**, which is one of the files you downloaded at the start of the term.
- Save the document in the **Word Files** folder using the name **HW08-5 HWID Bank Product Report Done**
- Insert a footer that contains the name of the file.
- Select the lines starting at **Date** and down to the last line of data. Convert the data to a table (**Insert, Table, Convert Text to Table**).
- Format the table so numbers and dates are right aligned and headings are centered and bold.
- Like Excel, Word allows you to sort rows of data by **Text**, **Number**, and **Date**. To see how this works, do the following:
 - Select all the rows below the header row.
 - On the **Home** tab, in the **Paragraph** group, click the **Sort** button 

- Click the **Sort by** arrow and select **Column 1**.

Word will recognize the first cell, 16 Jan, as a date and so it will put **Date** in the **Type** box. If it does not, click the **Type** arrow and select **Date**.

Because entire rows are selected, Word will put **Paragraphs** in the **Using** box.

Confirm that **Ascending** is checked.

- Click **OK**. The rows of data are sorted by the dates in **Column 1**.
- Repeat the process except this time, in the **Type** box, select **Text**.

- Click **OK**. Now, the values in **Column 1** are sorted as if they were text instead of dates. Thus, cells starting with **1** come first, followed by cells starting with **2**, then **3**, then **6**, then **8**, and finally **9**.

g. Do another sort using more than one sort level.

- Click in any cell of the table. On the **Home** tab, in the **Paragraph** group, click the **Sort** button. Word automatically selects the entire table, including the column headings.

Be sure **Header row** is selected in the **My list has** area. In the **Sort by** box, select **Sales Rep**. Notice that the **Type** is automatically changed to **Text**.

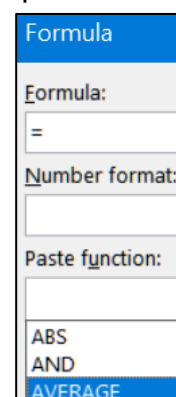
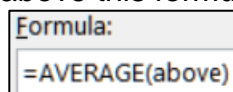
- In the **Then by** box, select **Amount**. If the **Type** is not automatically changed to **Number**, make this change.
- Choose **Descending** order for the **Amount** column.

- Click **OK**. The data are sorted by **Sales Rep**, in alphabetical order and, for each **Sales Rep**, the data are listed by amount, largest to smallest.

Date	Product	Amount	Sales Rep	Points
5 Feb	Savings	6,300	Betsey	44
12 Feb	Savings	6,000	Betsey	42
16 Jan	Certificate	5,000	Betsey	400
26 Jan	Certificate	150	Betsey	120
13 Jan	Certificate	5,000	Carolyn	200
22 Jan	Credit	2,000	Carolyn	16

- h. If necessary, select the entire table and, on the **Table Layout** tab, in the **Cell Size** group, click the **AutoFit** arrow, and select **AutoFit Contents**.
- i. Calculate the sum of the **Amounts** column and the average of the **Points** column by doing the following:
1. Click the lower right cell and tap the **Tab** key. This inserts a new row.
 2. In the cell at the bottom of the **Amount** column, type **Sum =** and a space.
 3. On the **Table Layout** tab, in the **Data** group, click the **Formula** button. Notice that **=SUM(ABOVE)** automatically appears in the **Formula** box. This means that the sum of the numbers above the cell will be calculated.
 4. Click **OK**. The sum will be **59,500**.
 5. In the cell at the bottom of the **Points** column, type **Ave =** and a space.
 6. On the **Table Layout** tab, in the **Data** group, click the **Formula** button. Notice there is a **Paste function** arrow. Clicking that will show you all the functions you may use here. In the **Formula** box, delete **SUM(ABOVE)** but leave the equal sign. Click the **Paste function** arrow and select **AVERAGE**.

Word will show **=AVERAGE()**. Since you want the average of the numbers above this formula, type **above** inside the parentheses.



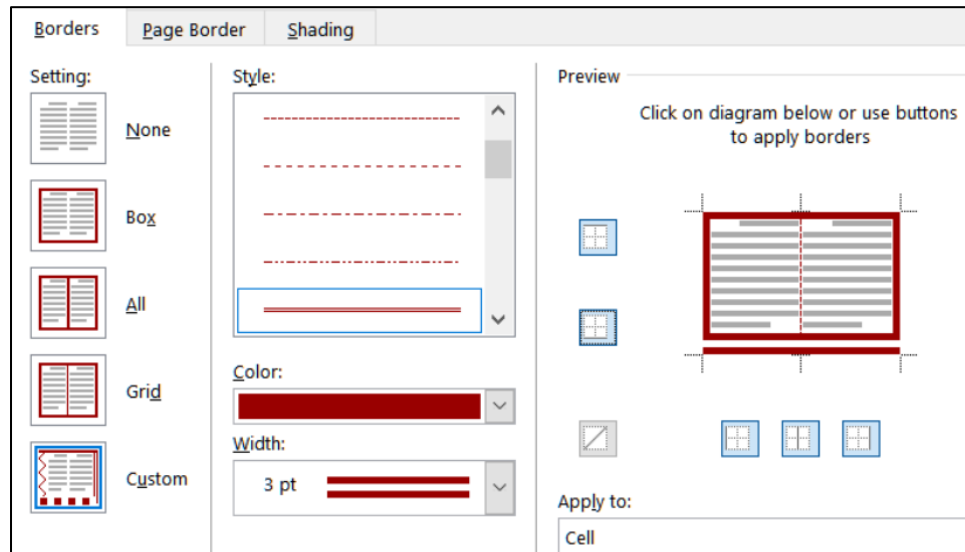
Within these Word formulas, you can use positional arguments to indicate which numbers you would like summed. These include **LEFT**, **RIGHT**, **ABOVE**, and **BELOW**.

7. Click **OK**. The average should be **315.17**.
8. If you change any numbers in the column, you will have to update the formulas manually. It is not automatic as it is in Excel. To see how this works, in the last cell of the **Amounts** column, change **300** to **900**. Notice that the sum just below this cell has not changed. Select the cell with the **Sum** in it and tap the **F9** key. This updates the selected fields. The cell will now show **Sum = 60,100**.

6 Jan	Certificate	900	Pam	240
		Sum = 60,100		Ave = 315.17

- j. Format the table borders by doing the following:
1. Center the title and the table on the page.
 2. Bold the last row (with **Sum** and **Ave**).
 3. Put a heavy (3 pt width) red border around the outside of the entire table and a light (1 pt width) red dashed border on each cell on the inside.

4. Put a red 3 pt width double line border between the column headings and the data. To do this, select the row with the column headings, open **Borders and Shading**, and fill in the parameters.



It should look like this:

First National Bank January/February Sales Report				
Date	Product	Amount	Sales Rep	Points
5 Feb	Savings	6,300	Betsey	44
12 Feb	Savings	6,000	Betsey	42
16 Jan	Certificate	5,000	Betsey	400

5. Remove part of the border on the two cells in the last row, as shown below. You will have to select the cells whose borders you want modified and then open **Borders and Shading** and change the borders individually.

8 Feb	Auto Loan	3,000	Pam	300
6 Jan	Certificate	900	Pam	240
Sum = 60,100				Ave = 315.17

- k. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.

HW08-6 Infections Memo

Problem: How can you create a memo that includes a table of data and a graph of those data?

Excel tables and charts can be inserted into Word documents. Follow these directions to copy a data table and chart from an Excel workbook.

- a. Open the document **HW08-6 Infections Memo Original**, which is one of the files you downloaded at the start of the term.

- b. Save the document in the **Word Files** folder as **HW08-6 Infections Memo Done**
- c. Insert a footer that contains the name of the file.
- d. Replace **<name>** with the field code for **UserName** (**Insert, Text, Quick Parts, Field, UserName**). This will insert the name of the owner of the computer you are using (this may not be you if you are using a friend's computer or a computer in a lab).
- e. Replace **<creation date>** with the field code for the present date. Use the format that shows the day, month, date, and year. If you want to see the field codes, tap **Alt + F9**.

To: Infectious Diseases Foundation

From: { USERNAME * MERGEFORMAT } { USERADDRESS * MERGEFORMAT }

Date: { CREATEDATE \@ "dddd, MMMM d, yyyy" * MERGEFORMAT }

Re: Data you requested

Mac: Right-click and select **Toggle Field Codes**.

To hide the field codes, tap **Alt + F9** again.

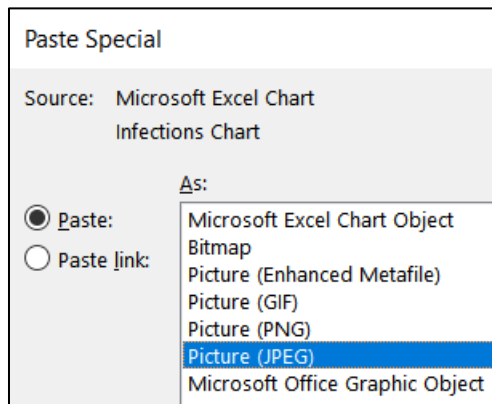
- f. Copy information from Excel and paste it into the memo by doing the following:
 1. Open the Excel file **HW08-6 Infections Data Original**, which is one of the files you downloaded at the start of the term and is in the **Word Files** folder. You cannot open the file while you are in Word. Either start Excel and then open the file, or open your **Word Files** folder in Windows Explorer and double-click the file name.
 2. Click the **Infections Data** tab and select **A1:C22**.
 3. Tap **Ctrl + c** to copy the data table.
 4. Switch to Word and tap **Ctrl + End** to move the insertion point to the bottom of the document.
 5. Tap **Ctrl + v** to paste the data as a table into the memo.
 6. Switch to Excel and click the **Infections Chart** tab.
 7. Select the **Chart Area** (**Chart Format, Current Selection, Chart Area**).
 8. Tap **Ctrl + c** to copy the chart.
 9. Close Excel.

The shape of the graph is called a **logistic curve**. It shows how infections spread in a community or, in the case of a pandemic, the world. At the start, the virus spreads slowly, and then infections rapidly rise as more and more people come in contact with those infected. Finally, when almost everyone has become infected, the rate flattens out. This is called Herd Immunity, meaning that so many people have become infected and developed antibodies that the spread to new people becomes negligible.

The blue dots represent the actual number of infections while the red curve represents the predicted spread from this mathematical model:


$$f(x) = \frac{500e^{0.5x}}{49 + e^{0.5x}}$$

9. Switch to Word and, on the **Home** tab, in the **Clipboard** group, click the **Paste** arrow, select **Paste Special**, and select **Picture (JPEG)**.



Click **OK**. This inserts the chart as a picture that cannot be altered. If you had wanted the user to be able to edit the chart, you would have chosen **Microsoft Excel Chart Object**. That is NOT what you want.

g. Adjust the chart as follows:

1. Select the chart. Click the **Layout Options** button  and select **In Front of Text**.
2. Change the **Width** to 5 inches. The height should automatically change to 3.62 inches.
3. Click the edge of the chart and drag it so that it is just to the right of the table.

h. Insert a video by doing the following:

1. Just under the table, type **What you should know about COVID-19**.
2. Open your browser, type **youtube.com** in the address bar, and tap **Enter**.
3. Type **What you should know about COVID-19** in the YouTube search box and tap **Enter**.
4. Decide which video you want.

Mac: Take a screenshot of the video window. Switch to Word and paste the image. Then, switch back to your browser.

Open the video and copy the URL from the address bar. Here is the one I chose: <https://www.youtube.com/watch?v=677pSwGauqs>



5. Return to your Word document, move to just below the last sentence, paste the URL, and then tap **Enter**.

Mac: Skip steps 6 and 7 below. Instead, right-click the screenshot, select **Hyperlink**, paste the URL in the box, and click **OK**.

6. On the **Insert** tab, in the **Media** group, click **Online Video**.
 7. Paste the URL in the box and click **Insert**.
 8. Make the height of the video **2** inches.
 9. Close your browser.
- i. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.

Step 4 Submit Now, submit the following. Use these names for the pdf files:

HW08-1 HWID 2A Resume Done

HW08-2 HWID 2B Cover Letter Done

HW08-3 HWID Bill of Rights Done Page 2 – Do not submit page 1

HW08-4 HWID Park Done

HW08-5 HWID Bank Product Report Done

HW08-6 Infections Memo Done

Create a pdf file of the output for each of the above, place them in a folder called **HW08 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW08 Word Chapter 2: Creating Letters and Tables**.

Step 5 Backup Now would be a good time to backup your files.

Project 9

Word Chapter 3: Research Papers, Newsletters, and Mail Merge

Step 1 Read Read the introductory material on page 235 of the textbook.

Step 2 Activities Turn on the computer and do the following:

Project 3A: Start at the top of page 237.

Do not do **Activity 3.01** (all steps). Instead, do the following:

1. Navigate to your **Word Files** folder and open **w03A_Quantative_Technology**, which is one of the files you downloaded at the start of the term.
2. Save the file in your Word Files folder using the name **Lastname_Firstname_3A_Quantative_Technology**
3. Start on **Activity 3.02** on page 238 and complete the Activities through step 8 of **Activity 3.11** on page 251. Save your file after completing step 8 of **Activity 3.11**. Do **NOT** do **Activity 3.12** or **3.13** or **3.14** on pages 251-258.
4. **Return here** when you have completed Project 3A on page 251.

Do NOT do GO! With Google Docs

Project 3B: When you have completed Project 3A, start at the top of page 262.

Instead of **Activity 3.15 step 1** do the following:

1. Navigate to your **Word Files** folder and open **w03B_Environment_Newsletter**, which is one of the files you downloaded at the start of the term.
2. Save the file in your Word Files folder using the name **Lastname_Firstname_3B_Environment_Newsletter**
3. Complete the rest of the Activities through step 12 on page 279. Do **NOT** do steps 13 and 14 in **Activity 3.26** on page 279. Do **NOT** do **Activities 3.27** or **3.28** or **3.29** on pages 280-284.
4. **Return here** when you have completed Project 3B on page 279.

Do NOT do GO! With Google Docs or GO! To Work

Step 3 Homework After you have completed Projects A and B return here, do the following additional activities, and turn them in for grading.

HW09-1 Research Paper (Based on Project 3A)

Problem: How can you create a short research paper?

- a. Open the document **Lastname_Firstname_3A_Quantitative_Technology**, which you created while following the directions in the textbook and saved on page 251.
- b. Save the document to your Word Files folder using the name **HW09-1 HWID 3A Quantitative Technology Done**
- c. Tap **Ctrl + p** and compare the preview with the key (page 4 only). Make needed corrections, save the document and close it. When you are ready to submit the pdf file, you will print only page 4.

HW09-2 Newsletter (Based on Project 3B)

Problem: How can you create a newsletter?

- a. Open the document **Lastname_Firstname_3B_Environment_Newsletter**, which you created while following the directions in the textbook and saved on page 279.
- b. Save the document to your **Word Files** folder using the name **HW09-2 HWID 3B Environment Newsletter Done**
- c. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.

HW09-3 Home Address Label

Problem: How can you create address labels?

In this project you will create labels that have your campus address. You can put these on your books, USB drive, etc. to identify them as yours. These are not mail **merge** labels because there is no data file involved.

- a. Create the labels by doing the following:
 1. Start Word and open a blank document.
 2. On the **Mailings** tab, in the **Create** group, click **Labels**.
 3. Click the **Labels** tab and then **Options**. Under **Label vendors**, select **Avery US Letter**.

4. Under **Product number**, select **5160 Address Labels**.

Under **Printer information**, **Page printers** may be checked and **Bypass Tray** shown. That assumes you will insert blank label sheets one at a time in the Bypass Tray. If you want to print several sheets you can select **Continuous-feed printers** to have the labels come from the usual tray.

5. Click **OK**. In the **Address** box, type the following using **your own data**:

6. Click **New Document**. A new document with the mailing labels is produced. The gridlines will show, but they will not be printed, which is what you want.

FirstName LastName HWID Room 203 Bailey Hall, St. Paul Campus Campus mail code: 6017 651-555-1234 name1234@umn.edu	FirstName LastName HWID Room 203 Bailey Hall, St. Paul Campus Campus mail code: 6017 651-555-1234 name1234@umn.edu	FirstName LastName HWID Room 203 Bailey Hall, St. Paul Campus Campus mail code: 6017 651-555-1234 name1234@umn.edu
FirstName LastName HWID Room 203 Bailey Hall, St. Paul Campus	FirstName LastName HWID Room 203 Bailey Hall, St. Paul Campus	FirstName LastName HWID Room 203 Bailey Hall, St. Paul Campus

When you want to print actual labels you should print on regular paper first and then check to see if the printed labels line up properly with the labels on the sheet. Often, you will have to make minor adjustments due to differences in printer characteristics. Printing on paper first will save you the cost of label sheets you might have to throw away.

7. Save the document in the **Word Files** folder using the name **HW09-3 HWID Address Labels Done**

- b. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.

HW09-4 Name Tag Labels

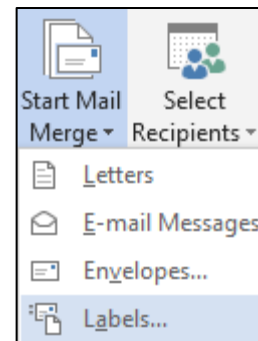
Problem: How can you create individual name tags?

In this project you will create labels to be used as name tags at an orientation session.

- a. Create the blank labels.

1. Start Word and open a blank document.
2. On the **Mailings** tab, in the **Start Mail Merge** group, click **Start Mail Merge** and select **Labels**.

Notice you are not selecting **Labels** from the **Create** group, which makes all the labels the same. For this project, you want each label to have different information.



3. Be sure the Label vendor is **Avery US Letter**. Select the **5095 Adhesive Name Badges**. These are described in detail on the Avery.com web site.
 4. Click **OK**. If the table gridlines do not show, on the **Table Layout** tab, in the **Table** group, click **View Gridlines**.
 5. Select the table and change the font to 10 pt Arial.
- b. Save the document to your **Word Files** folder using the name **HW09-4 HWID Name Tag MAIN Done**

It is good practice to use the word **MAIN** in the name of a mail merge file to indicate that this is the main document into which the data from the **DATA** document will be inserted.

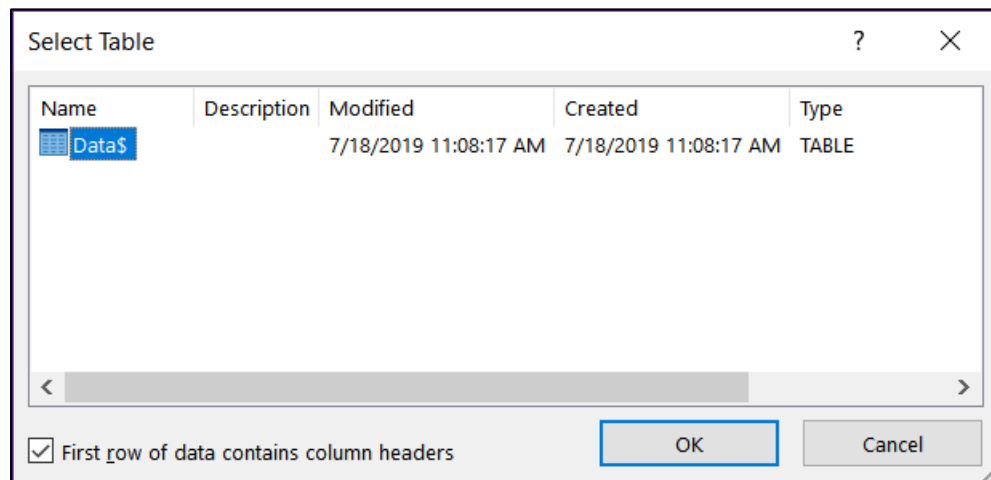
- c. Select the data file by doing the following:

1. On the **Mailings** tab, in the **Start Mail Merge** group, click **Select Recipients**, and then **Use Existing List**.

2. Navigate to your **Word Files** folder and select the Excel file **HW09-4 Name Tag Labels DATA Original**. It is good practice to use the word **DATA** in the name of a mail merge data file to indicate that it contains the data for a main file. This data file is an Excel file where the first row contains the names of the merge fields. You could copy the data and paste it into a new Word document but that is not necessary.

	A	B	C	D	E	F	G
1	First	Last	Major	Interest1	Interest2	Interest3	Dorm
2	Jill	Barnum	English	Flute	Walking	Gardening	Bailey
3	Sue	Vanage	Biology	Band	Jogging		Territorial
4	Bill	Gates	Computer Science	Money	Money	Money	
5	Barak	Obama	Political Science	Community Service	Sports		
6	Albert	Einstein	Physics	Special Relativity	General Relativity	Photons	Territorial
7	Will	Shakespeare	English	Poetry	Plays		Bailey

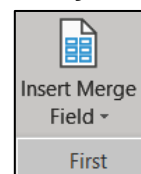
3. Click **Open**.




4. Click **OK**.
 5. On the **File** tab, click **Options**, click **Advanced**, scroll down to the **Show document content** group and verify that the **Field shading** box is set to **Always**. This allows you to easily distinguish between normal text and text that is displayed by a field.
 6. Click **OK**.
- d. Insert the field codes.

1. Click the upper left corner of the first cell in the table. Type **Hello, my name is** and then tap the **Spacebar**.
2. On the **Mailings** tab, in the **Write & Insert Fields** group, click **Insert Merge Field** and select **First**.

The code for the person's first name is inserted.



	Hello, my name is «First»	«Next Record»
---	---------------------------	---------------


3. Click **Preview Results** to see what the merge will look like.

+	Hello, my name is Jill		
---	------------------------	--	--

Click **Preview Results** again to show the codes.

4. Tap **Alt + F9** to see the field codes. If that does not work, point to a field, right-click, and select **Toggle Field Codes**.

+	Hello, my name is { MERGEFIELD First }		{ NEXT }
---	--	--	----------

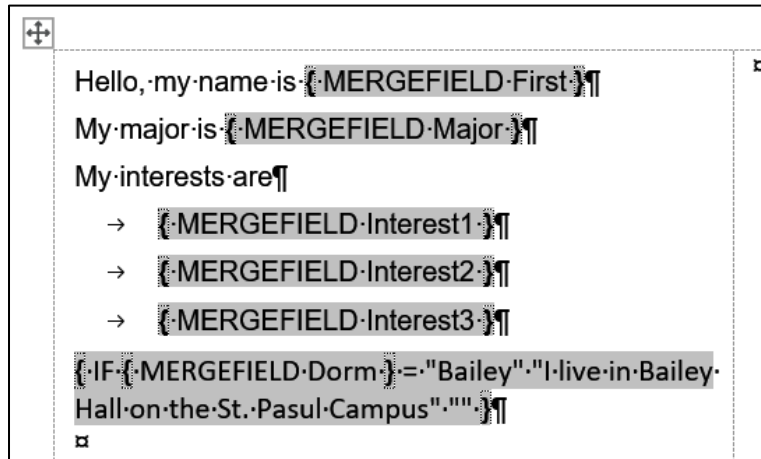
5. Click the **Show/Hide** button  so you can see the paragraph marks. Type the text and insert the fields as shown below. Remember that to insert a tab within a table cell you tap **Ctrl + Tab** rather than **Tab** because tapping **Tab** will send you to the next cell or add a row to the bottom of a table.

+	Hello, my name is { MERGEFIELD First } My major is { MERGEFIELD Major } My interests are → { MERGEFIELD Interest1 } → { MERGEFIELD Interest2 } → { MERGEFIELD Interest3 }		{ NEXT }
---	--	--	----------

- e. In the data file, some of the **Dorm** information is missing and the campus of the dorm not included. Word can use an **IF/THEN/ELSE** structure similar to the one in Excel to help with a situation like that.
1. To the right of **Interest3**, tap **Enter** to go to the next line. On the **Mailings** tab, in the **Write & Insert Fields** group, click **Rules** and select **If...Then...Else**.
 2. Set the dialog box as follows. Leave the **Otherwise insert this text** box blank.

Insert Word Field: IF		
IF		
Field name:	Comparison:	Compare to:
Dorm	Equal to	Bailey
Insert this text:		
I live in Bailey Hall on the St. Paul Campus		

This says that if the **Dorm** field is **Bailey** then **I live in Bailey Hall on the St. Paul Campus** will be displayed. Otherwise, nothing will be displayed.

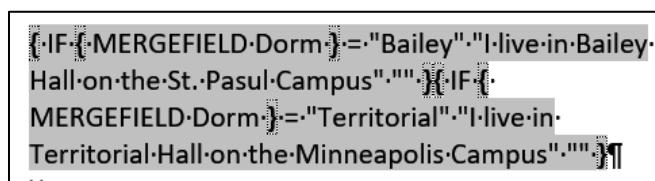
3. Click **OK**.

Notice that the code for the **IF/THEN/ELSE** rule has a form that is similar to an Excel **IF** function. Where Excel uses a comma to separate the three parts Word uses spaces.


Excel: **=IF(A1="Bailey","I live in Bailey Hall on the St. Paul Campus",")**

Word: **{ IF { MERGEFIELD Dorm } = "Bailey" "I live in Bailey Hall on the St. Paul Campus" "" }**

4. Enter a similar rule for Territorial Hall. You could go through a similar process as you did for Bailey Hall or you could simply copy the rule for Bailey Hall, paste it, and then change **Bailey** to **Territorial** and **St. Paul** to **Minneapolis**.



- f. Add an image to the labels.

1. Click to the left of **H** in **Hello**.
2. On the **Insert** tab, in the **Illustrations** group, click **Pictures** and select **This Device**.
3. Navigate to the **Word Files** folder and select the picture of **Goldy** (**HW07-2 Goldy Original**). Or, choose any other picture you wish.
4. Click **Insert**.
5. Double-click the image and change its height to **0.5** inch.
6. Click the **Layout Options** button  and select **In Front of Text**.
7. Move the image to the upper right corner of the first cell.

8. On the **Mailings** tab, in the **Write & Insert Fields** group, click **Update Labels** to copy this cell to all the other cells.

Hello, my name is {MERGEFIELD-First} My major is {MERGEFIELD-Major} My interests are → {MERGEFIELD-Interest1} → {MERGEFIELD-Interest2} → {MERGEFIELD-Interest3} {IF {MERGEFIELD-Dorm} = "Bailey" "I live in Bailey Hall on the St. Pasul Campus" ""} {IF {MERGEFIELD-Dorm} = "Territorial" "I live in Territorial Hall on the Minneapolis Campus" ""}	{NEXT} Hello, my name is {MERGEFIELD-First} My major is {MERGEFIELD-Major} My interests are → {MERGEFIELD-Interest1} → {MERGEFIELD-Interest2} → {MERGEFIELD-Interest3} {IF {MERGEFIELD-Dorm} = "Bailey" "I live in Bailey Hall on the St. Pasul Campus" ""} {IF {MERGEFIELD-Dorm} = "Territorial" "I live in Territorial Hall on the Minneapolis Campus" ""}
{NEXT} Hello, my name is {MERGEFIELD-First} My major is {MERGEFIELD-Major}	{NEXT} Hello, my name is {MERGEFIELD-First} My major is {MERGEFIELD-Major}

9. Tap **Alt + F9** to preview the results (click **Preview Results** if necessary).

Hello, my name is Jill My major is English My interests are → Flute → Walking → Gardening I live in Bailey Hall on the St. Pasul Campus	Hello, my name is Sue My major is Biology My interests are → Band → Jogging I live in Territorial Hall on the Minneapolis Campus
Hello, my name is Bill My major is Computer Science	Hello, my name is Barak My major is Political Science

- g. Create a file that has the labels by doing the following:

- On the **Mailings** tab, in the **Finish** group, click **Finish & Merge**, and select **Edit Individual Documents**. This will send the output to a new Word file that you can edit if you need to. Click **OK**.
- Save the file using the name **HW09-4 HWID Name Tag PRN Done**

Next time you open **HW09-4 HWID Name Tag MAIN Done**, Word will ask if you want to insert the data from the file that contains the data. Click **Yes**.

- h. With **HW09-4 HWID Name Tag PRN Done** still open, tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it. Also save and close **HW09-4 HWID Name Tag MAIN Done**.

HW09-5 IF Merge

Problem: How can you create customized letters or emails that will send different information to different people depending on given conditions?

In this activity you will set up a mailmerge email that offers a deal on magazine subscriptions to **Sports Illustrated** if the person is male or **Ms. Magazine** if the person is female. Also, you will display a different shipping and handling charge depending on the zip code of the person. The data file contains information like this:

Title	→	LastName	→	FirstName	→	Address	→	City	→	State	→	Zip
Mr.	→	Anderson	→	Eric	→	619-4th-St.-NE-apt.1	→	Robbinsdale	→	AZ	→	85375
Ms.	→	Arias	→	Jennifer	→	1522-Colleen-Ave	→	Syosset	→	NY	→	11791

- a. In order to offer the correct magazine, you have to know the sex of the person. The title **Mr.** clearly indicates a man while **Ms.**, **Miss**, or **Mrs.** clearly indicates a woman. But what if the title is missing, or if it is listed as **Dr.** or **Professor**? You can use Excel to try to figure out the sex. Do the following:

1. Open the document **HW09-5 IF Merge DATA Original**, which is one of the files you downloaded at the start of the term.
2. Save the document to the Word Files folder using the name **HW09-5 HWID IF Merge DATA Done**.
3. Copy the data, start Excel, and paste the data as text starting in **A1**. The tabs in the Word file will indicate how the data should be placed into cells.
4. In **H1** type **Sex**.
5. In **H2** enter an Excel formula that will display:

Male if the title in **A2** is **Mr.**

Female if the title in **A2** is **Ms.**, **Miss**, or **Mrs.**

Unknown if neither of the above is true (that is, the sex is not obvious).

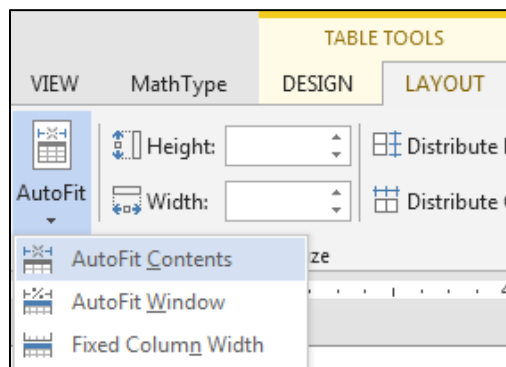
=IF(A2="Mr.,"Male",IF(OR(A2="Ms.",A2="Miss",A2="Mrs."),"Female","Unknown"))

6. Fill the formula in **H2** down to **H39**.

H2	=IF(A2="Mr.,"Male",IF(OR(A2="Ms.",A2="Miss",A2="Mrs."),"Female","Unknown"))											
	A	B	C	D	E	F	G	H	I	J		
1	Title	LastName	FirstName	Address	City	State	Zip	Sex				
2	Mr.	Anderson	Eric	619 4th St.	Robbinsda	AZ	85375	Male				
3	Ms.	Arias	Jennifer	1522 Colle	Syosset	NY	11791	Female				
4	Miss	Aure	Sue	601 West 1	Renton	WA	98059	Female				

If it is important, you could eyeball the data and manually enter the sex of the **Unknown** people, if possible. For example, Dr. Alexander Ayu most likely is a man so you could type **Male** in **H5**. However, in row **6** Terry Bagha could be either male or female so you are out of luck there. With 38 names cleaning the data would take 2 minutes; with 50,000 names it might not be worth the time and money. That is why it sometimes is difficult to have data about yourself corrected (say your social security number or date of birth) — it is difficult and costs too much if the database is large.

7. Copy **A1:H39**, switch to Word, tap **Ctrl + A** to select everything, tap **Delete**, and finally tap **Ctrl + v** to paste the new data. It will paste as a table but that is fine.
8. Select the table and, on the **Table Layout** tab, in the **Cell Size** group, click **AutoFit** and select **AutoFit Contents**.



9. Save and close **HW09-5 HWID IF Merge DATA Done**.
 10. Save the Excel file using the name **HW09-5 HWID IF Sex Added Done** and then close it.
- b. Set up the mail merge main file by doing the following:
1. Open the document **HW09-5 IF Merge MAIN Original**, which is one of the files you downloaded at the start of the term.
 2. Save the document to the **Word Files** folder using the name **HW09-5 HWID IF Merge MAIN Done**
 3. Insert a footer that contains the name of the file.
 4. On the **Mailings** tab, in the **Start Mail Merge** group, click **Start Mail Merge** and select **Letters**.
 5. On the **Mailings** tab, in the **Start Mail Merge** group, click **Select Recipients** and select **Use an Existing List**. Navigate to your **Word Files** folder and double-click **HW09-5 HWID IF Merge DATA Done**.
 6. Replace the red text **Title**, **FirstName**, **LastName**, **Address**, **City**, **State**, **ZIP** with their merge field codes (**Mailings**, **Write & Insert Fields**, **Insert Merge Field**).

c. Create the mail merge by doing the following:

1. You want to skip records where the **Sex** is **Unknown**. Be sure the insertion point is at the top of the document and then, on the **Mailings** tab, in the **Write & Insert Fields** group, click **Rules** and select **Skip Record IF...**
2. Select **Sex** for the **Field name**, select **Equal to** for the **Comparison**, and type **Unknown** for the **Compare to** boxes.

Insert Word Field: Skip Record If

Field name:
Sex

Comparison:
Equal to

Compare to:
Unknown

OK Cancel

3. Click **OK**.
4. Select the red text **MagazineChoice**.
5. On the **Mailings** tab, in the **Write & Insert Fields** group, click **Rules** and select **If...then...Else**.
6. Choose **Sex** from the **Field name** menu and **Equal to** from the **Comparison** menu. Type **Male** in the **Compare to** box. Type **Sports Illustrated** in the **Insert this text** box. Leave the **Otherwise** box empty and click **OK**.
7. Repeat the process but type **Female** in the **Compare to** box. Type **Ms. Magazine** in the **Insert this text** box. Leave the **Otherwise** box empty and click **OK**.
8. Tap **Alt + F9** to view the codes.

Thank you for your interest in our magazines. As a new customer I would like to offer you a special deal on { IF { MERGEFIELD Sex } = "Male" "Sports Illustrated" "" } { IF { MERGEFIELD Sex } = "Female" "Ms. Magazine" "" }. Your special yearly rate is **Price**. The shipping and handling charge would be **Shipping**.

Take a moment to look at the field codes. For example:

{ IF { MERGEFIELD Sex } = "Male" "Sports Illustrated" "" }

You can edit the field parameters as if they were text. For example, if you wanted to change **Sports Illustrated** to **Newsweek**, you would delete **Sports Illustrated** and type **Newsweek** in its place.

9. Tap **Alt + F9** again to hide the codes.

10. The prices of the two magazines are different. Sports Illustrated costs \$15.99 while Ms. Magazine costs \$13.99. Follow the same procedure as above to replace the red word **Price** with the following:

Field name:	Comparison:	Compare to:
Sex	Equal to	Male
Insert this text:		
\$15.99		
Otherwise insert this text:		
\$13.99		

11. In the same way, replace the red word **Shipping** with the following:

Field name:	Comparison:	Compare to:
Zip	Greater than	50000
Insert this text:		
\$6.95		
Otherwise insert this text:		
\$4.95		

- d. On the **Mailings** tab, in the **Preview Results** group, click the **Preview Results** button. This will show the results for the first person in the data file, **Eric Anderson**. If you click the **Next Record** arrow you will see the results for **Jennifer Arias**.
- e. On the **Mailings** tab, in the **Finish** group, click **Finish & Merge** and select **Edit Individual Documents**. When the **Merge to New Document** dialog box appears, click **OK**. This will produce a new document that contains the individual letters, one per page.

Scroll down a bit and notice that **Ayu, Bagha, Baker, Baltz**, and others were skipped because their sex is unknown.

- f. Close the newly merged document **without** printing or saving it.
- g. Do the following to print the main document with the field codes displayed:
1. Click the **File** tab, select **Options**, click **Advanced**, scroll down to the **Print** group and click the box next to **Print field codes instead of their values**.

Mac: Click **Word** menu, **Preferences**. Under **Output and Sharing**, click **Print**. Under **Include in Print Version**, check **Field codes**.

2. Click **OK**.

3. Tap **Ctrl + p** and compare the preview with the key. Notice that the field codes will be printed rather than their values. This is what you want. Make needed corrections and save the document but **do not** close it. This is what you will do when you create the pdf version of the file for submission.
4. **Now, turn off the field codes printing by doing this:** Click the **File** tab, select **Options**, click **Advanced**, scroll down to the **Print** group and clear the check in the box next to **Print field codes instead of their values**. Click **OK**.

Mac: Click **Word** menu, **Preferences**. Under **Output and Sharing**, click **Print**. Under **Include in Print Version**, uncheck **Field codes**.

h. Save the document and exit Word.

Step 4 Submit Now, submit the following. Use these names for the pdf files:

HW09-1 HWID 3A Quantitative Technology Done Page 4 – Do not submit pages 1, 2, or 3

HW09-2 HWID 3B Environment Newsletter Done

HW09-3 HWID Home Address Labels Done

HW09-4 HWID Name Tag PRN Done

HW09-5 HWID IF Merge MAIN Done (Codes Showing) – Codes must be showing

Create a pdf file of the output for each of the above, place them in a folder called **HW09 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW09 Word Chapter 3: Research Papers, Newsletters, and Mail Merge**.

Step 5 Backup Now would be a good time to backup your files.

Project 10

Word: Styles, Cross-References, TOC, Indexes


Step 1 Read For this project, there are no pages to read in your textbook.


Step 2 Activities For this project, there are no textbook activities.


Step 3 Homework Do the problems listed below, and turn them in for grading.

In Word, a **style** is defined as a collection of text and paragraph formats. The formats are saved as a collection, given a name, and applied to text just like any other format. As you will see below, styles are extremely useful.

Word has five style types:

Character styles contain formatting characteristics that can be applied to text, such as font name, size, color, bold, italic, underline, borders, and shading. In a list of styles, character styles are indicated using this icon 

Paragraph styles include everything that a character style contains, but it also controls all aspects of a paragraph's appearance, such as text alignment, tab stops, line spacing, and borders. In a list of styles, paragraph styles are indicated using this icon 

Linked styles behave as either character styles or paragraph styles, depending on what you select. If you click in a paragraph or select a paragraph and then apply a linked style, the style is applied as a paragraph style. However, if you select a word or phrase in the paragraph and then apply a linked style, the style is applied as a character style, with no effect on the paragraph as a whole. In a list of styles, linked styles are indicated using this icon 

List styles determine the look of lists, including characteristics such as bullet style or number scheme, indentation, and any label text.

Table styles determine the look of tables, including characteristics such as the text formatting of the header row, gridlines, and accent colors for rows and columns.

HW10-1 Character Styles and the Declaration of Independence

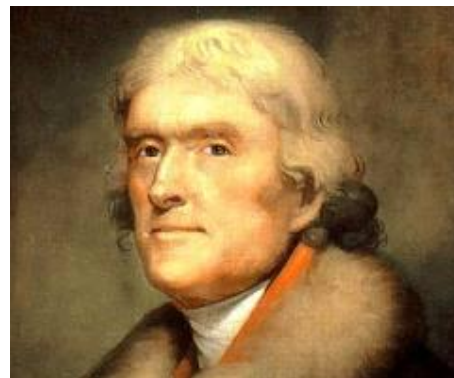
Problem: How can you create character formats that can be changed throughout a document by changing one occurrence?

There may be times when you want a particular word or phrase to have special font characteristics throughout a document. For example, in this Study Guide, the default paragraph font is black 12 point Arial, without bold or italic or other enhancements. However, all computer file names appear in 12 point Arial, dark blue, bold. This makes them stand out from the rest of the text and helps the reader quickly identify them as file names.

Individually applying 12 point Arial dark blue bold to each of the 226 occurrences of file names that appear in this Study Guide would be very time consuming. To get around problems like this, you can use **character styles**. When you want a particular word or phrase to have those characteristics, you simply select the text and tell Word to apply the character style you have defined.

If you want to change any characteristic (color, size, etc.) of a character style, that is easily done. When the definition is changed all text with that character style changes immediately everywhere in the document.

To see how this works, you will carry out some character style modifications on an excerpt from the Declaration of Independence.⁴² The Declaration was drafted by Thomas Jefferson (who later became the third president of the United States) between June 11 and June 28, 1776. In it, Jefferson expressed the convictions in the minds and hearts of the American people. The political philosophy of the Declaration was not new; its ideals of individual liberty had already been expressed by people such as John Locke (not the stoic guy in *Lost* but the seventeenth century English philosopher and physician). What Jefferson did was to summarize this philosophy in **self-evident truths** (ideas so obvious that they need no proof), such as “all men are created equal”⁴³. The Declaration is considered to be a powerful and important statement on human rights. It also set forth a detailed list of grievances against King George III of England in order to justify before the world the breaking of ties between the American colonies and Great Britain. Benjamin Franklin and John Adams (who later became our second president) had a hand in editing Jefferson’s draft.



The original Declaration, hand printed on parchment most likely by a clerk named Timothy Matlack, currently is on display in the National Archives in Washington, DC. The Continental Congress voted to declare independence from Great Britain on July 2, 1776 and approved the wording of the Declaration on July 4, which we celebrate as Independence Day. Many copies were printed on paper and read aloud from town squares throughout the colonies so that those who could not read would receive the news about the intended separation from England.

In **declaring** their independence, the thirteen British colonies referred to themselves as **States** and that they were **uniting** to form a new and independent country in **America**; hence, the United States of America.

⁴² Text is adapted from <http://www.archives.gov/national-archives-experience/charters/declaration.html>

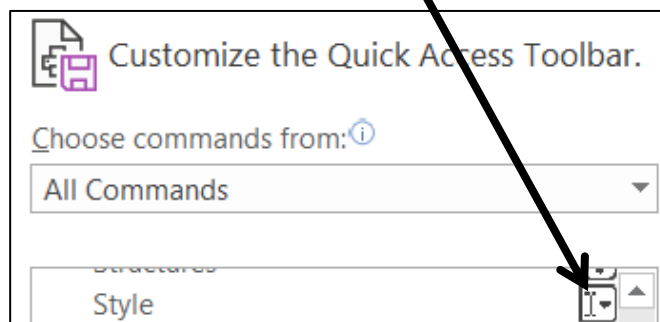
⁴³ While he espoused equality, Jefferson himself owned slaves, as did 11 other presidents at one time. He was always deeply in debt and slave labor made his lifestyle and many accomplishments possible. In an 1820 letter he wrote about slavery, “We have the wolf by the ears; and we can neither hold him, nor safely let him go. Justice is in one scale, and self-preservation in the other.” To his shame, he chose “self-preservation.” Although he was born into one of the wealthiest families in North America, Jefferson was deeply in debt when he died.

- a. Start the process of formatting the document by doing the following:
 1. Open the document **HW10-1 Character Styles and Declaration Original**, which is one of the files you downloaded at the start of the term.
 2. Save the document in the **Word Files** folder using the name **HW10-1 HWID Character Styles Done**
 3. Insert a footer that contains the name of the file. Note that the background graphic of the flag takes up the entire header/footer area so you cannot exit the footer by simply double-clicking in the body of the document. To exit, on the **Header & Footer** tab, in the **Close** group, click **Close Header and Footer**.
- b. On page **SG202**, in **HW07-1 Flyer**, you learned how to modify the **Quick Access Toolbar** by placing the **AutoText** icon on it. In this project you will be working a lot with styles so it will be helpful to add the **Styles** icon. Do the following:

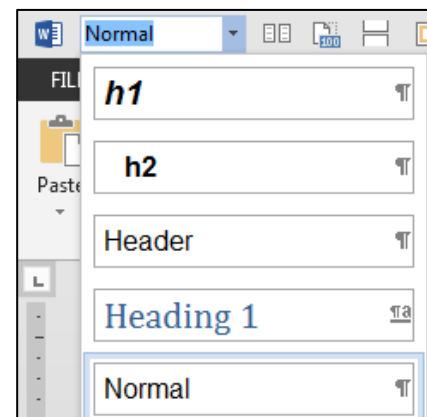


Mac: I don't think you can do this on a **Mac**. Instead, on the **Home** tab, in the **Styles** group, click the arrow, and select **Styles Pane** to show the styles. Skip to part **C**.



1. Click the **File** tab, click **Options**, and then click **Quick Access Toolbar**.
2. In the list under **Choose commands from**, click **All Commands**.
3. Scroll through the list of commands until you see **Style**. A quick way to get to **Style** is to click any command, and then tap the **t** key. This will take you to the start of the **t**'s in the list. Then scroll up a little until you see **Style**. There are a bunch of **Style** commands, but Word does not tell you what each one does. I found out the one I wanted by trial and error. It has this icon on its right



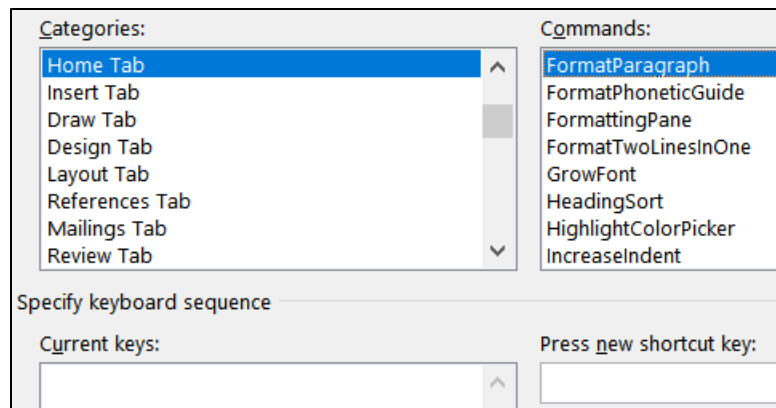
4. Click **Add** and then **OK**. The **Style** menu now appears in the **Quick Access Toolbar**. It shows you the style of the paragraph that contains the insertion point. If you click the arrow, you will get a list of the styles in your document and you can select what you want from the list. Or, you can simply type the style name in the box. Here is what it looks like on my computer:



- c. Word allows you to assign keyboard shortcuts to most commands. Using the keyboard often is quicker than selecting with the mouse. Do the following:
1. Click the **File** tab, click **Options**, click **Customize Ribbon**, and finally click **Customize** just to the right of **Keyboard shortcuts**. Here, you can select a command and then assign a shortcut key. Let's do this for **Paragraph**.

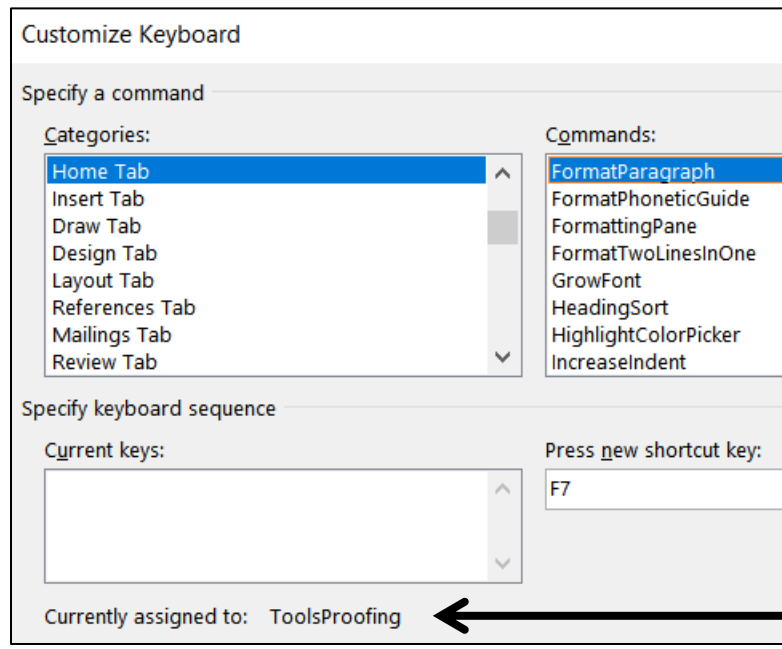
Mac: Click the Format menu. Here, you will see **Paragraph...**  This says the name is **Paragraph...** and it already has a shortcut, **Option + Command + m**. To change it to **F7**, from the **Apple** menu, select **System Preferences**, click **Keyboard**, then click **Shortcuts**. Select **App Shortcuts** on the left, click the **Add** button  Click the **Application** menu and choose **Microsoft Word**. In the **Menu Title** box type **Paragraph...** (you need the ...) In the **Keyboard Shortcut** box tap the **fn + F7** keys. Click **Add**. Quit **System Preferences**. In Word, if you click the **Format** menu, next to **Paragraph...** you now will see **F7**. Skip to step 8 below.

2. Under **Categories**, scroll down and click **Home Tab**. This will display the commands that appear on the **Home** tab.
3. Under **Commands**, scroll down and click **FormatParagraph**.



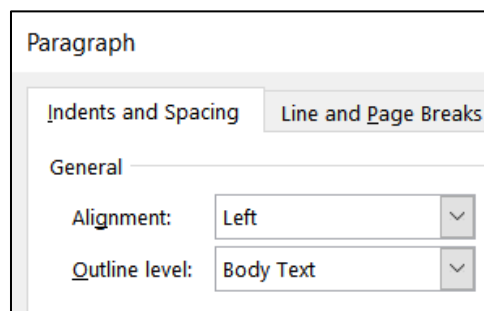
The box under **Current keys** is blank, which means currently there are no shortcut keys to open the **Paragraph** dialog box.

4. Click inside the box under **Press new shortcut key** and tap the **F7** key. You may need to use the **fn** key on a laptop.



Word indicates the **F7** key currently is assigned to **ToolsProofing**.

5. Click the **Assign** button to reassign the **F7** key.
6. Click **Close**.
7. Click **OK**.
8. To test the new assignment, tap **F7**. The **Paragraph** dialog box will open.




9. Click **Cancel**.
10. Follow the same procedure to assign **Ctrl + 9** to the **Go Back** command (**All Commands, GoBack**). The **Go Back** command tells Word to move the insertion point to its previous location. If you execute the command again, Word moves the insertion point back to the next previous location. If you execute the command a third time, Word moves the insertion point back to where it started (in other words, you can only "Go Back" to two previous locations).

FYI, below are the keyboard assignments that I have made on my computer. Remember, on a laptop, you may need to use the **fn** key when you tap a function key.

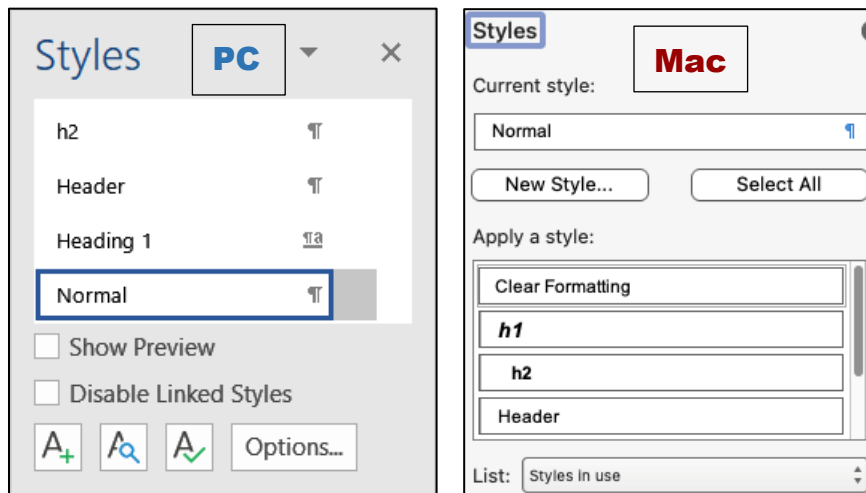
- F1 Help** – This one cannot be changed.
- F2 Cut (Home Tab, EditCut)**
- F3 Copy (Home Tab, EditCopy)**
- F4 Paste (Home Tab, EditPaste)**
- F5 Keep with next** – ensures that the current paragraph is on the same page as the next paragraph (**All Commands, ParaKeepWithNext**)
- F6 Paste Special** – makes it easy to paste things from the clipboard in different formats. I use this to paste text without any formatting (**Home Tab, EditPasteSpecial**)
- F7 Paragraph** – Opens the paragraph dialog box (**Home Tab, FormatParagraph**)
- F8 Bold (Home Tab, Bold)**
- F9 Update Field** – This is the default value.
- F10 Repeat last Find** – I use this so I do not have to keep going back to the **Find** and **Replace** dialog box when I want to move to the next item in a search (**All Commands, RepeatFind**)
- F11 Revert to style** – Removes any “extra” formatting from the style of the current paragraph (**All Commands, ResetPara**)
- F12 Save As** – This is the default value.
- Ctrl + Num 0 Go back to the previous location (All Commands, GoBack)**
- Alt + a Repeat the last action** – **Ctrl + y** does this but it is too difficult to do with one hand (**All Commands, EditRedoOrRepeat**)
- Alt + d Insert date (Insert, InsertDateTime)**
- End Moves to end of document (All Commands, EndOfDocument)**
- Home Moves to top of document (All Commands, StartOfDocument)**


d. Now, you will change all occurrences of the word **Government** to blue 18 point bold Arial Black by creating a character style called **gov** and then applying it to every occurrence of the word **Government** in the file. Do the following:

1. At the top of the document, click just to the left of the first letter in the sentence that begins **The unanimous Declaration**.

- On the **Home** tab, in the lower right corner of the **Styles** group, click the **Styles** dialog box launcher  This will open the **Styles and Formatting** pane.

Mac: There are no dialog box launchers on the Mac. On the **Home** tab, in the **Styles** group, click the **Styles Pane** button.



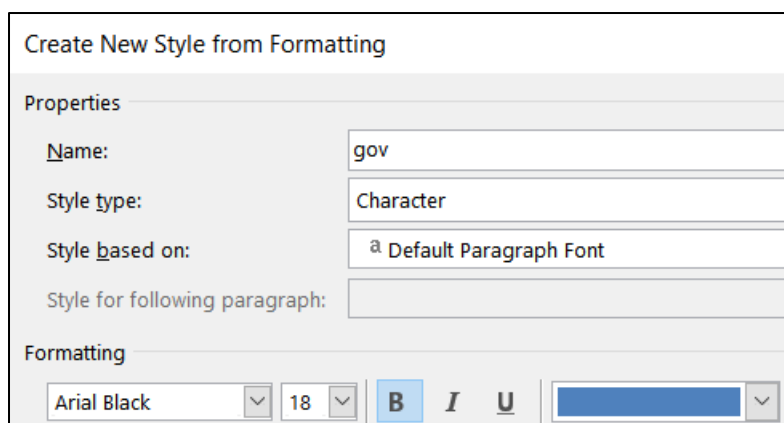
- Click the **New Style** button at the bottom left of the pane. 

This will open the **Create New Style from Formatting** dialog box.


In the **Name** box, replace **Style1** with **gov**. This defines the name of the style for future reference.

In the **Style type** box, select **Character** from the drop-down menu. This defines the style as a character style and so only selected characters will be affected by this style, rather than entire paragraphs.

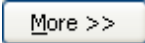
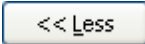
Change the font to Arial Black, 18 pt, bold, blue.



- Click **OK**. The new style, **gov**, will appear in the list of styles.

The little letter, **a**, to the right of **gov** indicates that this is a character style. The other styles, like **Normal**, have a little paragraph mark  showing that these are paragraph styles (discussed later).

- e. Apply the new character style to all occurrences of the word **Government** throughout the document. You could do this manually by looking for and then selecting each occurrence of **Government** and making the changes individually, but that would be time consuming. Here is a faster way:

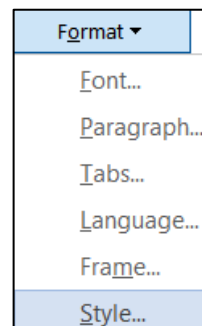
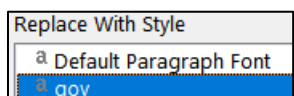
1. Tap **Ctrl + Home** to move the insertion point to the top of the document.
2. Tap **Ctrl + h** to open the **Find and Replace** dialog box.
3. If the **More** button  is showing, click it to display the advanced options of the **Replace** feature. If the **Less** button  is showing the advanced options are already displayed.

4. Click inside the **Find what** box and type the word **Government**.

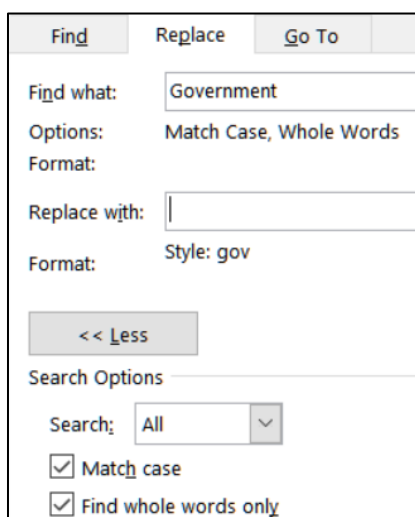
With the insertion point still in the **Find What** box, click the **Match case** box. This will ensure that words like **government** (it starts with a lowercase **g** rather than an uppercase **G**) will not match the criteria.

5. Click the **Find whole words only** box. This will ensure that words like **Governments** (it has an **s** on the end) will not match the criteria.
6. Click inside the **Replace With** box and clear any text so that the box is blank.
7. At the bottom of the dialog box, choose **Format, Style**.

This will display a list of all the styles available to this document. Scroll down and click **gov** (if you type the letter **g** Word will automatically scroll to the first word that begins with the letter **g**; that saves scrolling time).

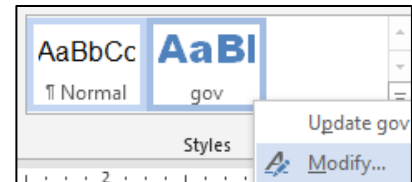


8. Click **OK**.



Notice it says **All** next to **Search**. If you want to just search from here to the end of the document, select **Down**. If you want to search from here to the top of the document, select **Up**.

9. Click **Replace All**. There should be 5 replacements.
 10. Click **OK**.
 11. Close the **Find and Replace** dialog box. Notice the effect on all occurrences of the word **Government**.
- f. Suppose you want to make the word **Government** red instead of blue and you want the font to be underline italic. There is no need to do this manually. All you have to do is redefine the **gov** style. Do the following:
1. On the **Home** tab, in the **Styles** group, right-click the **gov** style and select **Modify**.
 2. Click the **Italic** button and the **Underline** button and change the font color to red.
 3. Click **OK**. Notice that all occurrences of the word **Government** now are red, italic, and underlined.
- g. Tap **Ctrl + p** and compare the preview with the key (page 1 only). Make needed corrections, save the document, and close it. When you are ready to submit the pdf file, you will print only page 1.



HW10-2 Paragraph Styles

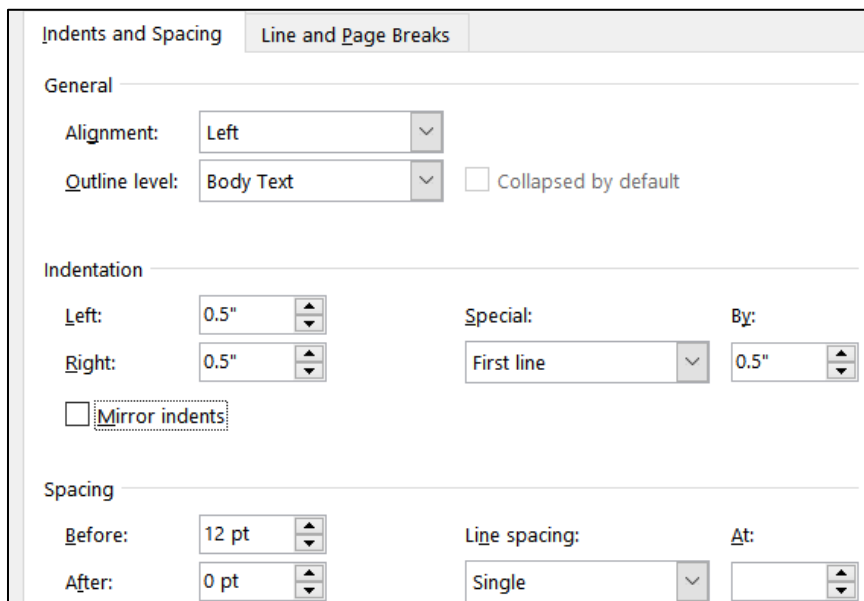
Problem: How can you create paragraph formats that can be changed throughout a document by changing one occurrence?

Paragraph styles are like character styles but they affect an entire paragraph rather than only a word or phrase.

- a. Do the following to get some practice in creating paragraph styles.
 1. Open the document **HW10-2a Paragraph Styles Original**, which is one of the files you downloaded at the start of the term.
 2. Save the document in the **Word Files** folder using the name **HW10-2c HWID Paragraph Styles Done**
 3. On the **Home** tab, in the **Styles** group, click the launch dialog button to show the **Styles** pane. Click the arrow next to **Normal** and select **Modify** from the drop-down menu.
 4. Set the font to 12 point Times New Roman and click **OK**. This changes all the text because every paragraph is in **Normal** style.
 5. Select the paragraph with the title, center align it, and change the font to Arial Black 16 point.

6. Click anywhere in the paragraph which begins **In 1988 the mathematics**.

On the **Home** tab, in the **Paragraph** group, click the dialog box launcher . Set the **Left Indentation** to 0.5 inch, the **Right Indentation** to 0.5 inch, the **First line Indentation** to 0.5 inch, the **Spacing before** to 12 pt, and the **Line spacing** to single.




7. Click **OK**.
8. Click the **New Style** button at the bottom left of the **Styles** pane to open the **Create New Style from Formatting** dialog box.
- In the **Name** box type **Para1**. This new style is automatically set to match the formatting of the paragraph you just modified.
- Be sure the **Style type** is set to **Paragraph**.
9. Click **OK**. A new paragraph style called **Para1** appears in the **Styles** pane and in the **Quick Styles Gallery**.
10. Select the text from just after the first paragraph (starting with the line that contains the single word **Courses**) to the end of the document and apply the **Para1** style by clicking its name in the **Styles** group.



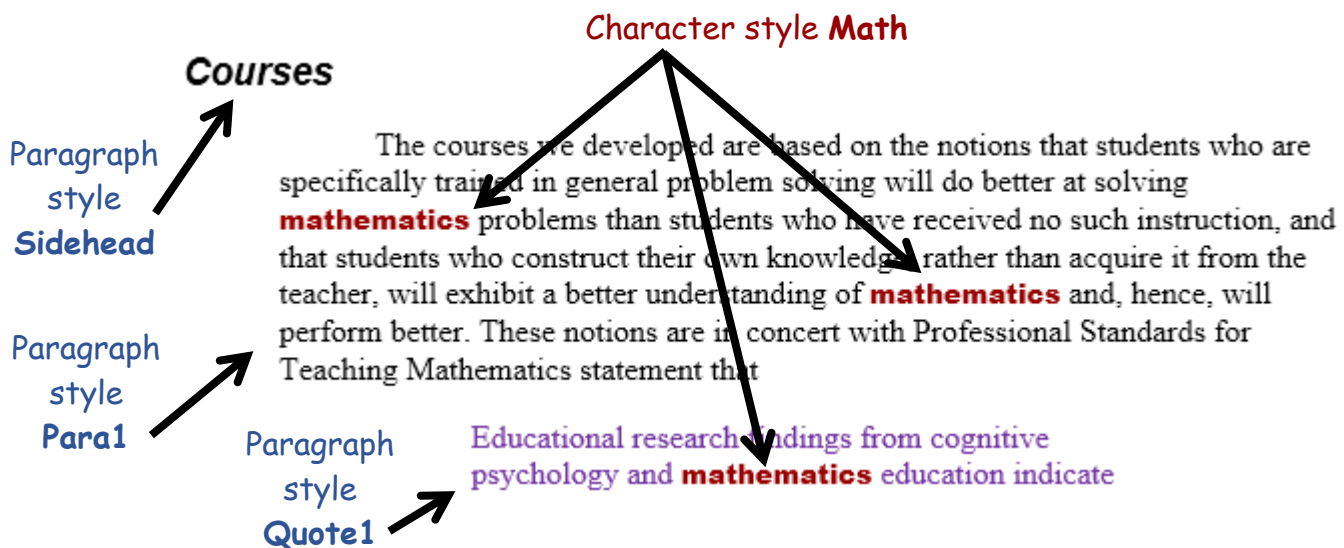
- b. Set up a style for the **sideheads** (the subtitles that separate parts of the text). These should stand out from the regular text.
1. Select the paragraph that contains the single word **Courses** and change the style of that paragraph to **Normal**.
 2. Change the font to 14 point Arial bold.

The way text breaks across pages can affect the readability of a document. For example, it is best that a sidehead does not appear at the bottom of a page when the following text appears at the top of the next page. Word has several ways of addressing line and page breaks as you will see below.

3. Right-click the single word **Courses** and choose **Paragraph**.

4. Change the **Spacing Before** to 12 points.
 5. Click the **Line and Page Breaks** tab.
 6. Put a check in the box next to **Keep with next**. This forces the current paragraph to appear on the same page as the next paragraph. This is good for rows of tables (so the table will not split across a page break) and sideheads (so the sidehead will stay with its following text).
 7. Put a check in the box next to **Keep lines together**. This forces a paragraph to have all of its text on the same page, rather than split between the bottom of one page and the top of the next. This is good for short paragraphs, but it is not practical for long paragraphs.
 8. Click **OK**.
 9. With the insertion point still in the word **Courses**, open the **Styles** dialog box. Create a new style called **Sidehead** that has the characteristics you just set for this paragraph.
 10. Scroll down and apply the **Sidehead** style to the line with the single word **Implementation** and to the line with the two words **Typical Class**.
 11. Scroll up to the second paragraph under the sidehead **Courses** (the paragraph begins **Educational research findings...**) and click anywhere in that paragraph. This is a quotation and so it needs to be formatted differently from other paragraphs.
 12. Apply the **normal** style. Right-click anywhere in the paragraph and select **Paragraph**. If necessary, click the **Indents and Spacing** tab. Set the left indent to 1.5 inches, the right indent to 1.5 inches, the first line indentation to none, the space before to 0, and the line spacing to single.
 13. Click **OK**.
 14. With the insertion point still in the paragraph, open the **Styles** dialog box. Create a new style called **Quote1** that has the characteristics you just set for this paragraph.
- c. Add text at the bottom of this file by inserting the text from another file.
1. Tap **Ctrl + End** to move the insertion point to the end of the document.
 2. On the **Insert** tab, in the **Text** group, click the arrow to the right of the **Object** button  and select **Text from File**. Navigate to the document **HW10-2b Paragraph Styles Add Text Original**, which is one of the files you downloaded at the start of the term. Then, click the **Insert** button.
 3. Click anywhere in the paragraph under **Typical Class** sidehead and select all the text below it. Apply the **Para1** style to this text.
 4. Apply the **Sidehead** style to the blue headings **Discussion**, **Problem Types**, **New Courses**, **Effects**, and **Conclusion**.

5. Apply the **Quote1** style to the two new paragraphs in red (**The idea is to help students...** and **I think the three mathematics professors...**).
 6. Modify the **Quote1** style so that the paragraphs have 12 pt spacing before and so the text is purple.
 7. Modify the **Normal** style so that it has **Widow/orphan** control.
- d. Be sure you understand the difference between **character** styles, which only affect individual words or phrases, and **paragraph** styles, which affect entire paragraphs.
1. Create a **character** style called **Math** that makes the font **Arial Black**, **10 point**, **red**.
 2. Use the Replace feature to change all occurrences of the word **mathematics** to style **Math**. Do NOT change the word **Mathematics** to that style. There should be 9 replacements.



- e. Word comes with a built-in language translator that you can use to translate a section of a document, or the entire document, into more than 70 languages. To see how this works, do the following:
1. On the first page, select the purple text that begins **Educational research findings ...**
 2. On the **Review** tab, in the **Language** group, click the **Translate** arrow and select **Translate Selection**. This opens the **Translator** pane.
- Above the top box it says **From English (detected)**. This means Word was able to determine the language of the selected text.
- Above the bottom box it says **To English** (or possibly some other language depending how your computer is set up).
3. Click the arrow above the bottom box to see a list of available languages. Select any other language you wish. I selected Spanish.

4. Just below the bottom box, click **Insert**. You may have to click **Insert** twice. The purple text is now displayed in Spanish.

Be aware that no two languages will translate exactly word for word but this translation looks pretty good.


- f. Word can also read your text aloud. With the purple text still selected, on the **Review** tab, in the **Speech** group, click **Read Aloud**. Word will “say” the selected text. However, the pronunciation is not very good since Word is expecting English and not Spanish.

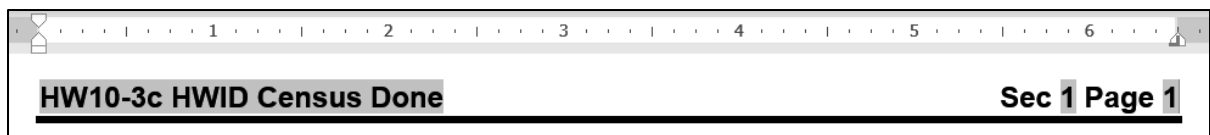
Select the paragraph just above the purple text and click **Read Aloud** again. This sounds pretty good. To stop the reading, click **Read Aloud** again.

- g. Insert a footer that contains the name of the file.
- h. Tap **Ctrl + p** and compare the preview with the key (page 1 only). Make needed corrections, save the document, and close it. When you are ready to submit the pdf file, you will print only page 1.

HW10-3 Census

Problem: How can you break up a document into different sections that can be formatted independently?

- a. Open the document **HW10-3a Census Original**, which is one of the files you downloaded at the start of the term.
- b. Save the document in the **Word Files** folder using the name **HW10-3c HWID Census Done**
- c. Insert a **HEADER** that contains the following:
 - On the left, insert a field with the name of the file.
 - On the **Home** tab, in the **Styles** group, click the dialog box launcher  to open the **Styles** pane. Modify the **Header** style so that it is bold and the paragraph is underlined with a 3 pt width border. Remove the center tab stop located at 3.25 inches.
 - On the right, type the word **Sec** and a space, insert the automatic section number (**Insert**, **Quick Parts**, **Field**, **Section**). Then type a space the word **Page**, a space, and insert the automatic page number.



- d. In the numbered list at the bottom of the first page, convert the spaces after the numbers into periods followed by tabs. You could do this by hand for each of the ten paragraphs but using the **Replace** feature is more illustrative.

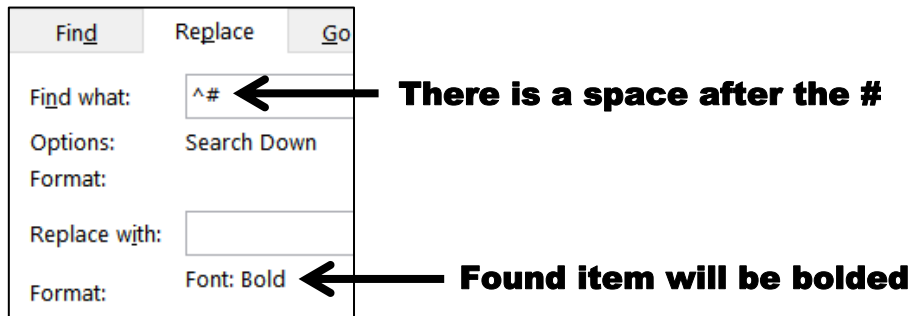
You cannot simply replace the space with a tab (using the **^t** code) because some lines have more than one space and you only want to change the space next to the number. So, you will apply bold to the space to the right of each number and then change the bold spaces into **^t** codes. Do the following:

1. Select the numbered paragraphs.
2. Tap **Ctrl + h** to open the **Replace** dialog box. Clear any text or options that may be in the **Find what** and **Replace with** boxes.

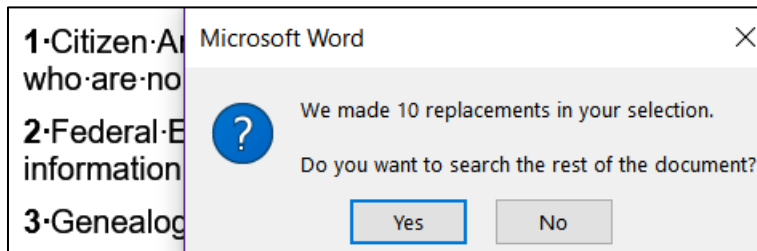
Mac: From the menu bar, click **Edit, Find, Advanced Find and Replace, Replace**.

3. In the **Find what** box, type **^#** and tap the **Spacebar**. The **^#** represents any single digit so Word will "find" a digit followed by a space. You can see a list of special symbols by clicking **Special** at the bottom of the dialog box.

Click inside the **Replace with** box and tap **Ctrl + b**. This will replace the **^# space** with the same characters but bolded.



4. Click **Replace All**. There will be 10 replacements. Click **No** when asked if you want to search the rest of the document.



5. Now, change the bold spaces to **^t** by doing the following:

With the ten numbered paragraphs still selected, in the **Find what** box, enter a single space and tap **Ctrl + b**.

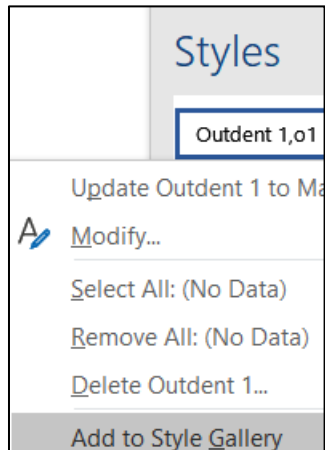
In the **Replace with** box, enter **^t**. Be sure to type the period to the left of **^t**.




6. Click **Replace All**. There will be 10 replacements. Click **No** when asked if you want to search the rest of the document. Notice the spaces have been replaced with the tab arrows.

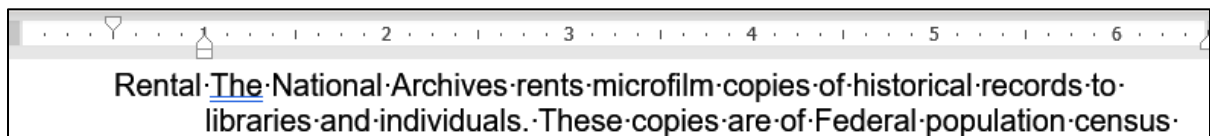
1. → Citiz
but who are
2. → Fede
information

7. Remove the bold from all the numbered paragraphs.

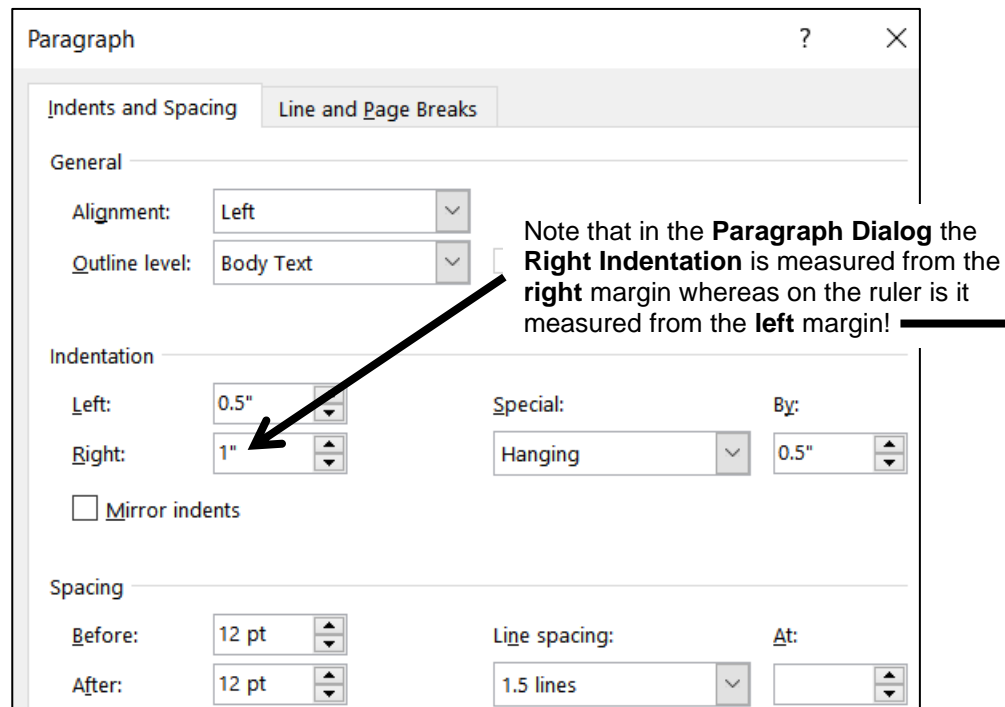
8. Apply the style **Outdent 1** to all the lines and add **Outdent 1** to the **Quick Style Gallery**.




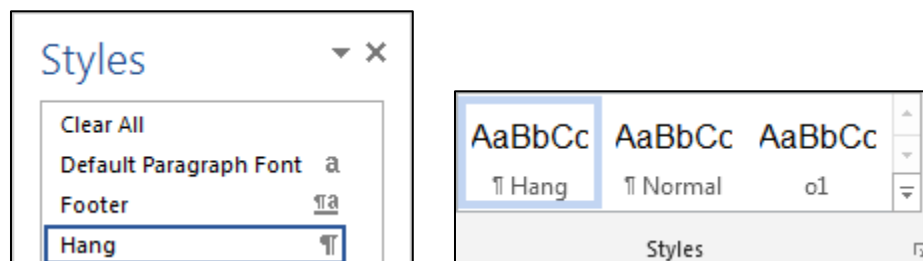
- e. The last two paragraphs of the document have been set to have indentations and red bold italic text. Remove all the formatting and create a new style by doing the following:
1. Select the last two paragraphs.
 2. If necessary, on the **Home** tab, in the **Styles** group, click the dialog box launcher  to open the **Styles** pane.
 3. Scroll to the top and click **Clear All**. This will return the formatting of the selected paragraphs to normal style. The keyboard shortcut for this is **Ctrl + Spacebar**.
 4. Click anywhere in the second to last paragraph (the one that begins **Rental The National Archives rents microfilm ...**). Point to the upside down triangle on the left side of the ruler  and drag it to the 0.5 inch mark. This is the first line indent.
 5. Point to the up pointing triangle on the left side of the ruler  and drag it to the 1 inch mark. This is the left or hanging indent. Be sure the first line indent triangle stays at 0.5.



6. Point to the triangle on the right side of the ruler and drag it to the 5.5 inch mark. This sets the right indent 5.5 inches from the **left** margin.
7. Right-click anywhere in the second to last paragraph and select **Paragraph** to open its dialog box. In the **Spacing** section type 12 in the **Before** box. This puts 12 points of space before (above) the paragraph. Type 12 in the **After** box. This puts 12 points of space after (below) the paragraph. Also, select 1.5 lines from the **Line spacing** box.



8. Click **OK**.
9. In the **Styles** pane, click the **New Style** button  (lower left corner).
10. In the **Create New Style from Formatting** dialog box, type **Hang** in the **Name** box. This will create the new style based on the formatting of the selected paragraph.
11. Click **OK**. The **Hang** paragraph style name appears in the **Styles** pane and in the **Styles** group on the **Home** tab.

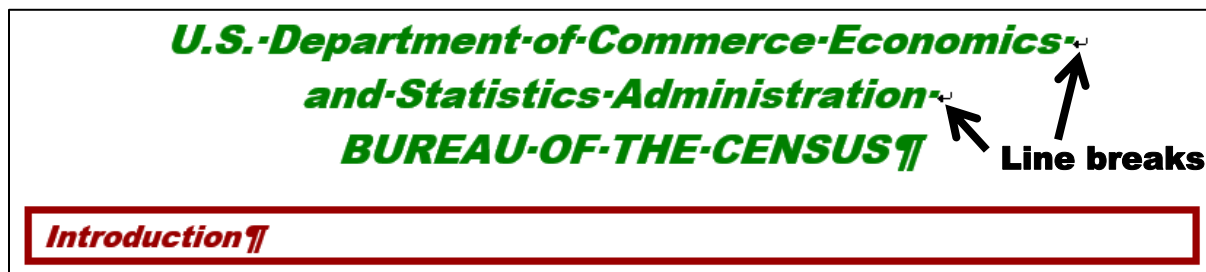


12. Apply the style **Hang** to the last paragraph by clicking anywhere in the last paragraph and then, on the **Home** tab, in the **Styles** group, click **Hang** (or, click **Hang** in the **Styles** pane).

- f. Create a new style for the titles of the last two paragraphs.
1. Make this a character style called **Emphasize1** with the font 11 pt, Arial Black, italic, and blue.
 2. Apply the style to the word **Sales** by selecting **Sales** and clicking the **Emphasize1** name in the **Quick Styles Gallery**. Because this is a character style only the selected word is modified.
 3. Apply **Emphasize1** to the word **Rental** in the second to last paragraph.
- g. Word has a large number of predefined styles that you can apply to words or paragraphs. For example, do the following to apply the predefined paragraph style **Heading 3** to the title and four headings:
1. Tap **Ctrl + Home** to move to the top of the document.
 2. If necessary, click the **Styles** dialog box launcher to open the **Styles** pane. At the bottom of the **Styles** pane, click the **Options** button.
 3. In the **Style Pane Options** dialog box, under **Select styles to show**, select **All styles**. This will display all the styles available to this document.
 4. Click **OK**.
 5. Add **Heading 3** to the **Style Gallery** so you can apply it to a paragraph quickly.
 6. Close the **Styles** pane.
 7. Apply the **Heading 3** style to the following 4 headings:
Introduction, The Document, Census Schedules Available to the Public, and Microfilm Rental and Sales.
- h. Modify the style **Heading 3** so that it has the following characteristics:
- The font is 12 pt Arial Black, italic, and red.
 - There is a 3 pt wide red border around the paragraph.
- i. Tap **Ctrl + Home** to move to the top of the document. Create a new paragraph style called **T1** that has these characteristics:
- The font is 16 pt Arial Black, italic, and green.
 - Center the paragraph
 - No space before

Name:	T1
Style type:	Paragraph
Style based on:	Normal
Style for following paragraph:	T1
Formatting	
Arial Black ▼ 16 ▼ B I <u>U</u> ▼	
<div style="display: flex; justify-content: space-between; align-items: center;"> <div> ≡ ≡ ≡ ≡ </div> <div> ≡ ≡ ≡ </div> <div> ↕ ↕ ↕ </div> <div> ↩ ↪ </div> </div>	

- j. In the first line of the document, insert a line break just before the word **Economics** and another line break just before the word **BUREAU**. To do this, place the cursor just before each word and tap **Shift + Num Enter** (that is, hold down the **Shift** key and, with the **Shift** key held down, tap the **Enter** key on the numeric keypad). The little arrows ↵ indicate where the line breaks are.



- k. Click the left side of the heading **Census Schedules Available...** and tap **Ctrl + Enter**. This will insert a page break so that the heading **Census Schedules Available...** will begin at the top of page 2. The Page Break code is inserted just below item 10.



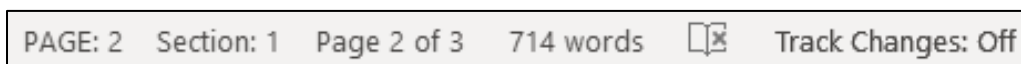
You can also insert a page break by choosing **Insert, Pages, Page Break**.

There are times when it is appropriate to break up a document into several **sections** that have different characteristics, such as page layout (portrait or landscape), margins, headers and footers, and numbers of columns.

For example, I wanted a different header for each project in this Study Guide so the reader could quickly see which project was being discussed. I did this by separating the projects into different **sections** and then putting the name of the project in the header of each **section**.

For this document, you will display some of the text in a 3 column format and also insert a graphic that is better viewed in landscape orientation. Do the following:

- l. The **Status Bar** is located at the bottom of the document window.



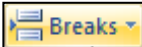
This one shows the location of the insertion point (**PAGE 2**), the section number (**1**), that you are on page **2** of a total of **3**, that the document has **714** words, a button for page proofing, and that **Track Changes** are off. Your Status Bar will be different.

Right-click the Status Bar to see its options:

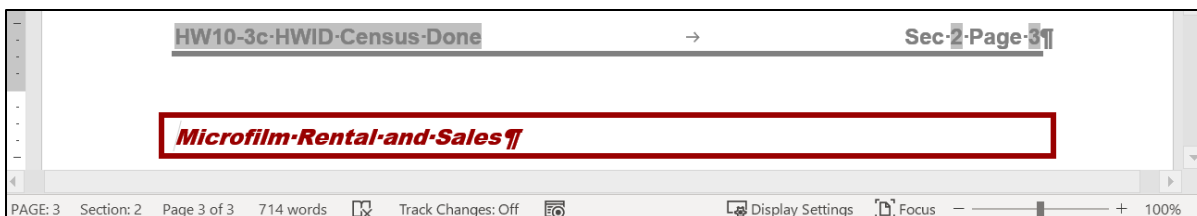
Customize Status Bar		
✓	Formatted Page Number	2
✓	Section	1
✓	Page Number	Page 2 of 3
	Vertical Page Position	2.4"

A check means the item is shown on the Status Bar. You can set your Status Bar as you wish but for this project be sure the first three items are checked.

The difference between **Formatted Page Number** and **Page Number** will be explained in **HW10-5** on page **SG290**.

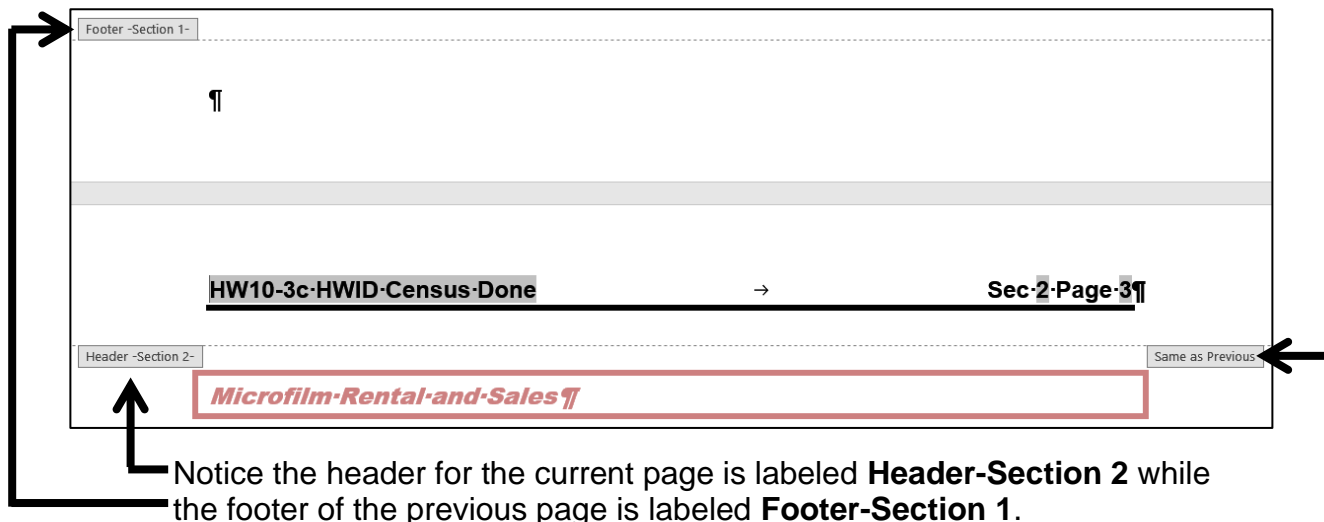
- m. Move the insertion point to the left of the heading **Microfilm Rental and Sales**. On the **Layout** tab, in the **Page Setup** group, click  and in the **Section Breaks** section select **Next Page**. This is like a page break but it also creates a new section to which you can apply different characteristics.


Notice that the **Status Bar** now shows the insertion point is on **PAGE 3** and in **Section 2**. The header also shows this information.



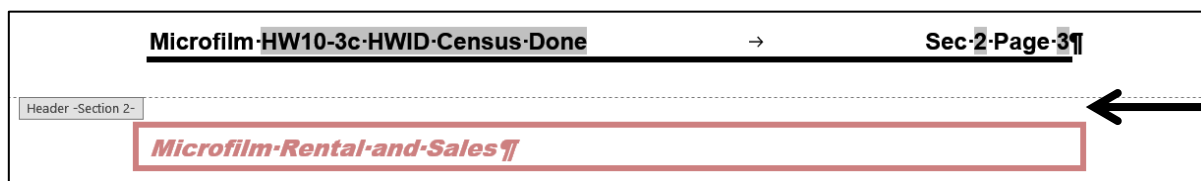
- n. Insert a new header for this section by doing the following:

1. Double-click in the header area.

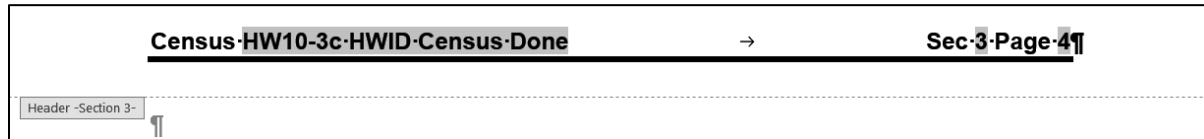


You can tell Word wants to use the same header for section 2 as for section 1 because in the **Navigation** group **Link to Previous**  **Link to Previous** is highlighted and **Same as Previous** appears in the header section.

2. To be able to insert a different header for this section, click the **Link to Previous** button to turn it off. **Same as Previous** disappears.
3. To the left of the file name, type **Microfilm** and a blank space.

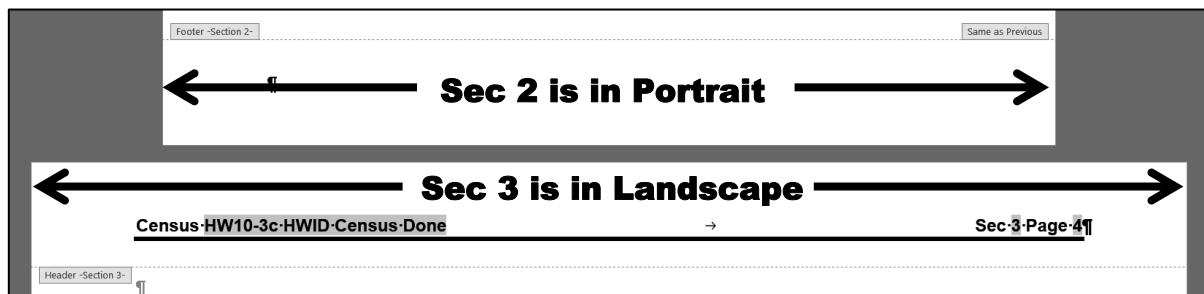


4. Close the **Header**.
- o. Move the insertion point to the bottom of the document and insert another **Next Page Section Break**. The Status Bar and Header both show the insertion point is in section 3 and on page 4.
- p. Change the header of the new section.
 1. Double-click in the **Header** area on page 4 to open it.
 2. Turn off the **Link to Previous** button.
 3. Replace the word **Microfilm** with the word **Census**.



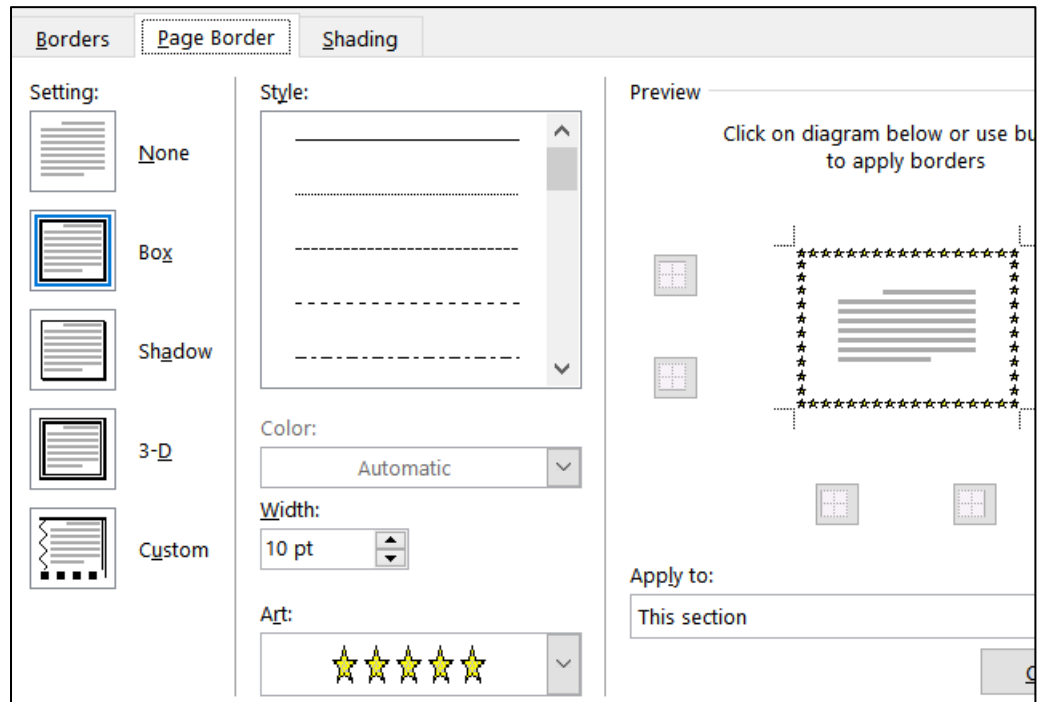
4. Close the **Header**.
- q. Since you are about to insert a picture that should be displayed sideways you must set this new section to landscape orientation. Be sure the insertion point is in the new section (this is section 3).
 1. On the **Layout** tab, in the **Page Setup** group, click **Orientation** and select **Landscape**.

 Scroll up a few lines to see that the previous section remains in portrait (vertical) while the new section is changed to landscape (sideways).
 2. Open the Header and move the right tab stop to the right indent marker at 9 inches so **Sec 3 Page 4** is all the way over on the right.



3. Close the **Header**.
4. On the **Insert** tab in the **Illustrations** group, click the **Picture** button. Navigate to your **Word Files** folder and insert the file **HW10-3b Census Picture Original.jpg**, which is one of the files you downloaded at the start of the term. This is a photo of a census record from 1910.
5. Place a black border around the image and, if necessary, change to **Normal** the style of the paragraph that contains the graphic.

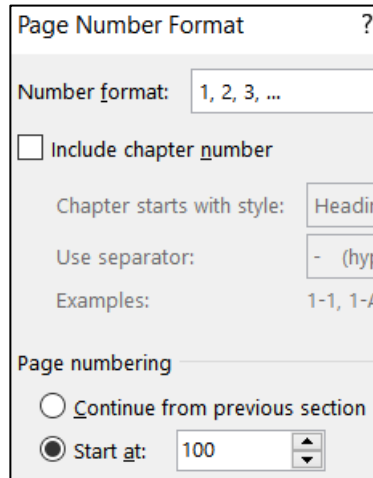
- r. Place a border around section 3 only by doing the following:
1. On the **Design** tab, in the **Page Background** group, click **Page Borders**.
 2. Select **This section** from the drop-down menu under **Apply to**. This will ensure that the border is placed around the pages in this section only and not every page in the document. There is only one page in this section.
 3. Click the arrow next to **Art** and choose a border you like. I chose stars.
 4. Change the number in the **Width** box to 10.
 5. Confirm that under **Setting**, the **Box** icon is selected.



6. Click **OK**.
- s. Different sections of a document can have different page number sequences. You will see how this is useful when you work on a large document that has a Table of Contents in HW10-5. To see how this works now, change the automatic page number in the last section to 100 by doing the following:
1. Be sure the insertion point is on the page with the Census and that the Census is NOT selected. Then, on the **Insert** tab, in the **Header & Footer** group, click **Page Number** and select **Format Page Numbers**.

This allows you to have the page numbers displayed in different formats, such as letters or Roman Numerals. It also allows you to change where the page numbering begins for this section.

2. To the right of **Start at** type 100.



The 'Page Number Format' dialog box is shown. The 'Number format' is set to '1, 2, 3, ...'. The 'Include chapter number' checkbox is unchecked. The 'Chapter starts with style' is set to 'Heading'. The 'Use separator' is set to '- (hyphen)'. The 'Examples' are '1-1, 1-A'. The 'Page numbering' section has two radio buttons: 'Continue from previous section' (unchecked) and 'Start at:' (checked). The 'Start at' value is set to 100.

3. Click **OK**. The page numbering is set to start at 100 for section 3.



- t. Change every occurrence of the word **National** to the **Emphasize1** style by doing the following:

1. Tap **Ctrl + h** to open the Find and Replace dialog box.

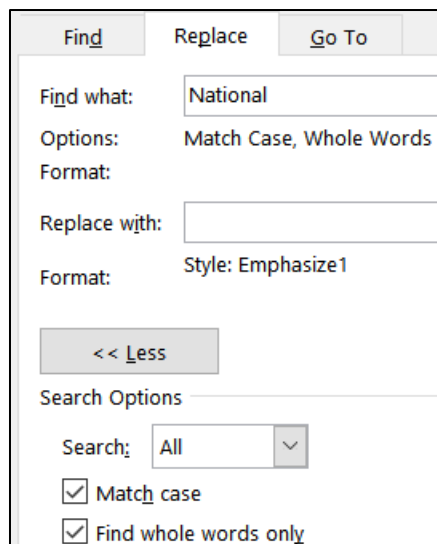
Mac: From the menu bar, click **Edit, Find, Advanced Find and Replace, Replace**.

In the **Find what** box, type **National**

Put a check mark next to **Match case** so **national** will not be changed.

Put a check mark next to **Find whole words only** so **Nationalized** will not be changed.

In the **Replace with** box, clear any text, click the **Format** arrow, select **Style**, and select **Emphasize1**.



The 'Find and Replace' dialog box is shown. The 'Find' tab is active. The 'Find what' box contains 'National'. The 'Options' section has 'Match Case' and 'Whole Words' checked. The 'Format' section has 'Style: Emphasize1' selected. The 'Replace with' box is empty. The 'Search Options' section has 'Search:' set to 'All', 'Match case' checked, and 'Find whole words only' checked.

2. Click **OK** and then **Replace All**. There will be 5 replacements.

- u. Displaying text in multiple columns can make a document easier to read because the reader's eyes do not have to track so far from the end of a line to the start of the next line. Do the following to make part of this document display in 3 columns:

1. On page 2, click just to the left of the first word in the second paragraph (**Microfilm copies of the original...**).
2. On the **Layout** tab, in the **Page Setup** group, click **Breaks** and select **Continuous** under **Section Breaks**.

Archives to open the 1930 records to public use.¶ Section Break (Continuous)

Microfilm copies of the original population schedules, from 1790 through 1920 (virtually all of the 1890 records were destroyed in a 1921 fire), are available at the **National**

3. Insert another continuous section break at the start of the paragraph that begins **A number of State and territorial...**
4. Click anywhere between the two continuous section breaks. The status bar should show **PAGE: 2 Section: 2**
5. On the **Layout** tab, in the **Page Setup** group, click **Columns** and select 3.
6. Click to the left of the first word in the paragraph that begins **There are sound...**
7. On the **Layout** tab, in the **Page Setup** group, click **Breaks** and select **Column**. This will ensure the second column starts at that point.
8. Click to the left of the first word in the paragraph that begins **Researchers may find...** and insert another column break.

Section 1

HW10-3c-HWID-Census-Done

→

Sec: 1 Page: 2

Census Schedules Available to the Public

Individual records from the national population censuses are confidential for 72 years, by law (Title 44, U.S. Code). Thus, April 2002 is the scheduled date for the **National** Archives to open the 1930 records to public use.¶ Section Break (Continuous)

Section 2

Microfilm copies of the original population schedules, from 1790 through 1920 (virtually all of the 1890 records were destroyed in a 1921 fire), are available at the **National** Archives in Washington (http://www.archives.gov/index.html) and its 13 regional archives, and many libraries in various parts of the United States. Most have facilities for making paper copies from the microfilm.¶

.....Column Break.....

There are sound of the surname rather than its spelling indexes on microfilm for the 1880, 1900, and 1920 censuses for each State, and for 1910 for 21 States, principally in the South. Alphabetic indexes to the 1790-1860 and most of the 1870 censuses are available in genealogical libraries.¶

.....Column Break.....

Researchers may find two Bureau of the Census publications useful; most major libraries have copies: *Heads of Families at the First Census of the United States Taken in the Year 1790* (12 vols., Washington, DC, 1907-08, reprinted 1965-75), contains specific names. *A Century of Population Growth—1790-1900* (Washington, DC, 1909, reprinted 1967-1970), includes the incidence of surnames in 1790, and a variety of summary tables from colonial censuses and from 1790 to 1900.¶

Section 3

A number of State and territorial censuses were Nationalized in the intra-decennial years, particularly in the 19th century. See Henry J. Dubester, *An Annotated*

- v. Tap **Ctrl + p** and compare the preview with the key (pages 1, 2, and 100 only). Make needed corrections, save the document, and close it. When you are ready to submit the pdf file, you will print only pages 1, 2, and 100.

HW10-4 Track Changes

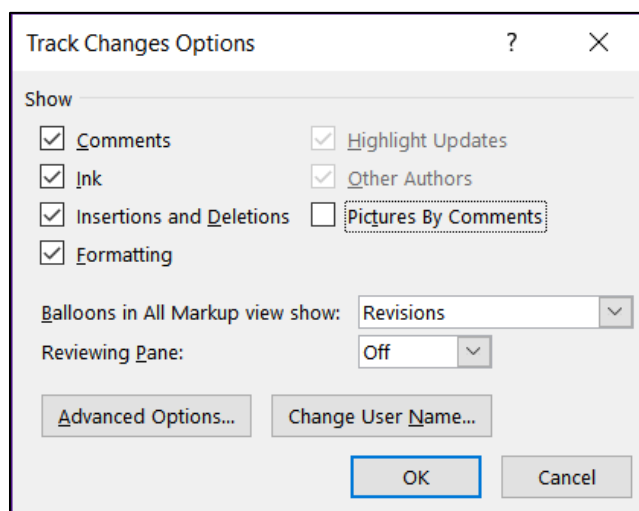
Problem: How can several people collaborate on and edit a document and allow everyone to see the changes made by each individual?

If you are working on a group project you may need to make changes to documents that were written by other group members. The person who writes the original draft is referred to as the **author**. The others who read the document and suggest changes are referred to as the **reviewers**.

You can use Word's **Comment** feature to insert comments into a document, perhaps expanding on something or clarifying something, or suggesting some change that needs to be made. To see how this works, you will edit a paper concerning mathematical modeling and global poverty ⁴⁴

- a. Set up the document by doing the following:
1. Open the document **HW10-4a Track Changes Original**.
 2. Save the document to your **Word Files** folder using the name **HW10-4b HWID Track Changes Done**
 3. On the **Review** tab, in the **Tracking** group, click the launch dialog button. Make the settings match the following:

Mac: **Review** tab, in the **Tracking** group, **Markup Options**.



4. Click **OK**.
- b. Set the options and insert some comments by doing the following:
1. In the **Track Changes Options** dialog box, click **Advanced Options**.

Mac: **Review** tab, in the **Tracking** group, **Markup Options, Preferences**.

⁴⁴ Material adapted from Staats, S. K., Robertson, D. F. (2009). International Inequalities: Algebraic Investigations into Health and Economic Development. MathAMATYC Educator, 1(1) 6-11.

Here is where you can set the way changes are indicated and the colors that will be used. If necessary, make the settings as close as you can to match the following:

Insertions:	Underline	Color:	Red
Deletions:	Strikethrough	Color:	By author
Changed lines:	Outside border		
Comments:	By author		
<input checked="" type="checkbox"/> Track moves			
Moved from:	Double strikethrough	Color:	Green
Moved to:	Double underline	Color:	Green
Inserted cells:	Light Blue	Merged cells:	Light Yellow
Deleted cells:	Pink	Split cells:	Light Orange
<input checked="" type="checkbox"/> Track formatting			
Formatting:	(none)	Color:	By author
Preferred width:	3.7"	Measure in:	Inches
Margin:	Right		
<input checked="" type="checkbox"/> Show lines connecting to text			
Paper orientation in printing:	Preserve		

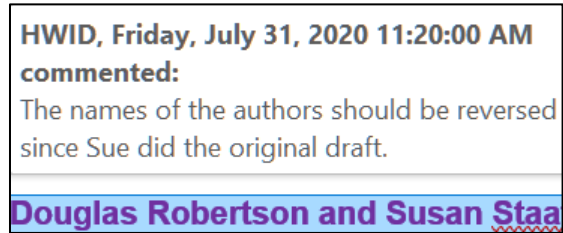
- Click **OK** and click **OK** again.
- On the **Review** tab, in the **Tracking** group, be sure **All Markup** is showing. If not, select it from the drop-down menu.
- Select the author's names (**Douglas Robertson and Susan Staats**)
- On the **Review** tab, in the **Comments** group, click **New Comment**. The screen is redrawn with the selected text highlighted and a balloon on the right.
- Type the following in the balloon: **The names of the authors should be reversed since Sue did the original draft.** In the following screenshots, I set the author to HWID. Your computer probably will show your name.

Algebraic Investigations into International Health and Economic Development

Douglas Robertson and Susan Staats

HWID 2 minutes ago
The names of the authors should be reversed since Sue did the original draft.

7. Point to the selected text and a screen tip appears showing the date and time the comment was made and the name of the person who made it.



8. In the first paragraph, click just to the right of **Sub-Saharan Africa** (it is bold lavender) and insert a comment with the text **Should we list countries here?**
 9. Near the end of the first paragraph, click just to the right of the word **complex** and insert the comment **Should we use the word "complicated" instead?**
- On the **Review** tab, in the **Comments** group, four buttons now are available. You can insert a **New Comment**, **Delete** a selected comment, move to the **Previous** comment, or move to the **Next** comment.
10. Click anywhere in the second comment.
 11. In the **Review** tab in the **Comments** group click the **Delete** arrow and select **Delete**. You can also delete a comment by clicking in it, right-clicking, and selecting **Delete Comment** from the menu.
- c. If you want to make changes to a document and have Word keep a record of those changes you can use the **Track Changes** feature. This is helpful to the author and other reviewers because it allows them to see specifically what you think should be added, deleted, or modified, and how. For example, a comment like **This paragraph is confusing** would be useful but it would be much more helpful if you made specific suggestions as to how the paragraph could be changed to make it better. Once you save the document and send it to others they can accept, reject, or modify the changes.

Note that even if you set the Track Changes options as directed above, your computer may be set up so things look a bit differently. Don't worry about it.

1. If **Track Changes: Off** shows in the Status Bar, click it to turn it on. Or, on the **Review** tab, in the **Tracking** group, click **Track Changes**.
2. Right after the last sentence in the first paragraph, type a space and then insert the following text: **Unfortunately, many people try to avoid using mathematics because they perceive it to be beyond their capabilities.** Because you set insertions to be red and underlined that is how the text appears.
3. At the start of the next paragraph, make the second word (relatively) italic. The change in formatting is noted on the right side.

4. In the same sentence, select the words **to become** and type **in becoming**. Notice how easy it is to see what was deleted and what was inserted.

<p>2006, p. 4). Globalization is responsible for desperate working conditions in many parts of the world, but it also allows people who will never meet in person to communicate and collaborate. Global development issues are <u>complex</u>, interdisciplinary, and frequently, they are conveyed through mathematical data. <u>Unfortunately, many people try to avoid using mathematics because they perceive it to be beyond their capabilities.</u></p> <p>Yet <i>relatively</i> few math educators—nor their colleagues in other disciplines—receive the training in global issues to let them guide students <u>in becoming</u> critical users of international data. Michael Vern, a multicultural education scholar, writes that “(t)he near</p>	<p>HWID Should we use the word “complicated” instead?</p> <p>HWID Formatted: Font: Italic</p> <p>HWID Deleted: to become</p>
---	---

The lines that have changes (added text, deleted text, and formatting) are indicated on the left side by a vertical line.

5. On page 2, select the following text, including the paragraph mark:

<p>Insert-Figure-1-About-Here¶</p> <p>Figure-1: Millennium Development Goals. The assessment targets are available at http://www.un.org/millenniumgoals/.</p>
--

Cut the text. Track Changes notes the deleted text on the right side.


<p>¶</p> <p>¶</p> <p>There is a wealth of data being collected for the Millennium Project that can help students gain a sense of the dramatic differences in standard of living—particularly in</p>	<p>HWID Deleted: Insert-Figure-1-About-Here¶</p> <p>¶ Figure-1: Millennium Development Goals. The assessment targets are available at http://www.un.org/millenniumgoals/.</p>
---	---

6. Go back to page 1, click just to the left of the start of the third paragraph, **In this paper, we...**, and paste the deleted text.

<p>significant social issues like problems in international development.¶</p> <p><u>Insert-Figure-1-About-Here¶</u></p> <p>¶</p> <p><u>Figure-1: Millennium Development Goals. The assessment targets are available at http://www.un.org/millenniumgoals/.</u></p> <p>In this paper, we describe international issues that can be taught alongside standard</p>	<p>HWID Moved (insertion) [1]</p>
--	--

- d. You can choose to view your document in four different ways. Do the following:

1. On the **Review** tab, in the **Tracking** group, notice that **All Markup** is displayed. This tells you that the current view of the document details all the comments and proposed changes.
2. Click the arrow and select **Simple Markup**. This shows a simplified version of the markup.
3. Click the arrow and select **No Markup**. This shows how the document will look if all the changes are accepted.
4. Click the arrow and select **Original**. This shows how the document looked before you started making changes.
5. Click the arrow and select **All Markup** again.

- e. With **HW10-4b HWID Track Changes Done** open, tap **Ctrl + p** and compare the preview with the key (page 1 only). Make needed corrections, **save the document**, and close it. When you are ready to submit the pdf file, you will print only page 1.
- f. Now, let's process the suggested changes.
 1. Open the document and save a new copy of the document using the name **HW10-4c HWID Track Changes Done**
 2. Move to the top of the document. On the **Review** tab, in the **Changes** group, click the **Next** button. This will select the first comment.
 3. Click the **Next** button again to select the second comment.
 4. On the **Review** tab, in the **Changes** group, click the **Reject** button arrow  select **Reject and Move to Next**. The comment is deleted and the next change is selected, which is the inserted text **Unfortunately, many people...**
 5. On the **Review** tab, in the **Changes** group, click the **Accept** button arrow and select **Accept and Move to Next**. This will retain this change and move to the next change, which is the format change of the word **relatively**.

You can move through the document rejecting and accepting changes one at a time. You can accept all the remaining changes by clicking the arrow on the **Accept** button and selecting **Accept All Changes**. Using a similar procedure, you can reject all the rest of the changes.
 6. Turn off **Track Changes**.
 7. **Save** the document and close it. No need to print this one.

HW10-5 Large Document

Problem: How can a large document, such as this Study Guide, be organized and include graphs, equations, a table of contents, an index, and cross references?

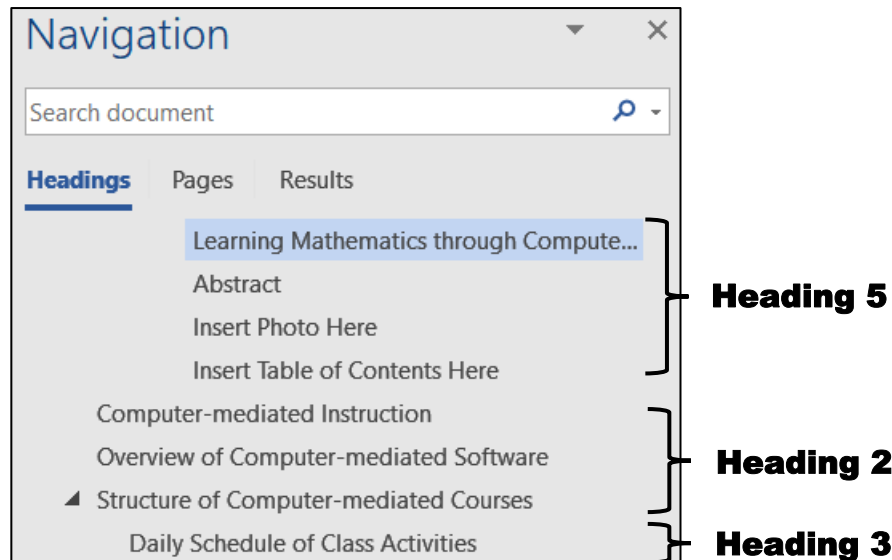
The following book chapter on computer-mediated mathematics courses serves as the basis for this assignment:

Kinney, D. P., Kinney, L. S., Robertson, D. F. (2005). *Learning Mathematics Through Computer-mediated Instruction*. In J. L. Higbee, D. B. Lundell, & D. R. Arendale (Eds.), *The General College vision: Integrating intellectual growth, multicultural perspectives, and student development* (299-318). Minneapolis: University of Minnesota, General College, Center for Research on Developmental Education and Urban Literacy.

- a. Open the document **HW10-5a Large Document Original**, which is one of the files you downloaded at the start of the term.
- b. Save the document to the **Word Files** folder using the name **HW10-5 HWIDf Large Document Done**

The page numbers in your document might not exactly match those described here due to different computer and printer setups.

- c. One way to move quickly through a document is to use the **Navigation Pane**, which displays a list of headings and subheadings in the document. When you click a heading in the **Navigation Pane**, Word jumps to that heading in the document, displays it at the top of the window, and highlights the heading in the **Navigation Pane**. To see how this works, do the following:
1. On the **View** tab, in the **Show** group, click the checkbox to the left of **Navigation Pane**. This displays an outline of the document in a pane on the left side of the window.

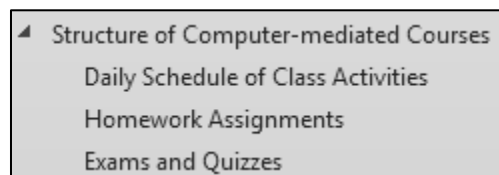


The outline entries are automatically generated using built-in styles called **Heading 1**, **Heading 2**, **Heading 3**, etc. For example, I applied the following styles to various parts of this book chapter:


Heading 1: This heading normally would be used for the title but later on you will create a Table of Contents from the first three levels of headings and you do not want the title in the Table of Contents. So, **Heading 1** is not used. However, you do want the title to appear in the **Navigation Pane** so I applied **Heading 5** to it.

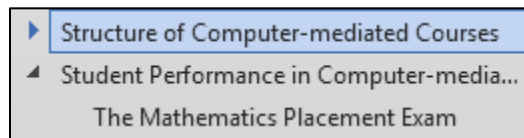
Heading 2: Section headings such as **Computer-mediated Instruction**, **Overview of Computer-mediated Software**, and **Structure of Computer-mediated Courses**.

Heading 3: Some sections have sub-parts. For example, **Structure of Computer-mediated Courses** has sub-parts such as **Daily Schedule of Class Activities**, **Homework Assignments**, and **Exams and Quizzes**.




With this, you can see how a good outline of a paper can be helpful later on as the paper grows and details are filled in.

2. If you think the width of the **Navigation Pane** is too narrow or too wide, you can change it. Point to the vertical bar that separates the **Navigation Pane** from the document screen and the pointer will change to a double pointed arrow. Drag left or right to change the width.
3. In the **Navigation Pane**, click **Structure of Computer-mediated Courses**. The insertion point will jump to that section of the document.
4. Click the arrow  on the left of **Structure of Computer-mediated Courses**. The down-pointing arrow turns into a right-pointing arrow, and the subheadings of **Structure of Computer-mediated Courses** are hidden.

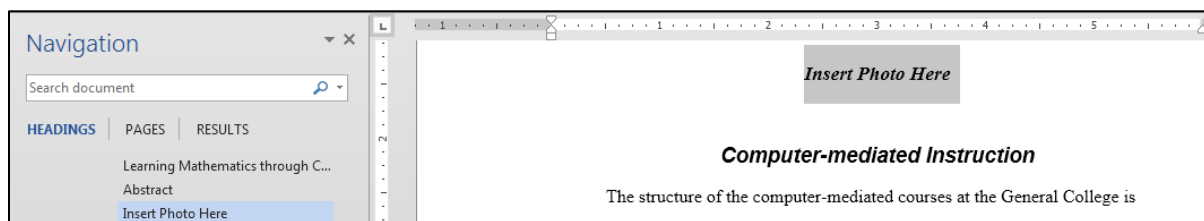


You can use the **arrows** to collapse or expand any section that you wish. In a large document, collapsing and expanding selected levels can make it easier to see the parts of the document you are working on.

5. Click the **arrow** on the left of **Structure of Computer-mediated Courses** to once again display its subheadings.
6. Point to any heading, right-click, and select **Collapse all** to show only the major headings. Then, click **Expand all** so you can see all the headings and subheadings again.
7. This document contains many hidden codes that will be explained later. If the codes are visible, hide them by clicking the **Show/Hide**  button on the **Home** tab.

d. Insert a photo of the room where the classes are taught by doing the following:

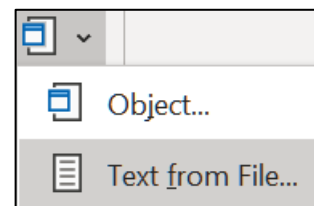
1. Use the **Navigation Pane** to move the insertion point to **Insert Photo Here** (third line from the top in the **Navigation Pane**).
2. Select the entire line.



3. On the **Insert** tab, in the **Illustrations** group, click the **Pictures** button.
4. Navigate to your **Word Files** folder and double-click the file **HW10-5b Photo Original.jpg**.
5. Center the picture, make the height of the picture **5** inches, and place a black border around it.

e. Insert two tables and a graph by doing the following:

1. Move the insertion point to **Insert Table 1 Here** (around page 16).
2. Select the entire line.
3. On the **Insert** tab, in the **Text** group, click the arrow on the right of **Object** and choose **Text from File**.
4. Navigate to your **Word Files** folder and then double-click the file **HW10-5c Table 1 Original**, which is one of the files you downloaded at the start of the term.
5. Change the style of the caption, **Table 1: Course Satisfaction**, to **Heading 5** (**Home**, **Styles**, scroll down and click **Heading 5**).

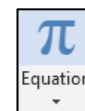


Lecture	216	3.33	0.48	0.03
<i>Table 1: Course Satisfaction</i>				

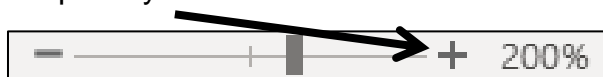
6. Use the **Navigation Pane** to move the insertion point to **Insert Table 2 Here** (about page 17). Follow the same procedure as you did for **Table 1** to insert the file **HW10-5d Table 2 Original**, which is one of the files you downloaded at the start of the term. Change the style of the caption to **Heading 5**.
7. Use the **Navigation Pane** to move the insertion point to **Insert Figure 1 Here** (about page 22). Follow the same procedure as you did for **Table 1** to insert the file **HW10-5e Graph Word Original**, which is one of the files you downloaded at the start of the term. Change the style of the caption to **Heading 5**. Center the figure on the page. If the caption is on the next page, set them to be on the same page (select the line with the figure, then right-click, **Paragraph**, **Line and Page Breaks**, and **Keep with next**).

f. Word offers two ways to enter equations.

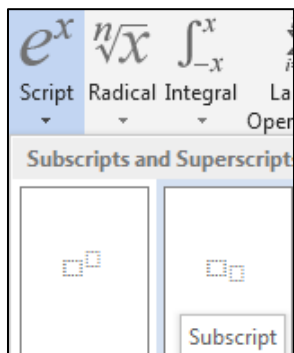
- Use an equation editor such as **MathType**. This is an app you must purchase and install in Word. If you are a STEM major and will be typing a lot of equations this is a good investment because it is fast and efficient.
- Use a pallet from which you can choose mathematical symbols and structures. This is slower but it is easier to use and free. You will use this way since most of you are not STEM majors and probably will not do this very often. Do the following:
 1. Use the **Find** feature to locate the red text **QuadraticFormulaHere**.
 2. Delete the red text **QuadraticFormulaHere**. You will insert this formula at this location:
$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$
 3. On the **Insert** tab, in the **Symbols** group, click the big pi symbol. This opens up the **Equation** tab.



4. It will be easier if you change the magnification to 200% by repeatedly clicking the plus symbol on the **Status Bar** in the lower right corner of the window.



5. Click the **Script** arrow and select **Subscript**.



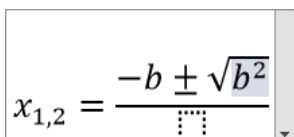
This inserts a template where you can enter the values.



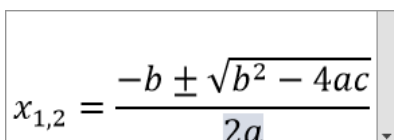
In the larger box, type **x** and in the smaller box type **1,2**



6. Tap the **Right Arrow** key to move out of the subscript box and type **=**
7. Click the **Fraction** arrow and select **Stacked Fraction**
8. Click the numerator and type **-b**.
9. In the **Symbols** group, click the plus or minus symbol \pm
10. Click the **Radical** arrow and select **Square Root**.
11. Click inside the square root symbol, click the **Script** arrow and select **Superscript**. Type **b** in the base box and **2** in the superscript box.



12. Tap the **Right Arrow** key to move out of the superscript box and type **-4ac**
13. In the denominator type **2a**



14. Click outside the editor box to return to normal Word editing mode.
15. Follow the same procedure to replace **EquationHere** with the equation $5x^2 - 3x + 1 = 0$. The line should look like the following:

“Use the Quadratic Formula, $x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ to solve $5x^2 - 3x + 1 = 0$.”

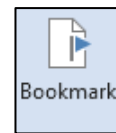
16. Change the magnification back to 100% by repeatedly clicking the minus symbol on the **Status Bar** in the lower right corner of the window.
 17. After the quotation mark, insert a footnote that says **Here, quad refers to the number of sides of a square, which has 2 dimensions**. If necessary, change the font of this footnote to **Times New Roman**.
- g. Create cross references to specific pages in the document so the reader can be directed to other places for more information. Here is an example of a cross-reference in this Study Guide:

For information on opening a Navigation Pane see page SG283.

You cannot simply type the page numbers because as parts of the document are added or deleted the page numbers will change. Word has a way of creating page references that will automatically update each time the document is saved or printed.

Do the following:

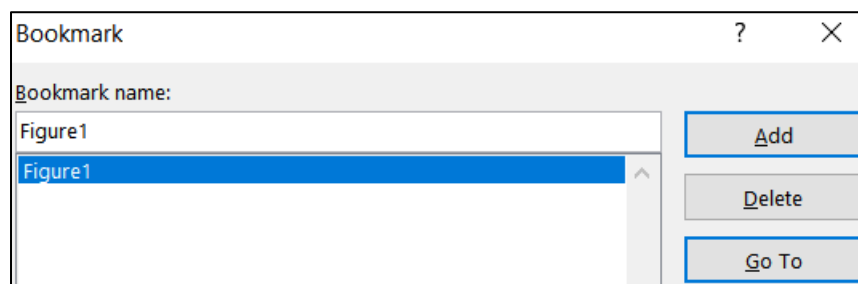
1. Locate the caption **Figure 1: Gender and Type of Class Chosen**. Select the text **Figure 1**.
2. On the **Insert** tab, in the **Links** group, click **Bookmark**. This will display the bookmark dialog box.
3. Type **Figure1** in the **Bookmark name:** box. A bookmark name must begin with a letter and may contain numbers or the underscore but no spaces. So, **Figure1** and **Figure_1** are fine but **Figure 1** is not.
4. Click **Add**. The dialog box closes automatically. This creates a hidden bookmark at this location. If you want to see where bookmarks are, click the **File** tab, click **Options**, click **Advanced**, scroll down to **Show document content**, and put a check next to **Show bookmarks**.



If they enclose text, bookmarks will show as gray brackets: **[Figure 1]**

If no text was selected when you created the bookmark, a gray **I** beam will show.

To go to a specific bookmark, open the **Bookmark** dialog box, click the bookmark you want, and click **Go To**.



To delete a bookmark, open the **Bookmark** dialog box, click the bookmark you want, and click **Delete**.

5. Set up a bookmark for **Table 1: Course Satisfaction**.
6. Be sure the **Show/Hide** feature is off. Use the **Find** feature to locate the blue text **page xx** near the top of the document (about page 3). You want to replace **xx** with the page number where the reference can be found.
7. Delete **xx**. Then, on the **Insert** tab, in the **Links** group, click **Cross-reference**.
8. Set the choices in the **Cross-reference** dialog box as follows:
 - Reference type: **Bookmark**
 - Insert reference to: **Page number**
 - Insert as **hyperlink**
 - For which bookmark: **Figure1**

Cross-reference

Reference type: **Bookmark**

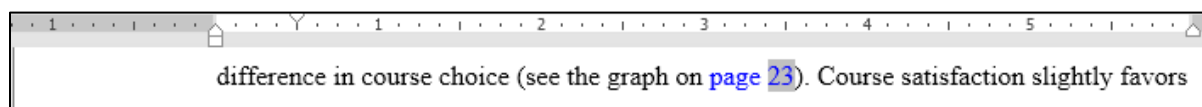
Insert reference to: **Page number**

☒ Insert as hyperlink

☐ Separate numbers with

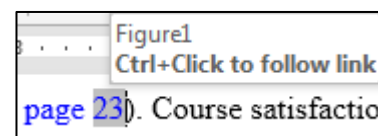
For which bookmark: **Figure1**

9. Click **Insert** and close the dialog box. The page number, **23**, is inserted.



If you add or delete text from the document this page number will automatically be updated when you save or print.

Since you checked the box next to **Insert as hyperlink**, if you hold down the **Ctrl** key and click the page number cross-reference you just set up, the insertion point will jump to that part of the document.



10. Two lines down locate the blue text **page yy**. Replace **yy** with a cross-reference that contains the page number where **Table 1** can be found.
 11. Close the **Cross-reference** dialog box.
- h. Breakup the document into different sections and insert headers for each section by doing the following:
1. Right-click the **Status Bar** to open the **Customize Status Bar** dialog box. If they are not already there, click to place check marks to the left of **Formatted Page Number** (explained later) and **Section**.

Customize Status Bar

<input checked="" type="checkbox"/> Formatted Page Number	3
<input checked="" type="checkbox"/> Section	1
<input checked="" type="checkbox"/> Page Number	Page 3 of 32

2. Use the **Navigation Pane** to move the insertion point to the left of the heading **Abstract** near the top of the document. On the **Layout** tab, in the **Page Setup** group, click the **Breaks** button and select **Section Breaks, Next page**.

Now, the **Abstract** section starts at the top of page 2. The **Status Bar** will show **PAGE: 2 Section: 2**.

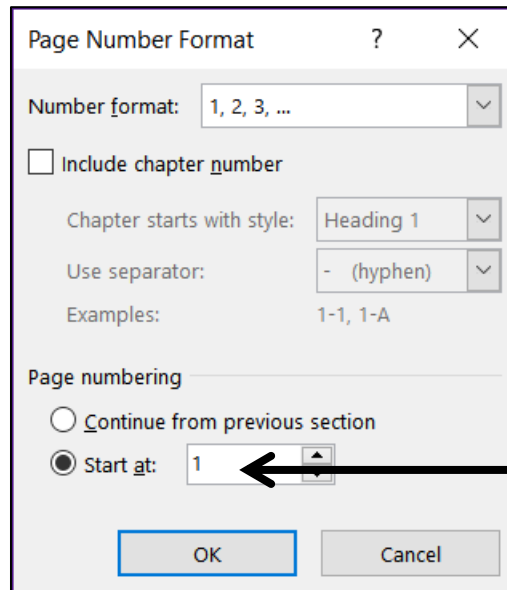
3. Use the **Navigation Pane** to move the insertion point to the left of the heading **Insert Table of Contents Here** and insert a next page section break. Now, the **Table of Contents** section starts at the top of page 3. The **Status Bar** will show **PAGE: 3 Section: 3**.
4. Use the **Navigation Pane** to move the insertion point to the left of the heading **Computer-mediated Instruction** and insert a next page section break. The **Status Bar** will show **PAGE: 4 Section: 4**.
5. Use the **Navigation Pane** to move the insertion point to the left of the heading **Works Cited** near the end of the document and insert a next page section break. The **Status Bar** will show **PAGE: 32 Section: 5**.
6. Use the **Navigation Pane** to move the insertion point to the left of the heading **Insert Index Here** and insert a next page section break. The **Status Bar** will show **PAGE: 35 Section: 6**.

i. Adjust the page numbers of the body of the paper by doing the following:

1. Use the **Navigation Pane** to move the insertion point to the left of the heading **Computer-mediated Instruction** near the top of the document.

Look at the **Status Bar** in the lower left corner of the window. The page number is 4, which is not what you want. This is because the title page, abstract, and Table of Contents are all counted as pages. The **Computer-Mediated Instruction** section should begin on page 1.

2. On the **Insert** tab, in the **Header & Footer** group, click **Page Number**, and click **Format Page Numbers**. In the **Page Number Format** dialog box, click **Start at** and be sure a **1** is in the **Start at** box.




3. Click **OK**. Look at the **Status Bar**: PAGE: 1 Section: 4 Page 4 of 35

PAGE: 1 is called the **Formatted Page Number**. That is the page number that will appear in the document header or footer. This is the page number you just set to 1 in the **Page Number Format** dialog box.

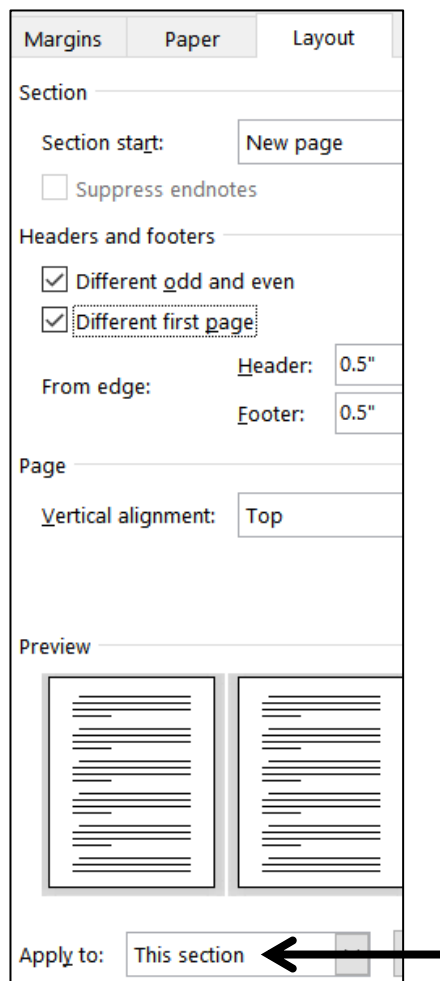
SECTION: 4 means the insertion point is in the fourth section of the document.

Page 4 of 35 means the insertion point is in the "real" 4th page of the document and the document has a total of 35 "real" pages. Your document may have 34 or 36 "real" pages due to differences in printer setups. That is no big deal.

4. Save the document.
- j. Put in headers by doing the following:
1. Use the **Navigation Pane** to move the insertion point to just to the left of the **Computer-mediated Instruction** heading near the top of the document.
 2. On the **Layout** tab, in the **Page Setup** group, click the dialog box launcher  to open the **Page Setup** dialog box.

Mac: From the menu, click **Format** and select **Document**.

Click the **Layout** tab, click the check boxes next to **Different odd and even** and **Different first page**. In the drop-down menu next to **Apply to**, be sure **This section** is selected.



3. Click **OK**. In the Status Bar it says **Page 5 of 36**, which means there now are **36** “real” pages in the document and the insertion point is on the “real” page **5**. Word has automatically inserted an invisible blank page after page 3 because you just told it to set up different headers for the first page of the section, the odd pages of this section, and the even pages of this section.
4. Double-click in the **Header** area. On the **Header & Footer** tab, in the **Navigation** group, click **Link to Previous** to deselect it. This will enable you to change the header for this section without affecting the header in the previous section. The header area is now called **First Page Header - Section 4**. This is the first page of section 4 and you do not want a header on this page.

5. Scroll down and click in the **Even Page Header -Section 4** in the header area, deselect the **Link to Previous** button and remove the center tab stop.

Insert field codes so that the **automatic page number** is displayed on the left and the **file name** is displayed on the right.



6. Scroll down and click in the next header area. It has the label **Odd Page Header -Section 4**. Deselect the **Link to Previous** button and remove the center tab stop.

Type a header that contains your **HWID** on the left and the **automatic page number** on the right.



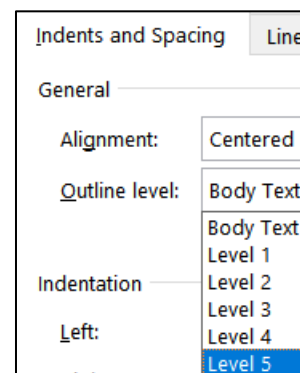
7. Close the **Header and Footer** area.

k. Add a **Table of Contents** by doing the following:

1. Use the **Navigation Pane** to move the insertion point to the left of the heading **Insert Table of Contents Here**.
2. Replace the text with the words **Table of Contents** and tap **Enter**.
3. Change the style of the line that contains **Table of Contents** to normal.
4. Format the line that contains **Table of Contents** as 18 point, bold, Arial, and center the line between the margins.
5. Right-click anywhere in the **Table of Contents** line and select **Paragraph**. Set the **Outline Level** to **Level 5**.

Click **OK**.

This will make the **Table of Contents** heading at the same level as paragraphs that have style **Heading 5** and it will appear in the **Navigation Pane**. Do not use **Heading 1** or **Heading 2** or **Heading 3** style because you do not want the **Table of Contents** heading to be in the actual **Table of Contents**.



6. Click in the blank line just under **Table of Contents**.

7. On the **References** tab, in the **Table of Contents** group, click **Table of Contents** and select **Custom Table of Contents** near the bottom of the menu. The **Table of Contents** dialog box opens. Set it to look like the following (show the page numbers, right align the page numbers, apply a dotted tab leader to the page numbers, choose the format from a template, and show the top 3 levels only):

The screenshot shows the 'Table of Contents' dialog box with the following settings:

- Print Preview:** Shows a sample TOC with three headings: 'Heading 1' (page 1), 'Heading 2' (page 3), and 'Heading 3' (page 5).
- Web Preview:** Shows the same headings as blue hyperlinks: 'Heading 1', 'Heading 2', and 'Heading 3'.
- Options:**
 - ☒ Show page numbers
 - ☒ Right align page numbers
 - Tab leader: (dotted line)
 - ☒ Use hyperlinks instead of page numbers
- General:**
 - Formats: From template (dropdown)
 - Show levels: 3 (spinner)

8. Click **OK**. The **Table of Contents** is inserted.

You can use the **Table of Contents** to quickly go to any item listed. To do this, point to the item, hold down the **Ctrl** key, and click.

Table of Contents	
Computer-mediated Instruction	1
Overview Current Document ed Software	2
Structure Ctrl+Click to follow link d Courses.....	4
Daily Schedule of Class Activities	5

Try it. Hold down the **Ctrl** key, point to **Homework Assignments** and click. The insertion point is moved to the **Homework Assignments** section.

- I. An index is helpful in a large document because it can help the reader quickly find particular words and phrases of interest. Creating an index involves four steps:

Step 1 Mark words and phrases that are to appear in the index. For this document, I have already marked quite a few index entries in order to save you time. You are going to mark a few more and then create the index.


Step 2 Edit the index codes so the wording is appropriate and makes sense.

Step 3 Have Word create the index from the index codes.

Step 4 Check the index and edit the index codes as needed.

Do the following:

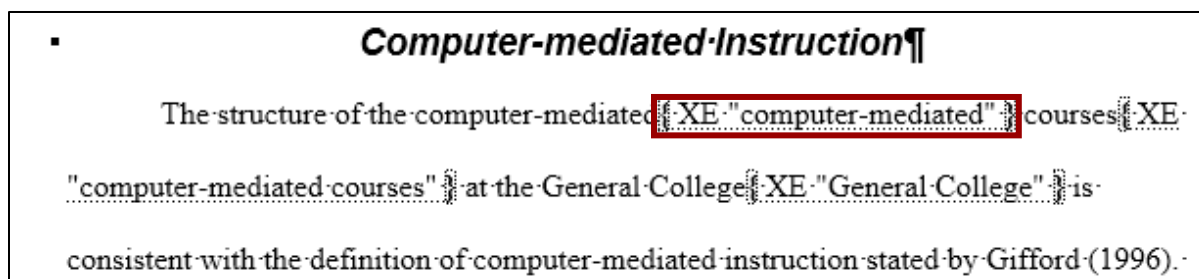
1. Use the **Navigation Pane** to move the insertion point to the left of the heading **Computer-mediated Instruction**.

If the hidden codes are not showing, on the **Home** tab, in the **Paragraph** group, click the **Show/Hide** button .

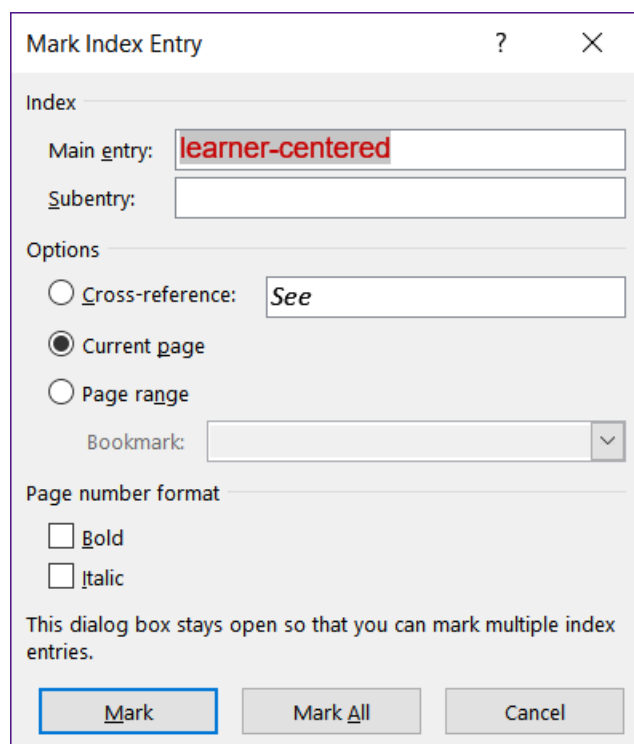
This will display the paragraph marks, ¶, tabs →, spaces, ·, and other document marks such as **index codes**.

The first **index code** look like this: { XE "computer-mediated" }

The prefix **XE** stands for index Entry. The word or phrase that will appear in the index is shown inside quotation marks.



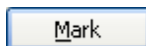
2. Select **learner-centered** in the first paragraph. It is in red to help you find it.
3. Tap **Alt + Shift + x** (or choose **References, Index, Mark Entry**).



The screenshot shows the "Mark Index Entry" dialog box. The "Main entry" field contains "learner-centered". The "Options" section has "Current page" selected. The "Page number format" section has "Gold" and "Italic" checkboxes. The "Mark" button is highlighted.

The selected word appears in the **Main entry** box.

If you want to change it for some reason you can type what you want.



If you click **Mark** the index entry will be marked for this occurrence only.



If you click **Mark All** the entry will be marked for every occurrence of **learner-centered** in the document.

4. Click **Mark**. The phrase **learner-centered** is marked as an index entry.


learner-centered XE "learner-centered"

The **Mark Index Entry** dialog box stays open so you can mark more entries.

5. Move four lines down and select **graphics** (it is in red). Click anywhere in the **Mark Index Entry** dialog box and then click **Mark All**. This will mark every occurrence of **graphics** in the document. Note that this will NOT mark **graphic** or **graphical**. That is one of the drawbacks of the **Mark All** button — variations on the word or phrase will not be marked even though they may be important. Hence, you will have to carefully read the document and tweak the index to make it accurate. This takes time!

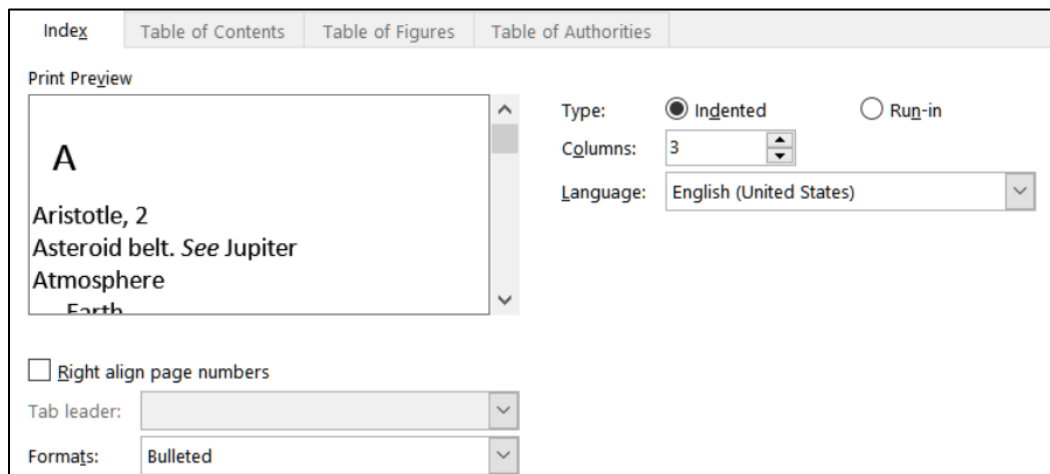
6. Close the **Mark Index Entry** dialog box.

m. Create the index by doing the following.

1. Move the insertion point to the heading **Insert Index Here** at the bottom of the document.
2. Replace the text **Insert Index Here** with the single word **Index** and apply the **Heading 2** style.
3. Click in the blank line below **Index**.
4. Turn off the **Show/Hide** feature by clicking the **Show/Hide** button . If you do not turn off the **Show/Hide** feature the page numbers will be incorrect because the text of the marked index entries will add to the length of the document.
5. On the **References** tab, in the **Index** group, click **Insert Index**.

In the **Columns** box, change the number of columns to **3**.

In the **Formats** box, click the arrow, scroll down, and select **Bulleted**.



The screenshot shows the **Index** dialog box with the following settings:


- Index** tab selected.
- Print Preview** section shows a list of index entries: "A", "Aristotle, 2", "Asteroid belt. See Jupiter", "Atmosphere", and "Earth".
- Type:** ☒ Indented, ☐ Run-in
- Columns:** 3
- Language:** English (United States)
- ☐ Right align page numbers
- Tab leader:** [Default]
- Formats:** Bulleted

6. Click **OK** to create the index. Note that the page numbers in your index may be slightly different from those shown due to the setup for different printers.

<i>Index</i>		
A	exams, 5, 6, 7, 11, 14, 22, 23	N
Academic Systems, 2, 20, 25, 26, 29, 30	Explain, 3, 4, 16, 17	nonlinear, 22, 24
Academic.com, 26, 27, 29	Explore, 3	O
administrative tasks, 9	F	Overview, 2
Algebra, 10, 11, 12, 13	focus groups, 6, 8, 13, 16	P
anywhere, anytime, 20	Focus groups, 10	pass rates, 11
Apply, 3, 4, 16, 17	G	performance, 4, 10
asynchronous, 24	General College, 1, 2, 4	personalized system of
attendance, 4, 8, 13	graphics, 1, 3, 7, 9, 10, 16	
attitude, 16		
attitudes, 10, 16, 25		


- n. It is often the case that after you create the index you will have to modify it. For example, the index you just created lists **attitude** and **attitudes** as separate entries even though they are the same topic. The same is true for **Evaluate** and **Evaluates**. So, after you create the index it is a good idea to print it, go through the entries, and make changes as appropriate. But, do NOT edit the index directly — only edit the marked entry codes in the body of the document. Once you make the entries consistent you can create a new index with a single keystroke.

Change the **Evaluates** index entries to **Evaluate** by doing the following:

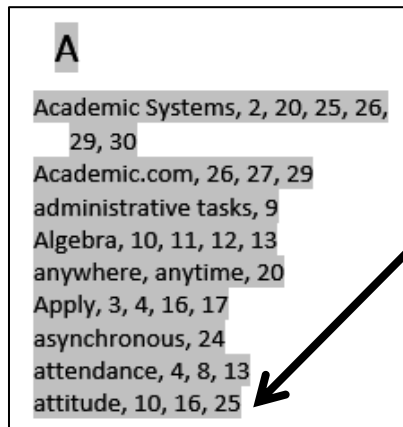
1. Tap **Ctrl + Home** to move to the top of the document.
2. Turn on the **Show/Hide** feature by clicking the **Show/Hide** button .
3. Tap **Ctrl + h** to open the **Find and Replace** dialog box.

In the **Find what** box type: **XE "Evaluates**

In the **Replace with** box type: **XE "Evaluate**

4. Click **Replace All**. Word replaces all the index entries that contain **Evaluates** with **Evaluate** (there should be 3 replacements). Word does not change the text of the document, only the index entry codes.
5. Click **OK**.
6. Repeat the process changing the index entries for **attitudes** to **attitude** (there should be 3 replacements). Close the **Find and Replace** dialog box.
7. Turn off the **Show/Hide** feature by clicking the **Show/Hide** button .

8. Now, you need to update the index. To do that, click anywhere in the index, right-click, and select **Update Field**. You could also choose **References**, **Index**, **Update Index**. or tap **F9**. Now, only **attitude** appears in the index.

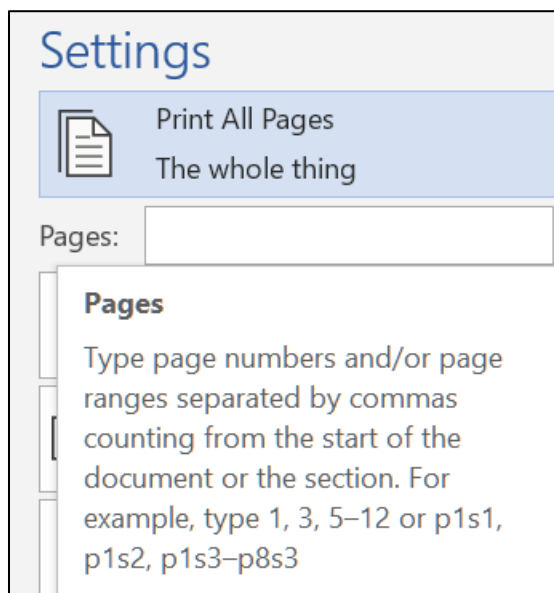


There are several other similar situations (e.g., **focus groups** & **Focus groups**, and **math placement** & **mathematics placement**) but, to save time, you can leave those alone.

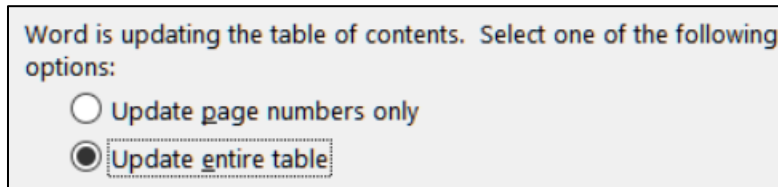
- o. Do **NOT** submit the entire document for grading. Instead, create pdf files for 4 specific pages by doing the following:

Mac: To make a pdf of any page, click anywhere in the page, tap **Command + p**, and click the **Current Page** button. In the lower left corner, click the arrow next to **PDF** and select **Save as PDF**. In the **Save As** box, type **HW10-5g HWID Large Document TOC Done** and click **Save**. Go to step **7** below.

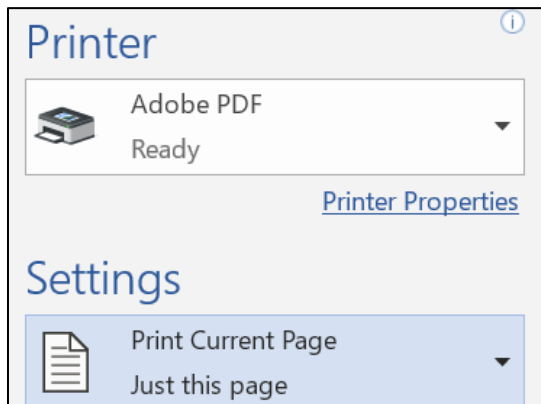
1. Tap **Ctrl + p** to open the **Print** dialog box.
2. Under **Printer**, select **Adobe PDF**.
3. In the **Settings** section, point to the **Pages** box and the **Screen Tip** will show you how to print selected pages or sections.



4. To make a pdf of section 3 only, which has the **Table of Contents**, type **s3** in the **Pages** box.
5. Click **Print**. If get the following message, click the **Update entire table** button.



6. Click **OK**. Save the pdf file as **HW10-5g HWID Large Document TOC Done**. Compare the preview with the key. Make needed corrections to the Word file and try again.
7. Move the insertion point to the page that contains the **quadratic formula**. This probably is formatted page 7 (real page 11) but, depending on your printer, it could be page 6 or page 8. Tapping **Ctrl + g**, typing **7**, and clicking **Go to** will send you to page 7.
8. Tap **Ctrl + p** to open the **Print** dialog box.
9. In the **Settings** section, click the arrow and select **Print Current Page**. This will print the page that currently contains the insertion point.



10. Be sure **Adobe PDF** is still showing under **Printer** and then click **Print**. Save the pdf file as **HW10-5h HWID Large Document Equations Done**

If the field codes are printing, see page **SG253** for information on how to turn them off.

11. Follow the same procedure to print the page that contains **Table 1**. Save the pdf file as **HW10-5i HWID Large Document Table 1 Done**
12. Follow the same procedure to print the page that contains the **Index**. Save the pdf file as **HW10-5j HWID Large Document Index Done**

p. Save the document and close it.

Step 4 Submit Now, submit the following. Use these names for the pdf files:

HW10-1 HWID Character Styles Done Page 1

HW10-2c HWID Paragraph Styles Done Page 1

HW10-3c HWID Census Done Page 1

HW10-3c HWID Census Done Page 2

HW10-3c HWID Census Done Page 100

HW10-4b HWID Track Changes Done Page 1

HW10-5 HWIDf Large Document Done TOC in section 3

HW10-5 HWIDf Large Document Done Equations on Page 7

HW10-5 HWIDf Large Document Done Table 1 on Page 14

HW10-5 HWIDf Large Document Done Index on Page 32

Create a pdf file of the output for each of the above, place them in a folder called **HW10 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW10 Word: Styles, Cross-References, TOC, Indexes**.


Step 5 Backup Now would be a good time to backup your files.

Sample Exam Questions for Word

These sample questions will help you prepare for the Word exam. You will **NOT** submit these activities for grading. The solutions start on page **SG311**. The output keys are in this Study Guide, starting on page **SG422**.

General Word Operations

- a. Open the **Word** document **Sample-a Exam Questions Original**, which is one of the files you downloaded at the start of the term.
- b. Save the file to your **Word Exam** folder using the name **Sample-b Exam Questions Done**
- c. Heading style
 1. Apply the **h1** style to the 9 headings labeled **Part 1**, **Part 2**, **Part 3**, **Part 3a**, **Part 3b**, **Part 3c**, **Part 4**, **Part 5**, and **Part 6** and also, at the end of the document, to the paragraph containing the word **Index**.
 2. Modify the **h1** style so that the font color is **purple**, the font size is 16, the paragraph is **center** aligned and there is a 3 pt. purple **border** around the paragraph.
- d. Part 1
 1. For the two paragraphs under **Part 1**, set the spacing before to **24** pt. and the spacing after to **12** pt.
 2. Insert the picture of Goldy (**HW07-2 Goldy Original**) anywhere in the first paragraph. Change the height to **0.5** inch and the width to **1** inch. Position the picture as shown below:

Part 1	
<p>This study analyzes the citation patterns in an algebra writing assignment completed by students in two sections of college algebra, one that used iPads throughout the semester and one that did not.</p> <p>prefer to use apps as an</p> <p>students in the non-iPad section,</p> <p>closely linked to course content. Open-ended assignments are a useful tool in iPad initiatives to gauge student interest in new learning technologies.</p>	 <p>Students in the iPad section did not information source more than even though available apps were</p>

- e. Part 2

TABS and **INDENTS** are **VERY** important. See page **SG210** for more details.

For the 3 lettered items under **Part 2**, **use the ruler** to do the following:

- Set the left indent to **1.5** inches.
- Set the first line indent to **1** inch.
- Set the right indent to **6** inches.

f. Part 3

1. Double space the paragraph that begins with **DOUBLE SPACE THIS PARAGRAPH**.
2. Set the **Part 3** heading and the four lines below it so that they always appear on the same page.
3. Under **Part 3a**, click anywhere in the phrase **SIDE HEAD ONE**. Create a new **paragraph** style called **s1** that makes the font **Arial Black**, **14** point, **blue**, and the paragraph **centered**.

Apply this style to **SIDE HEAD ONE**.

4. Find the phrase **SIDE HEAD TWO** and apply the **s1** paragraph style.
5. Create a new **character** style called **e1** that makes font **Arial**, **12** pt., **bold**, **italic**, **underlined**, and **red**.
6. Apply style **e1** to all occurrences of the word **Disk**. Words like **disk** and **Diskette** should not have the style applied.

Mac: In top menu, click **Edit**, point to **Find**, click **Advanced Find and Replace**, **Replace**. In lower left, click the arrow to show more options.

There should be 3 replacements.

Part 2

- a. This is the first lettered item. It contains the word Diskette, which should NOT have the style e1 applied to it.
- b. This is the second lettered item. It contains the word disk, which should NOT have the style e1 applied to it.
- c. This is the third lettered item. It contains the word **Disk**, which should have the style e1 applied to it.

A few universities have introduced iPads, which do not have a **Disk**, within a wide range of undergraduate classes. Pepperdine University, for example, conducted a three term experimental **Disk** comparison of iPad- and non-iPad-using classes use across discipline including calculus, business, nutrition, and religion.

7. Under **Part 3c**, at the end of the phrase **Vertex form of the quadratic function** construct this formula $f(x) = a(x - h_1)^2 + k_1$

Note that the default font of the equation is Cambria Math and not Arial like the rest of the document. To change the font, Word Help says to select the text, right-click, choose font, and select the one you want. That does not work! Leave the font as it is. You can change the font if you use the app MathType. However, changing the font size and applying bold do work in the usual ways.

g. Part 4

1. Select the phrase **Part 4** and insert a bookmark called **Part4**.
2. Break up the paragraph which begins **BREAKUP THIS PARAGRAPH**. Make the breaks just before **(a)**, just before **(b)**, and just before **(c)**.
3. Set the line and page breaks so that the side head **Part 4** and the four lines below it always appear on the same page.
4. For each lettered paragraph **(a)**, **(b)**, and **(c)**, set a **left** tab stop at **1** inch, a **center** tab stop at **3** inches, and a **decimal** tab stop at **5** inches. Make the decimal tab have a leader that is a **dotted** line.

Use the **Tab** key to make these paragraphs look as follows:

[Part 4]		
BREAK UP THIS PARAGRAPH		
(a)	SKINNY ¹	0.0025
(b)	REALLY PORTLY	82.1
(c)	SOMEWHERE IN BETWEEN	177

5. Insert a footnote mark to the right of the word **SKINNY**. The text of the footnote should be **By skinny, we mean really thin.**

h. Part 5

1. Convert the four paragraphs under **Part 5** to a table. Format the table as follows:
 - The outside border should be **solid red 6 pt**.
 - The inside lines should be **dotted blue 3 pt**.
2. Make the fill color **pink** of the cell that contains the word **Ms**.
3. Insert a new row between the rows for **Doug** and **Melissa**.
4. Delete the row for **Noah**.
5. Make the **height** of all the rows **0.3** inch and the **width** of all the columns **1** inch.
6. **Center** the table on the page.
7. Adjust the borders so that they look like the following:

Part 5		
Name	Title	Phone
Melissa	Ms.	555-0000
Doug	Boss	555-9999

i. Part 6

1. Use the **Multilevel List** feature on the 16 lines under **Part 6** to make them look like the following:

Part 6


- 1) Colors
 - a) Black
 - b) Red
 - i) Light
 - ii) Dark
 - c) Green
 - d) Blue
- 2) Sizes
 - a) Six
 - b) Eight
 - c) Ten
 - d) Twelve
 - i) Medium width
 - ii) Wide width
 - iii) Extra wide width
 - e) Fifteen

2. Insert a textbox next to the heading **Part 6** and type the following in the textbox: **More colors are available on our Web site.**
Make the text **orange Arial Black**. Remove the outline.
3. Insert an **arrow** pointing from the textbox to the word **Colors** in the outline.
Make the weight of the arrow **3 pt.** and the color **blue**.
4. Insert an orange four-pointed star with a blue outline under the textbox.
5. Arrange the items as shown below:

Part 6

- 1. Colors
 - a. Black
 - b. Red
 - i. Light
 - ii. Dark
 - c. Green
 - d. Blue
- 2. Sizes
 - a. Six
 - b. Eight
 - c. Ten
 - d. Twelve
 - i. Medium width
 - ii. Wide width
 - iii. Extra wide width
 - e. Fifteen

**More colors are available
on our Web site.**

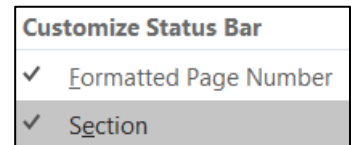


j. Table of Contents

Insert a **Table of Contents** by doing the following:

1. Set to **2** the outline level of the paragraph **BREAKUP THIS PARAGRAPH** so it will appear in the **Table of Contents**.
2. Go to the top of the document, click in the blank line below **Table of Contents**, and insert a **Table of Contents**. Construct the table using the **first two heading levels only** in the **Distinctive** format, show page numbers, **right** align the page numbers, and make them have a **dot leader**.
3. Click to the left of the heading **Part 1** and insert a next page section break so the heading **Part 1** appears on the next page and in the new section 2.

You might want to click the **Status Bar** (very bottom of window) and put a check next to **Section** so you can easily tell which section you are in.



k. Cross Reference

Just after the second paragraph of the document, find the phrase **Part 4 is on page XX of this document**. Replace the **XX** with the automatic page number cross-reference to the **Part4** bookmark. Make the page number **red bold**.

l. Headers

Set up the **headers** for section 2 (it starts at **Part 1**) as follows (be sure to deselect **Link to Previous**):

1. Set the layout for section 2 so that it has a different **First Page Header**, and different **Even** and **Odd page headers**.
2. **First Page Header** should contain the **filename** on the left, the word **Page**, a space, and the automatic page number in the middle, and the date the file was last **saved** on the right in the format **Day, Month Date, Year**.
3. **Even Page Header** contains the word **Page**, a space, and the automatic page number on the left and the word **Sec**, a space, and the automatic section number on the right.
4. **Odd Page Header** contains your **HWID** on the left and the word **Page**, a space, and the automatic page number on the right.

m. Index

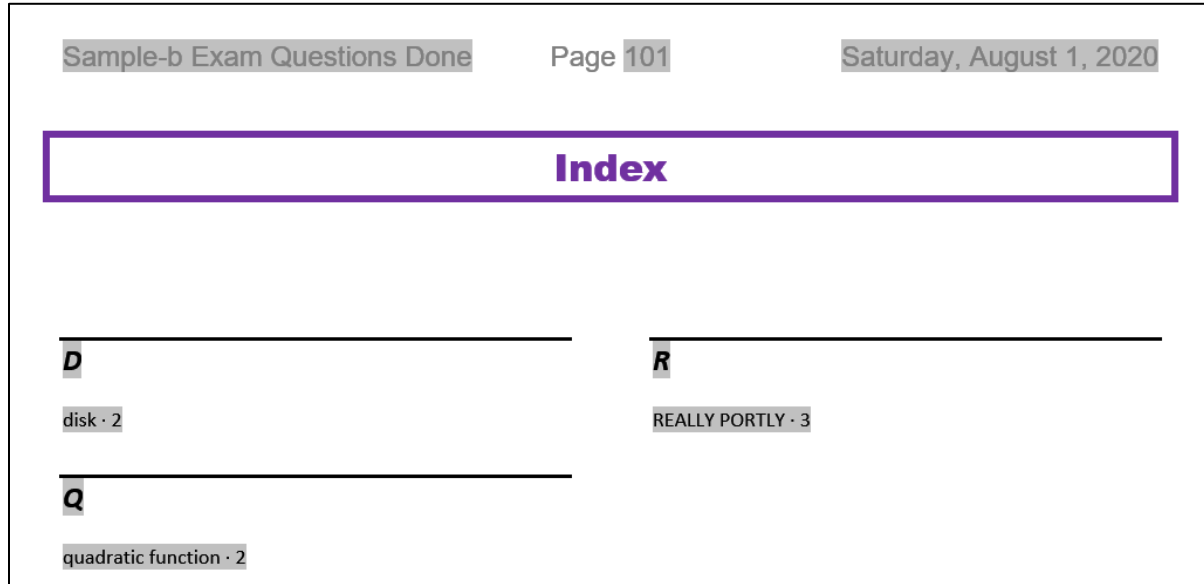
Set up and insert an **Index** by doing the following:

1. Mark the following as index entries: **disk**, **quadratic function**, and **REALLY PORTLY**.
2. Move to the end of the document. Insert a **next page section break** so the word **Index** is on the next page.

3. Move to the end of the document and tap **Enter**. Be sure to turn off the **Show/Hide** codes so the page numbers will be correct.

Insert an **index**. Use the **Modern** format, **two** columns, **right** align page numbers, and a **dot** leader.

4. Change the automatic page number for the **Index** page to start at **101**.



5. For the page that contains the word **Index** and the index itself, make the orientation **Landscape**. All other pages should remain in **Portrait** mode.
6. Place a 3 pt. **red** border around the page that contains the **Index**. No other pages should have that border.



- n. Select the entire document and tap **F9** to update all the fields. Then, tap **Ctrl + p** and compare the preview with the key. Make needed corrections. Save **Sample-b Exam Questions Done** and close it. Note that Word automatically put a blank page right after the Table of Contents and just before the Index so while there are 5 pages with text on them there are 7 “real” pages.

Graphics and Other Stuff

- a. Start Word, open a new blank document, and save the file in your **Word Exam** folder as **Sample-c Graphics and Other Stuff Done**

- b. Type the following. Tap **Enter** where you see the paragraph marks ¶:

Practice·Questions·for·Word·Exam.¶

This·file·provides·practice·with¶

graphics·and·columns.¶

- c. Change the **Normal** style so the font is **12 pt. Arial Bold** and the paragraph has **8 pt. spacing** after.
- d. Sections and Columns:
1. Insert the text from the file **w02B_Cover_Letter_Text**, which is one of the files you downloaded at the start of the term.
 2. Correct the spelling and grammar.
 3. Put the text from **I can be accessible...** through **In addition, I have...** in three column format so it looks like the following:

With a permanent position as my ultimate goal, I hope to use the Florida Port Community College Career Center to secure a temporary job.

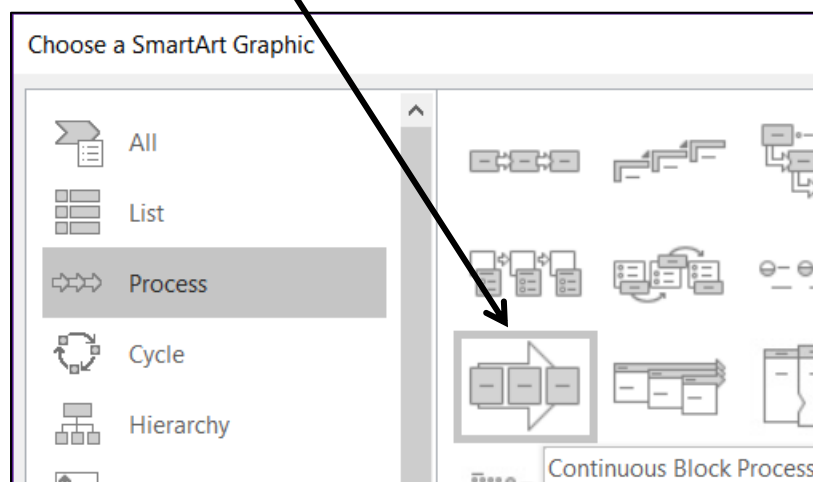
I can be accessible for a flexible number of days or hours and am willing to work in a diversity of businesses or organizations.

As my resume illustrates I have exceptional computer skills. I am a honor student at FPCC and have outstanding references.

In addition, I have part-time work experience as a software tester, where I perform the following computer activities.

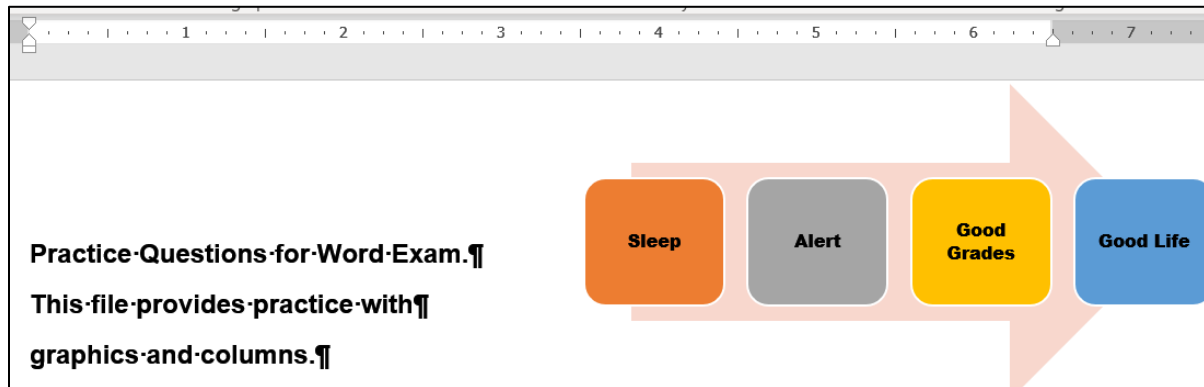
I am available for the purpose of an interview at your convenience. You can contact me by email at jgarcia@alcona.net or by telephone at (727) 555-0347.

1. Move to the top of the document and insert a **SmartArt** object **Process, Continuous Block Process**.



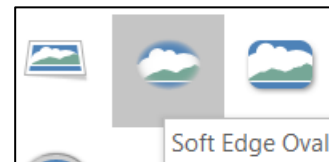
2. Enter the following phrases, one in each textbox: **Sleep, Alert, Good Grades, Happy Student, Good Life.**

3. Make the object **4** inches wide and **2** inches high.
4. Change the colors to **Colorful**.
5. Change the font to **8 pt. Arial Black** and make the color black.
6. Move the object to the upper right corner of the page so it just touches the top and right side.



f. Picture

1. Move to the top of the document and insert the picture **w01A_Bird**, which is one of the files you downloaded at the start of the term.
2. Change both the height AND width to 2 inches so the picture is square.
3. Apply the **Soft Edge Oval** style.
4. Rotate the picture 45 degrees clockwise.
5. Move the picture to the lower right corner of the document.



- g. Move to the end of the document, just after the phone number. Insert as a table the data in **B2:F10** from the **Data** tab of the Excel file **Sample-d Education and Earnings Original**.

h. Screenshot

1. Insert a screenshot of your **Word Exam** folder.
2. Make both the height and width 1.5 inches.
3. Place a black border around it
4. Move the screenshot to the bottom center of the document.

- i. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections. Save **Sample-c Graphics and Other Stuff Done** and close it.

Sorting

- a. Open the file **Sample-e Table Sort DATA Original**, which is one of the files you downloaded at the start of the term. You will use this file in this section on sorting and on the next two sections on **Mail Merge** and **Mailing Labels** (hence the word **DATA** in the file name).

- b. Save the document to your **Word Exam** folder using the name **Sample-f Table Sort DATA Done**
- c. Convert the text into a table.
- d. **AutoFit** the columns.
- e. Make the background of the document **White Marble**.

Mac: I don't think you can do this on a **Mac**.

- f. Make the table style **Grid Table 5 Dark – Accent 6**.



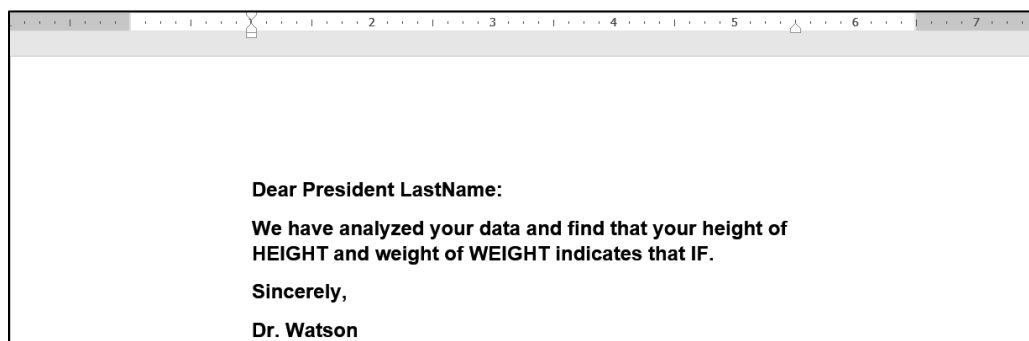
- g. Sort the data in the table by **State** in **Descending** order (**Z to A**) and, within **State**, by **LastName** in **Ascending** order (**A to Z**).
- h. Center the table horizontally on the page.


Num	BirthDate	LastName	FirstName	State	Weight	Height
21	Oct 5, 1829	Arthur	Chester	VT	231	66
30	Jul 4, 1872	Coolidge	Calvin	VT	110	71
9	Feb 9, 1773	Harrison	William	VA	191	

- i. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections. Save **Sample-f Table Sort DATA Done** and close it.

Mail Merge

- a. Create a Mail Merge **MAIN** document by doing the following:
 1. Start Word, open a new blank document, and save the file in your **Word Exam** folder as **Sample-g Merge MAIN Done**
 2. Change the **Normal** style of the document so that the font is **12 pt. Arial bold** and the left and right indents are set to **1 inch**.
 3. Type the following letter:



4. Convert the document to a mail merge **letters** document.
 5. Select **Sample-f Table Sort DATA Done** as the data source.
 6. Set the mail merge to skip data where the **Height** field is empty.
 7. In place of the word **LastName** insert the merge field code **LastName**.
 8. In place of the word **HEIGHT** insert the merge field code **Height**.
 9. In place of the word **WEIGHT** insert the merge field code **Weight**.
 10. In place of the word **IF** insert fields so that if **Weight** is over **200** Word will display **you need to LOSE a few pounds**. If the weight is between 200 and 110, Word should display **you are in good shape**. If the weight is 110 or less, Word should display **you need to GAIN a few pounds**.
- b. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections. Save **Sample-g Merge MAIN Done** but do not close it.
- c. Merge to a new document. It will contain all the individual letters, except for **Harrison** and **Jefferson** because their **Heights** are missing. If you show the paragraph marks (click ) and, on the **View** tab in the **Views** group, click the **Web Layout** button, you should see the following:

```

Dear-President-Arthur:¶
We-have-analyzed-your-data-and-find-that-your-height-of-66-and-weight-of-231-indicates-that-you-need-to-LOSE-a-few-
poundsyou-are-in-good-shape.¶
Sincerely,¶
Dr.-Watson¶.....Section Break (Next Page).....
Dear-President-Coolidge:¶
We-have-analyzed-your-data-and-find-that-your-height-of-71-and-weight-of-110-indicates-that-you-need-to-GAIN-a-few-pounds.¶
Sincerely,¶
Dr.-Watson¶.....Section Break (Next Page).....
Dear-President-Madison:¶

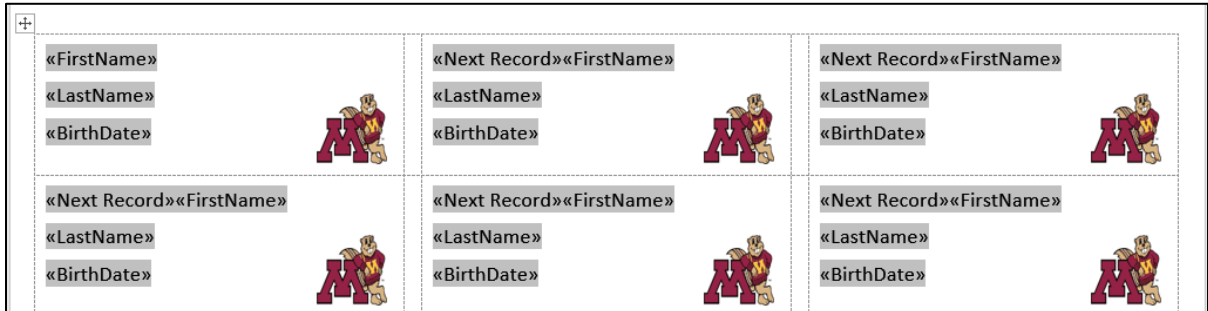
```

- d. Save the new document as **Sample-h Merge PRINTED Done**
- e. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections. Save **Sample-h Merge PRINTED Done** and close it.

Mailing Labels

- a. Create a set of mailing labels by doing the following:
1. Start Word, open a new blank document, and save the file in your **Word Exam** folder as **Sample-i Merge Labels MAIN Done**
 2. Create mailing labels using the **Avery US Letter 5160 Address Labels** product number.
 3. Use the file **Sample-f Table Sort DATA Done** as the data source.
 4. Include on each label on separate lines **FirstName**, **LastName**, and **BirthDate** of each person.

5. Insert the picture **HW07-2 Goldy Original**, which is one of the files you downloaded at the start of the term.
6. Make the picture height and width 0.5 inch and move it to the lower right corner of each label.
7. Update all the labels. The document should look like the following:



- b. Save **Sample-i Merge Labels MAIN Done**. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections. Save the document but do not close it.
- c. Merge the files to a new document. Save the document as **Sample-j Merge Labels PRINTED Done**
- d. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections. Save the document and close it.

How to Solve the Sample Exam Questions for Word

General Word Operations - Solutions

c. Heading style

- c1. Click in the heading **Part 1**. On the **Home** tab, in the **Styles** group, click the launch dialog button (lower right corner of the group).



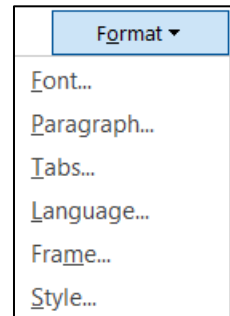
Click the style labeled **h1**. Repeat for **Part 2** through **Part 6** headings and the **Index**.

Another way to do this is to tap **Ctrl + h** to open the **Find/Replace** box. In the **Find what** box type **Part**

Click **More >>** and check **Match case** and **Find whole words only**.

Click inside the **Replace with** box, click the **Format** arrow, and select **Style**. Scroll to the style labeled **h1** and click it.

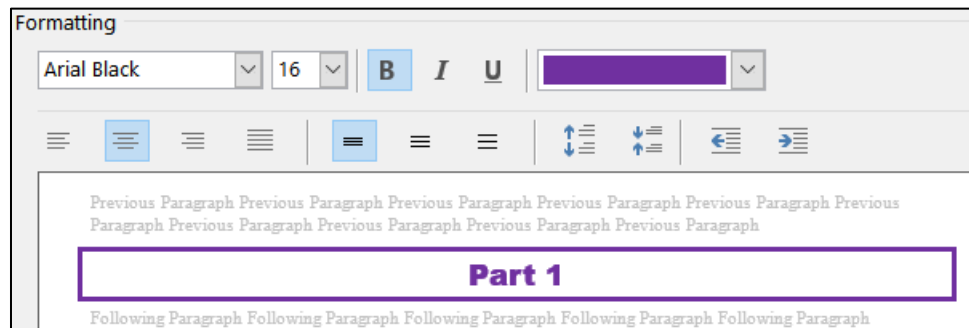
Click the **Find Next** button to find **Part 1**. Click **Replace**. Repeat this for all the other headings and Index. There should be 10 replacements. This is very useful if you have a large document. You could also click **Replace All** if you are **SURE** there are no other instances of **Part** in the document (NOT true for this document!).



- c2.** On the **Home** tab, in the **Styles** group, click the launch dialog button. Right-click the style labeled **h1** and select **Modify**.

Mac: Click **Styles**, point to the **h1** style, right-click, and select **Modify Style**.

Change the font color to purple, the font size to 16, and click the **Align Center** icon. Click **Format** arrow, select **Border**, and make the border 3 pt. Click **Box** and then click **OK**.



Click **OK** again.

d. Part 1

- d1.** Select the two paragraphs, right-click, and select **Paragraph**. Under **Spacing Before** (above), set the size to **24 pt**. Under **Spacing After** (below), set the size to **12 pt**. Click **OK**.
- d2.** On the **Insert** tab, in the **Illustrations** group, click **Pictures**. Navigate to **HW07-2 Goldy Original** and click **Insert**.

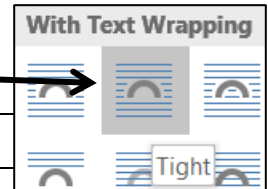
Click the picture to select it. On the **Picture Format** tab, in the **Size** group, click the launch dialog button.

In the **Scale** group uncheck **Lock aspect ratio**. In the **Height** group enter **0.5"**. In the **Width** group enter **1"**.

Mac: Remove the check to the right of the height and width values.



On the **Picture Format** tab, in the **Arrange** group, click **Wrap Text** and select **Tight**.




Mac: Right-click the picture, point to **Wrap Text**, select **Tight**.

Use your mouse to position the picture as shown.

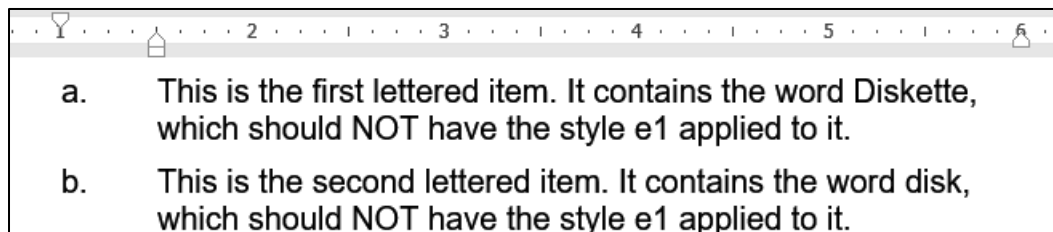
e. Part 2

Select the three paragraphs.

On the ruler, drag the **left** indent marker  to 1.5 inches.

On the ruler, drag the **first line** indent marker  to 1 inch.

On the ruler, drag the **right** paragraph indent marker  to 6 inches.



f. Part 3

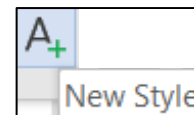
- f1.** Select the paragraph, right-click, and select **Paragraph**. In the **Line spacing** area, click the arrow and select **Double**.
- f2.** Select the 4 lines starting at **Part 3**. Right-click, select **Paragraph**, click the **Line and Page Breaks** tab, and check **Keep with next** and **Keep lines together**. It looks like nothing happened because right now they are all on the same page anyway.
- f3.** On the **Home** tab, in the **Styles** group, click the launch dialog button.

Mac: Click **Styles Pane**.



At the bottom, click the **New Style** button.

Set the parameters as shown below:



- f6. Click at the top of the document. Tap **Ctrl + h** to open **Find/Replace**.

Mac: In top menu, click **Edit**, point to **Find**, click **Advanced Find and Replace**, **Replace**. In lower left, click the arrow to show more options.

In the **Find what** box type **Disk**.

Check the **Match case** and **Find whole words** only boxes.

Click inside the **Replace with** box, delete any text, click the **Format** arrow, and select **Style**. Scroll down to **e1**, select it, and tap **OK**.

Click **Replace All**. There should be 3 replacements. Click **OK** and close the **Find and Replace** dialog box.

- f7. Click at the end of the phrase and, on the **Insert** tab, in the **Symbols** group, click the **Equation** arrow, and select **Insert New Equation**.

This opens the **Equation** tab and inserts a box where you can type the equation.

Vertex form of the quadratic function:

Type **f(x) = a**

On the **Equation** tab, in the **Structures** group, click the **Script** arrow and select superscript to show $f(x) = a^{\square}$

Click inside the large box. On the **Equation Tools** tab, in the **Structures** group, click the **Bracket** arrow and select parentheses to show $f(x) = a(\square)$

Click inside the large box and type **x -** to show $f(x) = a(x - \square)$

On the **Equation** tab, in the **Structures** group, click the **Script** arrow and select subscript to show $f(x) = a(x - \square)$

Click inside the large box and type **h**.

Click inside the small box and type **1** to show $f(x) = a(x - h_1)$

Click inside the exponent box and type **2** to show $f(x) = a(x - h_1)^2$

Tap the **Right Arrow** key to move out of the exponent box and type **+** to show $f(x) = a(x - h_1)^2 +$

On the **Equation** tab, in the **Structures** group, click the **Script**

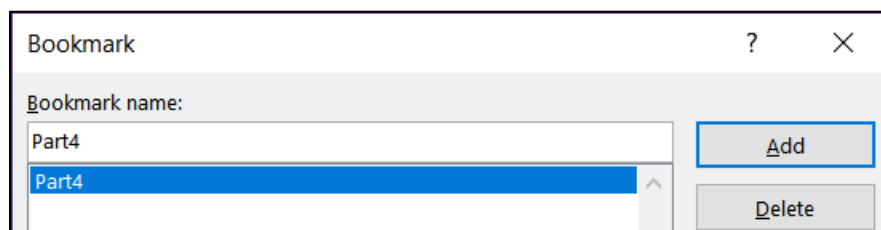
arrow and select subscript to show $f(x) = a(x - h_1)^2 + \square_1$

In the large box type **k**; in the small box type **1** to show $f(x) = a(x - h_1)^2 + k_1$

g. Part 4

- g1.** Select the phrase **Part 4** and, on the **Insert** tab, in the **Links** group, click **Bookmark**.

In the **Bookmark name** box type **Part4**.



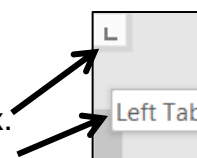
You cannot see the bookmark code unless you click the **File** tab, click **Options**, click **Advanced**, scroll down to **Show Document Content**, and check **Show** bookmarks. The brackets indicate the bookmark.



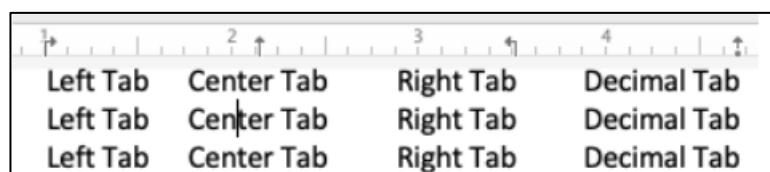
Mac: In top menu, click **Word**, select **Preferences**, click **View**, check **Bookmarks**.

- g2.** Click to the left of the parenthesis in **(a)** and tap **Enter**.
Do the same for **(b)**, and **(c)**.
- g3.** Select the four lines from **Part 4** through **(b)**, right-click, select **Paragraph**, click the **Line and Page Breaks** tab, and check **Keep with next**. You do not need to click the line with **(c)** because that does not have to be on the same page at the line with **Part 5**.
- g4.** Select the three paragraphs.


On the left side of the ruler, point to the **Tab Type** box.
A screen tip will tell you what kind of tab stop is active.




Mac: Tab stops look a bit different on a **Mac**.



Be sure the tab type is **Left**  and click the ruler at the **1-inch** mark.

Click the **Tab Type** box once to make the type a **center** tab stop 
and then click the ruler at the **3-inch** mark.

Click the **Tab Type** box twice to make the type a decimal tab stop 
and then click the ruler at the **5-inch** mark.

Double-click the decimal tab stop to open the **Tab** dialog box.

Click the **5"** stop. Under **Leader**, click the bullet to the left of **2...**

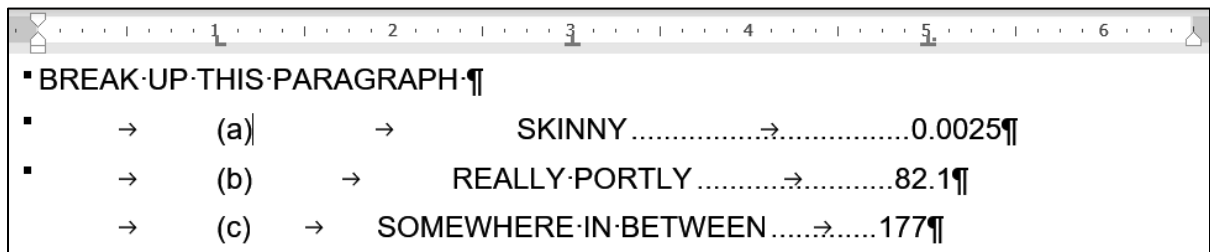
Click **Set** and then **OK**.

Now, set the tab stops by doing the following:

- Click to the left of **(a)** and tap the **Tab** key.
- Click to the left of **SKINNY** and tap the **Tab** key.
- Click to the left of **0.0025** and tap the Tab key.

Repeat this for **(b)** and **(c)**.

To see where the **Tab** key was tapped, click the **Show/Hide** button 



- g5.** Click to the right of the **Y** in **SKINNY** and, on the **References** tab, in the **Footnotes** group, click **Insert Footnote**. Then, type the text.

h. Part 5

- h1.** Select the four paragraphs. On the **Insert** tab, in the **Tables** group, click the **Table** arrow, and select **Convert Text to Table**. Click **OK**.

Select the table and, on the **Home** tab, in the **Paragraph** group, click the **Borders** arrow and select **Borders and Shading**.

Select **red** for the color.

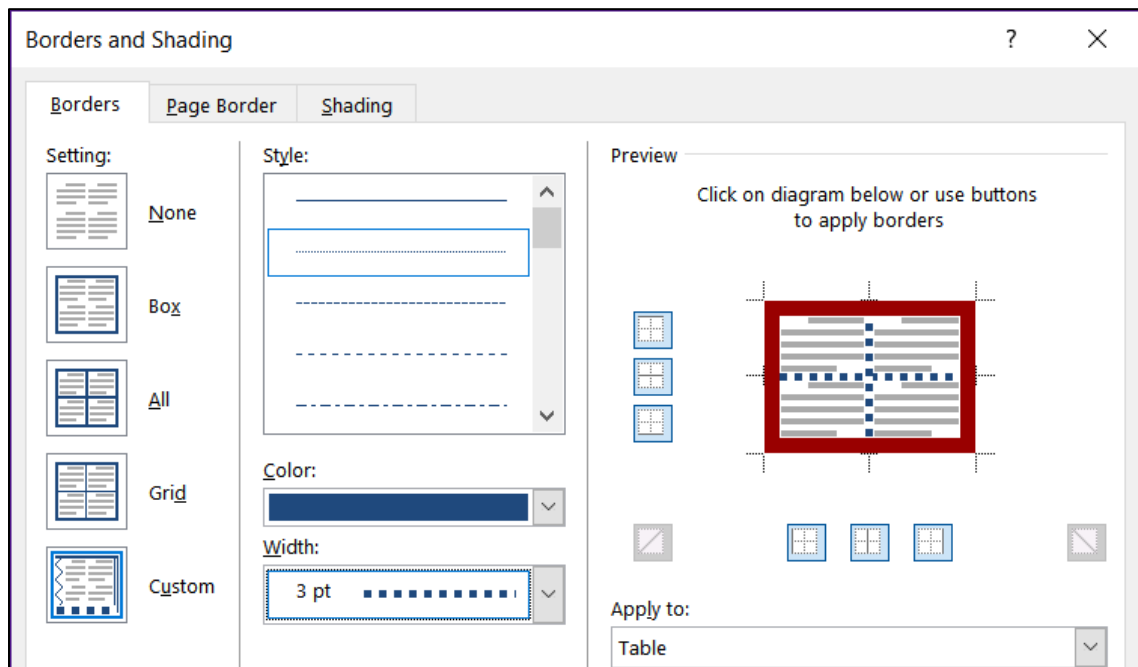
Select **6 pt.** for the **Width**.

Click **Box**. That will apply the border to the outside of the table.

Click **Custom** so you can change each border individually.

Select dotted for the **Style**, blue for the **Color**, and **3** for the **Weight**.

Click the inside borders to make them blue and dotted.



Click **OK**.

h2. Select the cell that contains the word **Ms**.

On the **Home** tab, in the **Paragraph** group, click the **Borders** arrow and select **Borders and Shading**.

Click the **Shading** tab. Be sure the **Apply to** box shows **Cell** so only the selected cell will be changed.

From the **Fill** menu, select **pink** and then click **OK**.

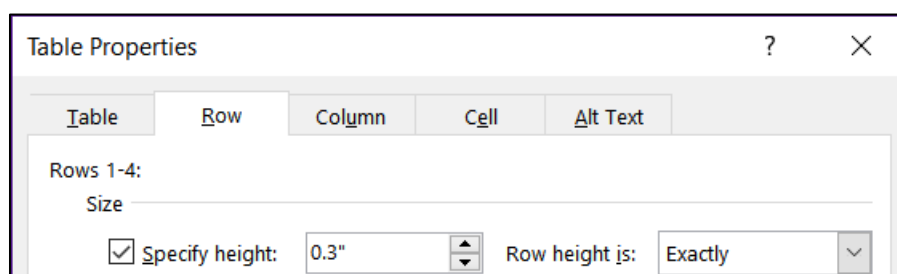
Or, you could select the cell, click the paint bucket, and select the color.

h3. Select the bottom row, right-click, click **Insert**, and select **Insert Rows Above**.

h4. Select the row that contains **Noah**, right-click, and click **Delete Rows**.

h5. Select the table, right-click, and select **Table Properties**.

Click the **Row** tab, click the check box next to **Specify height**, type **0.3"** in the box, and select **Exactly** from the **Row height is** drop-down menu.



Follow a similar procedure to set the **width** of all the columns to **1** inch.

h6. Select the table and, on the **Home** tab, in the **Paragraph** group, click the **Center Align** button.

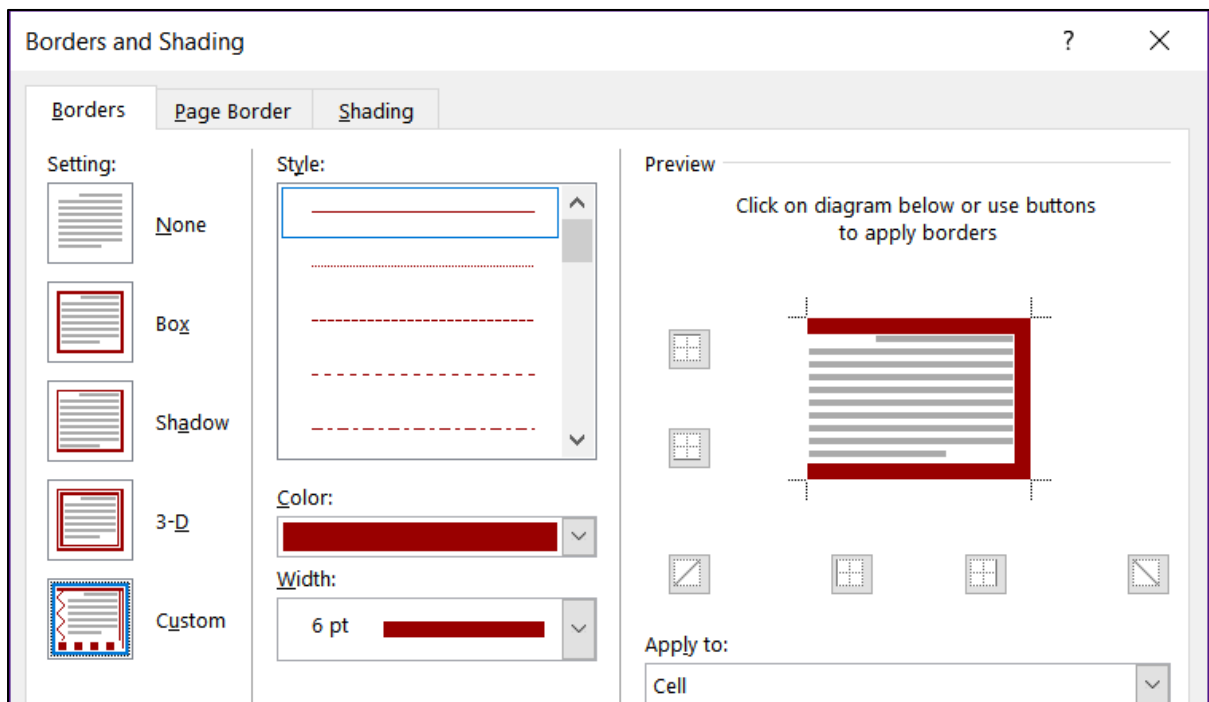
h7. Adjusting the borders will take several steps.

Select the blank cell under Melissa and, on the **Home** tab, in the **Paragraph** group, click the **Borders** arrow, and select **Borders and Shading**.

Be sure the **Apply to** box says **Cell**.

Make the **Style** a solid line, the color **red**, and the width **6 pt**.

Click the **Custom** box so you can independently change each border and click the edges of the box, so it looks as indicated.



Repeat the procedure for the blank box under **555-0000**.

i. Part 6

i1. Select the 16 lines and, on the **Home** tab, in the **Paragraph** group, click the **Multilevel** list arrow, and select the list with Arabic numerals, letters, and Roman numerals.

This puts all the lines at the same level.

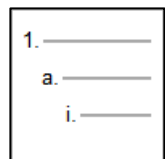
Select the lines **Black** through **Blue** and, on the **Home** tab, in the **Paragraph** group, click the **Increase Indent** button.



This will make those line subordinate to the word **Colors**.

Select the lines that contain **Light** and **Dark** and click the **Increase Indent** button again. This will make those lines subordinate to the word **Red**.

Repeat the process for the **Sizes**.



- i2. On the **Insert** tab, in the **Text** group, click the **Text Box** arrow and select **Draw Text box**. Drag the cross to form the box. Inside the box, type **More colors are available on our Web site**. Select the text and change the color and font type.

Click the edge of the textbox and on the **Design Format** tab, in the **Shape Styles** group, select **Shape Outline** and click **No Outline**.

- i3. On the **Insert** tab, in the **Illustrations** group, click the **Shapes** arrow and select **Arrow**. Drag from the textbox to the word **Colors**.

With the arrow still selected, on the **Design Format** tab, in the **Shape Styles** group, select **Shape Outline** and click the **blue color** box and make the **Weight 3 pt**.

- i4. On the **Insert** tab, in the **Illustrations** group, click the **Shapes** arrow and, under **Stars and Banners**, click the four-pointed star. Drag to form the star. With the star still selected, on the **Design Format** tab, in the **Shape Styles** group, select **Shape Fill** and click **orange**.

- i5. Use your mouse to position the textbox and star.

j. Table of Contents

- j1. Click anywhere in the phrase **BREAKUP THIS PARAGRAPH**, right-click, select **Paragraph** and, on the **Indents and Spacing** tab under **General**, select **Level 2** from the **Outline level** drop-down menu.
- j2. On the **References** tab, in the **Table of Contents** group, click the **Table of Contents** arrow, and select **Custom Table of Contents**. Set the parameters as follows:

Table of Contents

Index Table of Contents Table of Figures Table of Figures

Print Preview

Heading 1 1

Heading 2 3

☒ Show page numbers

☒ Right align page numbers

Tab leader:

General

Formats: Distinctive

Show levels: 2

Click **OK**.

- j3. Click just to the left of the heading **Part 1** and, on the **Layout** tab, in the **Page Setup** group, click the **Breaks** arrow and, under **Section Breaks**, click **Next Page**.

k. Cross Reference

Select **XX** and, on the **Insert** tab, in the **Links** group, click **Cross-reference**.

Set the parameters as follows and then click **Insert** and then **Close**.

Reference type: **Bookmark** Insert reference to: **Page number**

☒ Insert as hyperlink ☐ Include above/below

☐ Separate numbers with

For which bookmark: **Part4**

l. Headers

1. Be sure the insertion point is in section 2.
On the **Layout** tab, in the **Page Setup** group, click the launch dialog button.

Mac: From the menu, click **Format** and select **Document**.

Click the **Layout** tab.

Page Setup

Margins Paper Layout

Section start: **New page**

☒ Suppress endnotes

Headers and footers

☒ Different odd and even

☒ Different first page

In the **Headers and footers** group, put checks next to **Different odd and even** and **Different first page**. Click **OK**.

2. On the **Insert** tab, in the **Header & Footer** group, click the **Header** arrow and select **Blank**. Or, simply double-click in the **Header** area.

On the **Header & Footer** tab, in the **Navigation** group, click **Link to Previous** to deselect it. This will turn off **Same as Previous** in the Header.

On the **Insert** tab, in the **Text** group, click the **Quick Parts** arrow and select **Field**.

Mac: From the menu, click **Insert** and then select **Field**.

Under **Field** names, select **FileName**, and click **OK**.

Tap the **Tab** key to move to the center tab stop and type **Page** and a space.

Click the **Quick Parts** arrow and select **Field**.

Under **Field** names, select **Page**, and click **OK**.

Tap the **Tab** key to move to the right tab stop.

Click the **Quick Parts** arrow and select **Field**.

Under **Field** names, select **SaveDate** and, under **Field properties**, select the format **dddd, MMMM d, yyyy**.

Mac: Click **Options**, select the format, and click **Add to Field**.

Click **OK**.

l3. Follow a similar procedure for the **Even Page Header**.

l4. Follow a similar procedure for the **Odd Page Header**.

m. Index

m1. Find and select the word **disk**. It is under **Part 2**, subpart **b**.

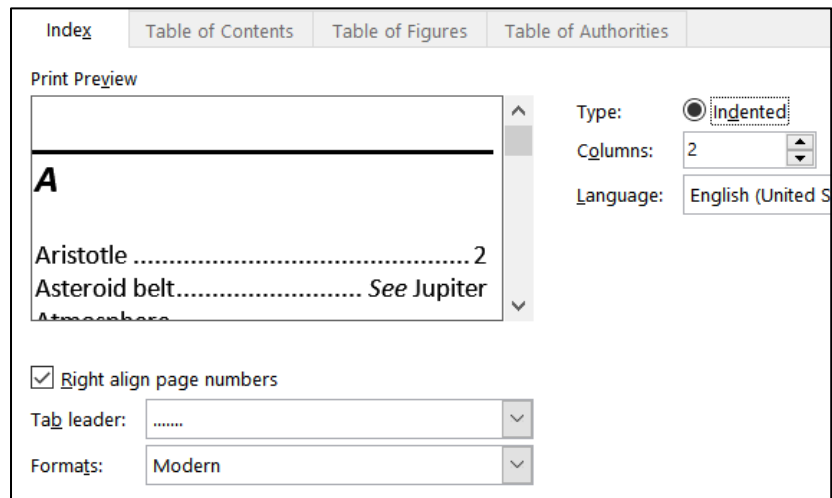
On the **References** tab, in the **Index** group, click **Mark Entry**.

At the bottom of the **Mark Index Entry** dialog box, click **Mark**. This will insert an index entry.

Repeat the procedure for **quadratic function**, and **REALLY PORTLY**.

m2. Move to the end of the document and click to the left of the word **Index**. On the **Layout** tab, in the **Page Setup** group, click the **Breaks** arrow and select **next page section break**.

- m3.** Move to the end of the document. On the **References** tab, in the **Index** group, click **Insert index**. Make the dialog box look like the following:



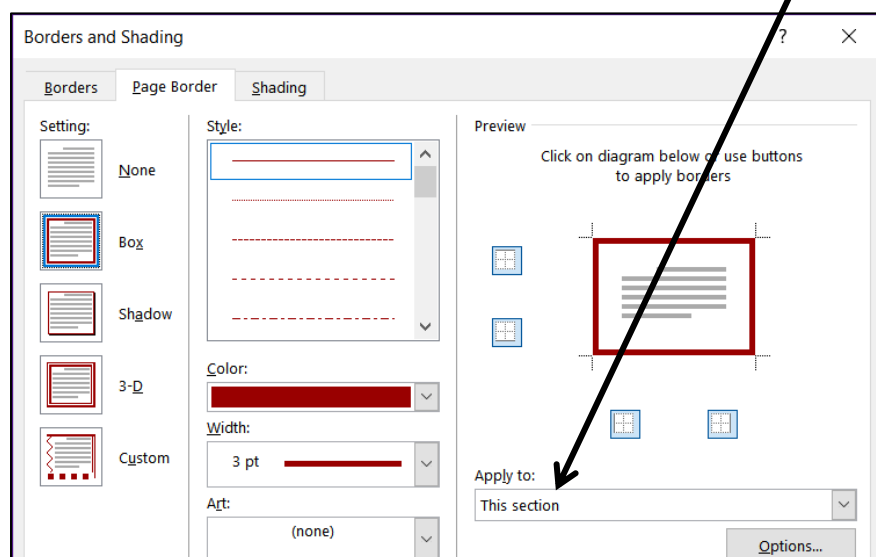
- m4.** While still at the end of the document, on the **Insert** tab, in the **Header & Footer** group, click the **Page Number** arrow and select **Format Page Numbers**.

At the bottom of the dialog box, click **Start at** and type **101**. Click **OK**.

- m5.** Select the line with the word **Index** and the index itself. On the **Layout** tab, in the **Page Setup** group, click the launch dialog button. On the **Margins** tab, in the **Orientation** group, click **Landscape**. Be sure the **Apply to** box shows **Selected sections** so only the Index page will be in landscape.

Mac: There is no **Apply to** box. If you have the text selected only that section will be changed to Landscape.

- m6.** With the paragraphs still selected, on the **Design** tab, in the **Page Background** group, click the **Page Borders** arrow, and click the **Page Border** tab. Set it up to look like the following (be sure **Apply to** shows **This section**).



Click **OK**.

Graphics and Other Stuff – Solutions

c. Change Style

On the **Home** tab, in the **Styles** group, click the launch dialog button. Right-click **Normal** in the list and click **Modify**. Change the font to 12 pt. Arial Bold.

Mac: Select the paragraphs and change the font. Then, choose **Format Paragraph** and set the **Spacing After** to **8 pt**. Finally, click **Styles**, right-click on **Normal**, and click **Update Normal to Match Selection**.

d. Sections and Columns

- d1.** On the **Insert** tab, in the **Text** group, click the **Object** arrow and select **Text from File**. Navigate to your **Word Exam** folder and double-click **w02B_Cover_Letter_Text**.
- d2.** Right-click those words that are underlined in red and select the correct spelling. Ignore **FPCC**. Fix the grammar of phrases underlined in blue.
- d3.** Select the text. On the **Layout** tab, in the **Page Setup** group, click the **Columns** arrow and select **Three**. This will put a continuous section break before and after the selected text and display the text in three columns. If the columns do not break as shown, place the insertion point where you want a new column to start and, on the **Layout** tab, in the **Page Setup** group, click the **Breaks** arrow, and choose **Column**.

With a permanent position as my ultimate goal, I hope to use the Florida Port Community College Career Center to secure a temporary job. Section Break (Continuous)

I can be accessible for a flexible number of days or hours and am willing to work in a diversity of businesses or organizations. ¶

As my resume illustrates, I have exceptional computer skills. I am a honor student at FPCC and have outstanding references. Column Break

In addition, I have part-time work experience as a software tester, where I perform the following computer activities:

Column Break

e. SmartArt

- e1.** On the **Insert** tab, in the **Illustrations** group, click **SmartArt**. Click **Process** and then **Continuous Block Process**. Click **OK**.
- e2.** Click the left-pointing arrow.
Type the phrase in each box.
To add a box, tap **Enter**.



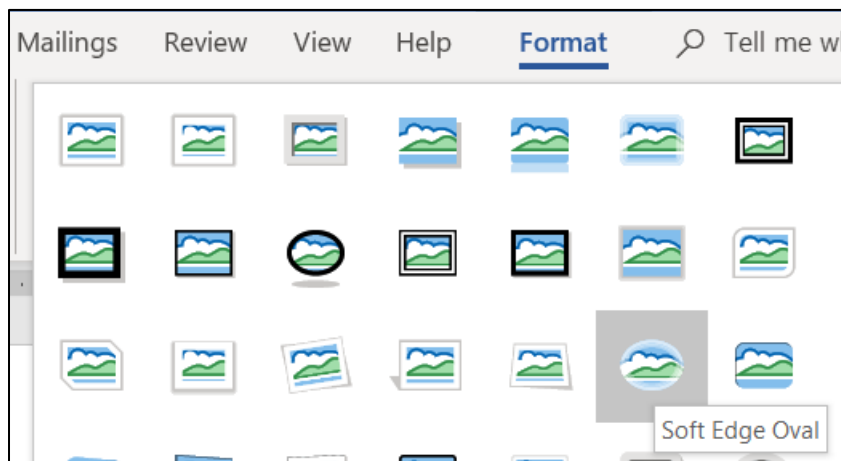
- e3. On the **SmartArt Format** tab, in the **Size** group, enter 4 inches and 2 inches.
- e4. On the **SmartArt Design** tab, click the **Change Colors** arrow and select a colorful icon.
- e5. Click an edge of the object and, on the **Home** tab, change the font, color, and size.
- e6. Click the **Layout Options** button and select **In Front of Text**.

Mac: Click the edge of the object, right-click, click **Warp Text**, and then click **In front of Text**.

Then, drag the object into position.

f. Picture

- f1. Move to the top and, on the **Insert** tab, in the **Illustrations** group, click **Pictures**. Navigate to your **Word Exam** folder and double-click the picture of the bird.
- f2. With the picture selected, on the **Picture Format** tab, in the **Size** group, click the launch dialog button. Remove the check next to **Lock Aspect Ratio** and type 2 in the height and weight boxes.
- f3. With the picture selected, on the **Picture Format** tab, in the **Picture Styles** group, click the **More** arrow and select **Soft Edge Oval**.



- f4. With the picture selected, on the **Picture Format** tab, in the **Arrange** group, click the **Rotate** arrow and select **More Rotation Options**. In the **Rotate** group, enter **45**.
- f5. With the picture selected, click the **Layout Options** button and select **In Front of Text**. Then, drag the object into position.

- g. Open the **Excel** file, select **B2:F10** on the **Data** tab, and copy.


Switch back to your Word document, move to the line just after the phone number, and paste. If the bird disappears, undo the Excel paste and move the bird up. Paste again

Drag the bird to the proper position.

h. Screenshot

- h1. On the **Insert** tab, in the **Illustrations** group, click the **Screenshot** arrow and click on the image of your **Word Exam** folder.

Mac: Minimize your document so the **Word Exam** folder shows. Tap **Shift + Ctrl + Command + 4** and drag across the folder. Right-click the thumbnail in the lower right of the screen and select **Save to Clipboard**. Tap **Cmd + v** to paste the picture.

- h2. With the screenshot selected, on the **Picture Format** tab, in the **Size** group, in the lower right corner, click the dialog box launcher . Uncheck **Lock aspect ratio** and type **1.5** in the **Height and Width** boxes. Click **OK**.
- h3. With the screenshot selected, on the **Picture Format** tab, in the **Picture Styles** group, click the **Picture Border** arrow and select black.
- h4. With the screenshot selected, click the **Layout Options** button and select **In Front of Text**. Then, drag the object into position.

Sorting – Solutions

- c. Select the paragraphs and, on the **Insert** tab, in the **Tables** group, click the **Table** arrow and select **Convert Text to Table**. Click **OK**.
- d. Select the table and, on the **Table Layout** tab, in the **Cell Size** group, click the **AutoFit** arrow and select **AutoFit Contents**.
- e. On the **Design** tab, in the **Page Background** group, click the **Page Color** arrow and select **Fill Effects**. Click the **Texture** tab and click **White Marble**.

Mac: I could not figure out how to do this on a **Mac**!

- f. On the **Table Design** tab, in the **Table Styles** group, click the **More** arrow and select **Grid Table 5 Dark – Accent 6**.

- g. Select the table. On the **Home** tab, in the **Paragraph** group, click sort



Be sure **My list has Header row** is checked and then set the parameters as follows:

Sort by			
State	Type: Text	<input type="radio"/> Ascending	<input checked="" type="radio"/> Descending
	Using: Paragraphs		
Then by			
LastName	Type: Text	<input checked="" type="radio"/> Ascending	<input type="radio"/> Descending
	Using: Paragraphs		

Click **OK**.

- h. Select the table. On the **Home** tab, in the **Paragraph** group, click the **Center Align** button. Since the entire table is selected, **Center Align** centers the table rather than the text in the individual cells.

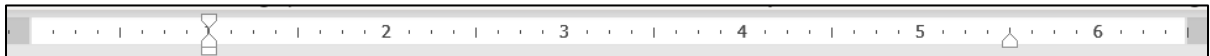
Mail Merge – Solutions

- a2. On the **Home** tab, in the **Styles** group, right-click the **Normal** style icon and select **Modify**.

Mac: Click **Styles**.



Change the font to 12 pt. Arial bold. Click the **Format** arrow and select **Paragraph**. Set the left and right indents to 1 inch. The right indent will show up at 5.5 on the ruler.



- a3. Type the text.
- a4. On the **Mailings** tab, in the **Start Mail Merge** group, click the **Start Mail Merge** arrow and select **Letters**.
- a5. On the **Mailings** tab, in the **Start Mail Merge** group, click the **Select Recipients** arrow and select **Use an Existing List**. Navigate to your **Word Exam** folder and double-click **Sample-f Table Sort DATA Done**.

- a6. Go to the top of the document. On the **Mailings** tab, in the **Write & Insert Fields** group, click the **Rules** arrow and select **Skip Record If**. In the **Field name** box, select **Height**. In the **Comparison** box, select **Equal to**. Leave the **Compare to** box empty.

Insert Word Field: Skip Record If

Field name: Height

Comparison: Equal to

Compare to:

OK Cancel

- a7. Select the word **LastName**. On the **Mailings** tab, in the **Write & Insert Fields** group, click the **Insert Merge Field** arrow and select **LastName**.
- a8. Repeat the process for **Height**.
- a9. Repeat the process for **Weight**.
- a10. Select the word **IF**. On the **Mailings** tab, in the **Write & Insert Fields** group, click the **Rules** arrow and select **If...Then...Else**, and fill in the boxes:

Field name: Weight

Comparison: Greater than

Compare to: 200

Insert this text: you need to lose a few pounds

Otherwise insert this text:

Click **OK**.

Because you have three choices, you need to have three **IF** fields. So, repeat the process with **110** in the **Compare to** box and **you are in good shape** in the **Insert this text** box.

Repeat the process again with **Less than or equal to** in the **Comparison** box, **110** in the **Compare to** box, and **you need to GAIN a few pounds** in the **Insert this text** box.

If you tap **Alt + F9** you should see the following codes:

```
{ SKIPIF { MERGEFIELD Height } = "" }Dear President {
MERGEFIELD LastName }:

We have analyzed your data and find that your height of
{ MERGEFIELD Height } and weight of { MERGEFIELD
Weight } indicates that { IF { MERGEFIELD Weight } >
200 "you need to LOSE a few pounds" "" }{ IF {
MERGEFIELD Weight } > 110 "you are in good shape" ""
}{ IF { MERGEFIELD Weight } <= 110 "you need to GAIN
a few pounds" "" }{ IF { MERGEFIELD Weight } <= 110
"you need to GAIN a few pounds" "" }.

Sincerely,

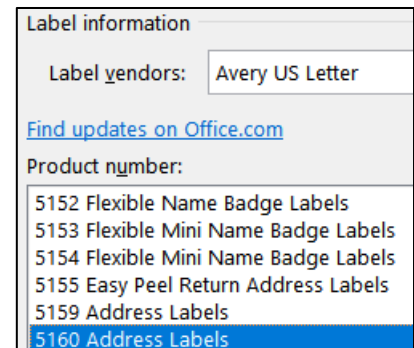
Dr. Watson
```

- c. On the **Mailings** tab, in the **Finish** group, click the **Finish & Merge** arrow, and select **Edit Individual Documents**. Click **OK** to create the new merged document.

Mailing Labels – Solutions

- a2. On the **Mailings** tab, in the **Start Mail Merge** group, click the **Start Mail Merge** arrow and select **Labels**. In the **Label vendors** box, select **Avery US Letter**. In the **Product number** box, select **5160 Address Labels**.

Tap **OK**.



- a3. On the **Mailings** tab, in the **Start Mail Merge** group, click the **Select Recipients** arrow, click **Use an Existing List**, and select **Sample-f Table Sort DATA Done**.
- a4. On the **Mailings** tab, in the **Write & Insert Fields** group, click the **Insert Merge Field** arrow, select **FirstName**, and tap **Enter**. Do the same for **LastName**, and **BirthDate**.
- a5. On the **Insert** tab, in the **Illustrations** group, click **Pictures**. Navigate to your **Word Files** folder and double-click the picture of **Goldy**.
- a6. With Goldy selected, on the **Picture Format** tab, in the **Size** group, click the launch dialog button. Uncheck the box to the left of **Lock aspect ratio**.

Mac: Remove the check to the right of the height and width values.



In the **Height** group enter **0.5"**. In the **Width** group enter **0.5"**.

On the **Picture Format** tab, in the **Arrange** group, click **Wrap Text** and select **In Front of Text** and drag into position.

Mac: Right-click the picture, point to **Wrap Text**, select **In Front of Text**.

- a7. On the **Mailings** tab, in the **Write & Insert Fields** group, click **Update Labels**.
- c. On the **Mailings** tab, in the **Finish** group, click the **Finish & Merge** arrow and select **Edit Individual Documents**. Click **OK**.

Do NOT submit for grading the Sample Exam Questions for Word

Information on the Word Exam

The second exam will cover only Word. You **may not submit** any Word homework on or after the day the exam is sent to you.

Date and Time: Check your syllabus for the date and time.

Location: On your own Windows or Macintosh computer.

Time Allowed: I will email the exam to you in the morning, and you will have to upload your zipped solution folder to Canvas by the afternoon of the next day.

Materials: I will email you a pdf copy of the exam questions and the original files you are to modify.

Submission: You will submit your exam in the same way as you did for the homework except you will NOT send in pdf files. Instead, you will submit your modified Word files so that I can see your field codes as well as the regular text.

Do the exam as soon as you get it. Do not wait until the last minute. If you miss the submission deadline you will receive a score of 0.

Preparation: Be sure you have gone over the **Sample Exam Questions for Word** a few times before exam day. Be sure you have a reliable internet connection and computer. You may use either a Windows computer or a **Mac**. The exam will work on both platforms.

Questions: If you have questions during the exam, email me. Of course, I will not give you any help or hints, but if you think something is wrong with your copy of the exam let me know immediately.

Honesty: The exam is open book and notes, but you may NOT discuss the exam or get any help from anyone else or do the exam with anyone else. Doing so will result in your receiving a 0 for the exam and an F for the course.

Project 11

PowerPoint Chapter 1: Getting Started

Step 1 Read Read the introductory material on pages 743-745 of the textbook.

Step 2 Activities Turn on the computer and do the following:

Project 1A: Start at the top of page 747.

Instead of **Activity 1.01 step 5** (page 749) do the following:

1. In the upper right corner of your screen, click the **X** to close PowerPoint. Do **NOT** save your file.

*You are not going to use sub folders (e.g., PowerPoint Chapter 1). Instead, so you can see them all at once, save all your PowerPoint files in the **PowerPoint Files** folder you downloaded on page **SG11**.*

2. Navigate to your **PowerPoint Files** folder and open **01A_KWT_Overview**, which is one of the files you downloaded at the start of the term.
3. Save the file in your **PowerPoint Files** folder using the name **LastName_FirstName_1A_KWT_Overview**
4. Starting with **Activity 1.02** (page 747), complete the Activities through step 7 of **Activity 1.14** on page 766. Do **NOT** do steps 8 and 9 in **Activity 1.14** on page 766. Do **NOT** do **Activities 1.15 through 1.16** on pages 767-769.
5. **Return here** when you have completed Project 1A on page 766.

Do NOT do *GO! With Google Slides*

Project 1B: When you have completed Project 1A, start at the top of page 773.

Instead of **Activity 1.17 step 1** do the following:

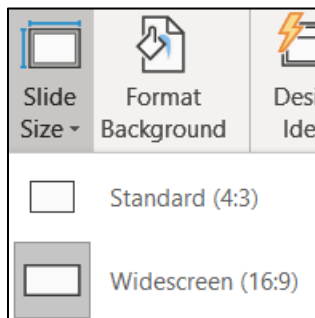
1. Navigate to your **PowerPoint Files** folder and open **p01B_Seattle**, which is one of the files you downloaded at the start of the term.
2. Save the file in your **PowerPoint Files** folder using the name **Lastname_Firstname_1B_Seattle**
3. Complete the rest of the Activities through step 7 on page 790. Do **NOT** do steps 8 and 9 in **Activity 1.33** on page 790.
4. **Return here** when you have completed Project 1B on page 790.

Do NOT do *GO! With Google Slides* or *GO! To Work*

HW11-1 Overview (Based on Project 1A)

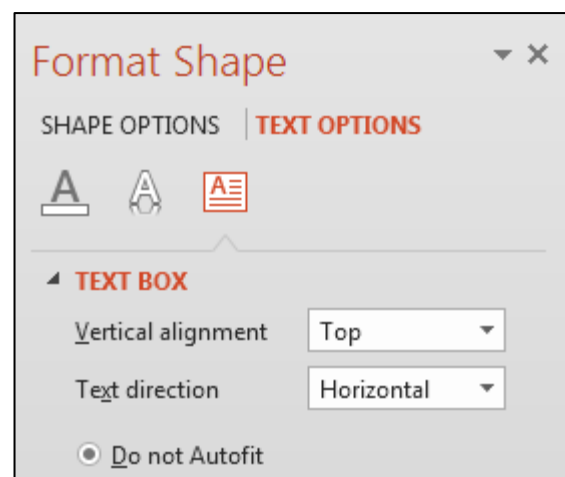
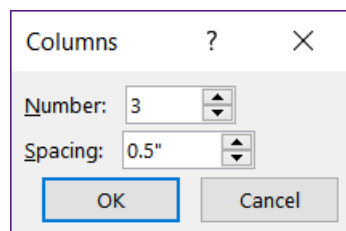
Problem: How can you create an electronic presentation suitable for large audiences?

- Open the presentation **Lastname_Firstname_1A_KWT_Overview**, which you created while following the directions in the textbook and saved on page 766.
- Save the document to your **PowerPoint Files** folder using the name **HW11-1 HWID 1A KWT Overview Done**
- On the **Design** tab, in the **Customize** group, click **Slide Size**.



Notice that this slide is set to **Widescreen** format, that is, a **16 to 9** ratio of width to height. **Standard** dimensions have a **4 to 3** ratio of width to height. Most of the presentations are in **Widescreen** but feel free to change the ratio to **Standard** if you wish.

- To make the text easier to read, in **Slide 5** change the paragraph to three columns by doing the following:
 - On **Slide 5, About Our Company**, click anywhere in the bottom textbox.
 - On the **Home** tab, in the **Paragraph** group, click the **Align Text** arrow and select **More Options**.
 - In the **Format Shape** pane, click **Text Options** and then click **Do not AutoFit**. This will allow the text to stay the same size when you insert the columns.
 - Click **Columns** and set the **Number** to **3** and the **Spacing** to **0.5**.

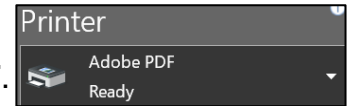


- Click **OK**.
- On the **Home** tab, in the **Paragraph** group, click the **left align** button.

e. Set up a **HANDOUT** for printing by doing the following:

1. Tap **Ctrl + p**.

Under **Printer**, click the arrow and select **Adobe PDF**.



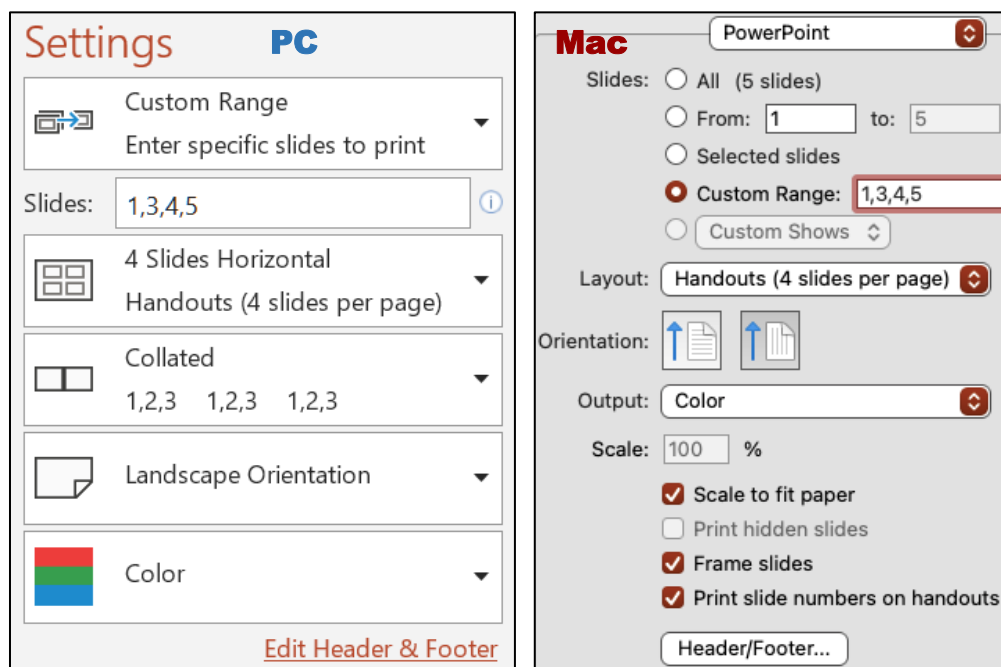
Mac: Don't try to make the PDF until you are ready to submit the file. See page **SG340**.

In the box next to **Slides**, type **1,3,4,5** (you do not want slide 2 printed).

Click the **Full Page Slides** arrow and, under **Handouts**, select **4 Slides Horizontal**. This will print a handout rather than slides.

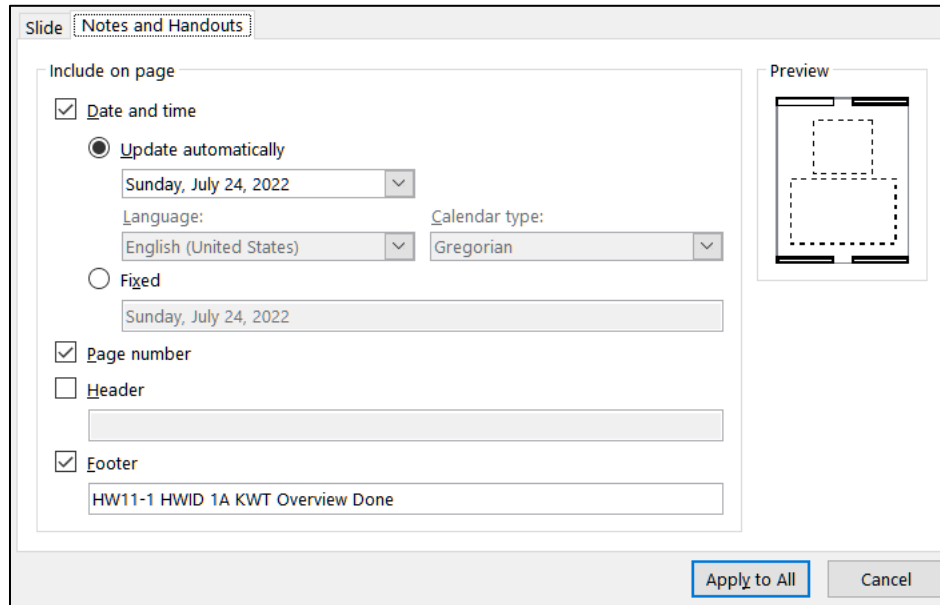
From the **Orientation** drop-down menu, select **Landscape Orientation**.

From the **Grayscale** drop-down menu, select **Color**.

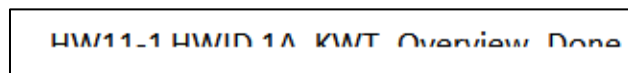


2. At the bottom of the **Settings** screen, click **Edit Header & Footer** and then click the **Notes and Handouts** tab. Set up the handout as follows:

- Include the **Date and time, updated automatically**. From the drop-down menu, choose the format that shows **Day, Month Date, Year**.
- Include the **Page number**.
- Do not include a **Header**.
- Check the **Footer** box and type the name of the file in the footer.
HW11-1 HWID 1A KWT Overview Done Unlike Excel and Word, PowerPoint does not have an automatic way of inserting the file name so you must insert it manually.



3. Click **Apply to All** and compare the preview with the key. Depending on your printer, the bottom edge of the footer may be partially cut off, like this:



If that happens, you can do the following to fix it:

- Tap the **Esc** key to cancel printing.
- On the **View** tab, in the **Master Views** group, click **Handout Master**.
- Click an edge of the textbox that contains the file name, hold down the **Shift** key, and click on an edge of the textbox that contains the page number. This selects them both.
- Drag up a bit.



- On the **Handout Master** tab, in the **Close** group, click **Close Master View**.
4. Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the presentation, and close it.

HW11-2 Seattle Itinerary (Based on Project 1B)

Problem: How can you edit and format a presentation and include custom transitions between slides?

- Open the presentation **Lastname_Firstname_1B_Seattle**, which you created while following the directions in the textbook and saved on page 790.
- Save the document to your **PowerPoint Files** folder using the name **HW11-2 HWID 1B Seattle Done**

c. Tap **Ctrl + p** and set up to print a handout as follows:

- Has slides 1, 3, 4, 5, 6, and 7 (do not print slide 2).
- Six slides horizontal per page.
- Portrait orientation.
- Color.
- Date, updated automatically, in the format Day, Month Date, Year.
- Page number but no header.
- Name of the file in the footer.

Compare the preview with the key. Make needed corrections, save the presentation, and close it.


HW11-3 Bird

Problem: How can you add graphics to a PowerPoint presentation and then edit the images?

- a. Open the presentation **HW11-3 Bird Original**, which is one of the files you downloaded at the start of the term.
- b. Save the presentation in the **PowerPoint Files** folder using the name **HW11-3 HWID Bird Done**
- c. Paste a picture of a bird into the slide by doing the following:

1. Look in the **PowerPoint Files** folder and double-click on the Word file **HW11-3 Bird Graphic WORD Original**, which is one of the files you downloaded at the start of the term. This is a Word file so you cannot open it from within PowerPoint.
2. Select the picture of the bird, copy it, and then close Word.
3. Switch to **PowerPoint** and paste the picture. If the **Design Ideas** pane opens, close it.

If your slide shows gridlines and you want to get rid of them, on the **View** tab, in the **Show** group, click the box to the left of **Gridlines** to remove the check. I left mine in.

- d. Adjust the image so that it is a "washout" (a grayscale picture, sometimes called a "watermark"). Place it behind the text on the slide by doing the following:
 1. Right-click the bird and select **Format Picture** to open its pane.
 2. Click the **Picture** icon  and then click the arrow next to **Picture Color**.
 3. To the right of **Recolor**, click the arrow and select **Washout**.



The picture now is much lighter, washed out like faded jeans.

4. Click the **Size and Properties** button . If necessary, click the **Size** arrow to open its menu.
5. Put a check in the **Lock aspect ratio** box so that when you change one of the dimensions the other dimension will change to keep the height to width ratio the same.

Mac: Put the check to the right of the height and width values.

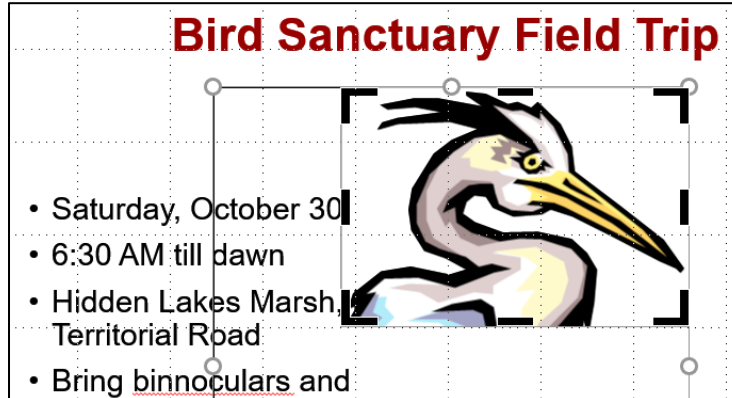



6. Change the height to **6 inches** and tap **Enter**. Center the image below the title.
7. Notice that the bird is blocking some of the text. To fix this, right-click the bird, choose **Send to back**, and then **Send to Back**. Now the bird is behind the text.



- e. Duplicate the slide and adjust the image on the new slide by doing the following:
 1. In the **Slides/Outline** pane (on the left), right-click the slide and select **Duplicate Slide**. This makes an exact copy of the slide and makes the new copy active.
 2. For this new slide, you want the text to go only halfway across the screen. Click anywhere on the bulleted text to display the textbox, click the right center resize handle (the little circle on the middle of the right side of the rectangle), and drag to the left until the textbox is half its original size.
- f. Crop, resize, and move the picture so that only the head of the bird appears in the lower right corner of the slide by doing the following:
 1. Click the picture. In the **Format Picture** pane, click the picture icon, and then click **Reset**. This restores the picture to its original form.
 2. On the **Picture Format** tab, in the **Size** group, click the **Crop** arrow and select **Crop**.

3. Move the cursor to the bottom left cropping handle, **L** press and hold the mouse button, and drag up and right until you just reach the shoulder of the bird. Then, let up on the mouse button




4. Once again, click the **Crop** button to turn off the cropping feature.
 5. Make the height 4 inches and drag the picture to lower right corner.
- g. Apply a light blue blended background to the slide by doing the following:
1. Move the pointer to a blank area of the slide, right-click, and choose **Format Background** to open its pane.
 2. If necessary, click the arrow next to **Fill** to display its options and then click the button next to **Gradient fill** to apply a colorful background.
- h. On the **Review** tab, in the **Proofing** group, click **Spelling** and fix the errors.
- i. If necessary, remove the slide numbers from the slides by doing the following:
1. Be sure nothing is selected and, on the **Insert** tab, in the **Text** group, click **Insert Slide Number**. 
 2. On the **Slide** tab, uncheck **Slide number**.
 3. Click **Apply to All**.

In my version of Office 365 I cannot remove the slide numbers from the handouts!

- j. Tap **Ctrl + p** and set up to print a **HANDOUT** as follows:
- Has both slides.
 - Two slides per page.
 - Portrait orientation.
 - Color.
 - Date, updated automatically, in the format Day, Month Date, Year.
 - Page number but no Header.
 - Name of the file in the footer.

Compare the preview with the key. Make needed corrections, save the presentation, and close it.

Step 4 Submit Now, submit the following handouts (not slides).

Mac: When you tap **Command + P** to open the **Print** dialog, at the bottom left corner of the **Settings** screen, you should see . If it is not there, click the arrows to the right of **PowerPoint** and select **Print Mode**. At the bottom of the window, click the **PDF** arrow, select **Save as PDF** and then click **Save**.

Use these names for the pdf files:

HW11-1 HWID 1A KWT Overview Done – This is a Handout of slides 1,3,4,5

HW11-2 HWID 1B Seattle Done – This is a Handout of slides 1,3,4,5,6,7

HW11-3 HWID Bird Done – This is a Handout of all slides

Create a pdf file of the output for each of the above, place them in a folder called **HW11 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW11 PowerPoint Chapter 1: Getting Started**.

Step 5 Backup Now would be a good time to backup your files.

Project 12

PowerPoint Chapter 2: Formatting Presentations

Step 1 Read Read the introductory material on page 813 of the textbook.

Step 2 Activities Turn on the computer and do the following:

Project 2A: Start at the top of page 815.

Instead of **Activity 2.01 step 1** do the following:

1. Navigate to your **PowerPoint Files** folder and open **p02A_Safety**, which is one of the files you downloaded at the start of the term.
2. Save the file in your PowerPoint Files folder using the name **LastName_FirstName_2A_Safety**
3. Complete the rest of the Activities through step 7 on page 838. Do **NOT** do steps 8 and 9 in **Activity 2.21** on page 838.
4. **Return here** when you have completed Project 2A on page 838.

Do NOT do GO! With Google

Project 2B: When you have completed Project 2A, start at the top of page 843.

Instead of **Activity 2.22 step 1** do the following:

1. Navigate to your **PowerPoint Files** folder and open **p02B_Celebrations**, which is one of the files you downloaded at the start of the term.
2. Save the file in your PowerPoint Files folder using the name **Lastname_Firstname_2B_Celebrations**
3. Complete the rest of the Activities through step 5 on page 854. Do **NOT** do steps 6 and 7 in **Activity 2.34** on page 854.
4. Do **NOT** do **Activity 2.35** on pages 854-855.
5. **Return here** when you have completed Project 2B on page 854.

Do NOT do GO! With Google Slides or GO! To Work

Step 3 Homework After you have completed Projects A and B for this Chapter, return here, do the problems listed below, and turn them in for grading.

HW12-1 Safety (Based on Project 2A)

Problem: How can lists, pictures, textboxes, and shapes be added to a PowerPoint presentation?

- a. Open the presentation **Lastname_Firstname_2A_Safety**, which you created while following the directions in the textbook and saved on page 838.
- b. Save the document to your **PowerPoint Files** folder using the name **HW12-1 HWID 2A Safety Done**
- c. For the first slide, change the font color to red and the background color to white. This will save a lot of ink if you ever have to print it.
- d. Tap **Ctrl + p** and set up to print a handout as follows:
 - Has all six slides.
 - Six slides horizontal per page.
 - Portrait orientation.
 - Color.
 - Date, updated automatically, in the format Day, Month Date, Year.
 - Page number but no header.
 - Name of the file in the footer.

Compare the preview with the key. Make needed corrections, save the presentation, and close it.

HW12-2 Celebrations (Based on Project 2B)

Problem: How can specially formatted artwork be created and added to a PowerPoint presentation?

- a. Open the presentation **Lastname_Firstname_2B_Celebrations**, which you created while following the directions in the textbook and saved on page 854.
- b. Save the document to your **PowerPoint Files** folder using the name **HW12-2 HWID 2B Celebrations Done**
- c. Tap **Ctrl + p** and set up to print a handout as follows:
 - Has slides 3, 4, 5 only.
 - Three slides per page.
 - Portrait orientation.
 - Color.
 - Date, updated automatically, in the format Day, Month Date, Year.
 - Page number but no header.
 - Name of the file in the footer.


Compare the preview with the key. Make needed corrections, save the presentation, and close it.

HW12-3 Graphics and Sound

Problem: How can graphics sound be added to a PowerPoint presentation?

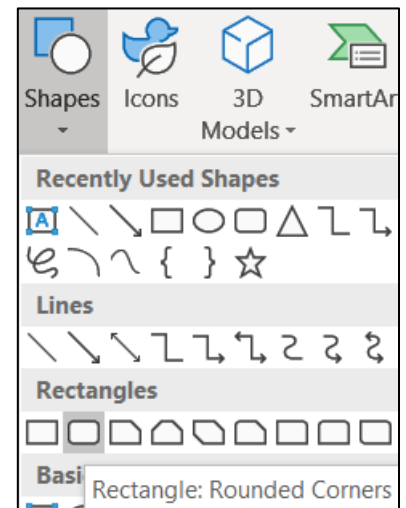
- Start PowerPoint and open a blank presentation. Change the slide layout to **Blank** (**Home**, **Slides**, **Layout**, **Blank**).
- Set the background for the slide to the canvas texture fill (right-click, **Format Background**, **Fill**, **Picture or texture fill**, click the second texture in the first row).
- Save the document to your PowerPoint Files folder as **HW12-3a HWID Graphics and Sound Done**

- Add some drawing objects by doing the following:

- If the ruler or gridlines are not showing, turn them on (**View**, **Show**, **Ruler**, **Gridlines**).
- On the **Insert** tab, in the **Illustrations** group, click the **Shapes** arrow and choose **Rectangle: Rounded Corners**.
The mouse pointer will turn into a cross .
- Move the mouse pointer onto the slide, and then click and drag to produce a small square.

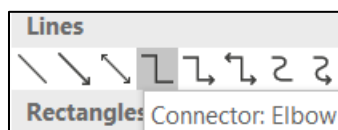
On the **Drawing Format** tab, in the **Size** group, change the **Height** and **Width** to **2 inches**.

- Click inside the square and type **Access**.
- Make the font Arial Black, 24 pt, and yellow. If necessary, center align the text within the box.
- Insert a diamond that is 2 inches high and 3 inches wide. You can start from scratch, as you did for the rectangle, or you can use the **Format Painter** as you did in Word and Excel to copy the text formatting quickly. Inside, type **Hard**, tap **Enter**, and type **Work**.
- Insert an oval that is 1.5 inches high and 3.5 inches wide. Inside, type the word **Excellence**.



- Add some lines to connect the three shapes by doing the following:

- On the **Insert** tab, in the **Illustrations** group, click **Shapes**, and then **Connector: Elbow**.



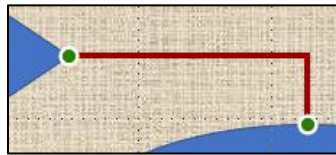
2. Move the mouse pointer, which is now a cross, to the middle of the right side of the square and then click and drag to the right and down to connect to the top center of the diamond and release the mouse button.



The green dots show the objects are “connected” by the line. When you move an object, the line will stay connected and move with the object.

With the new line still selected, on the **Drawing Format** tab, in the **Shape Styles** group, click the **Shape Outline** arrow and select **Weight** and then **3 pt**. Change the line color to **red**.

3. Use the same technique to add a connector between the oval and the diamond. A quick way to do this is to select the line you just created and tap **Ctrl + d**. This duplicates the line. Then, drag the ends to the proper locations. The ends will be green dots when the connections are correct.

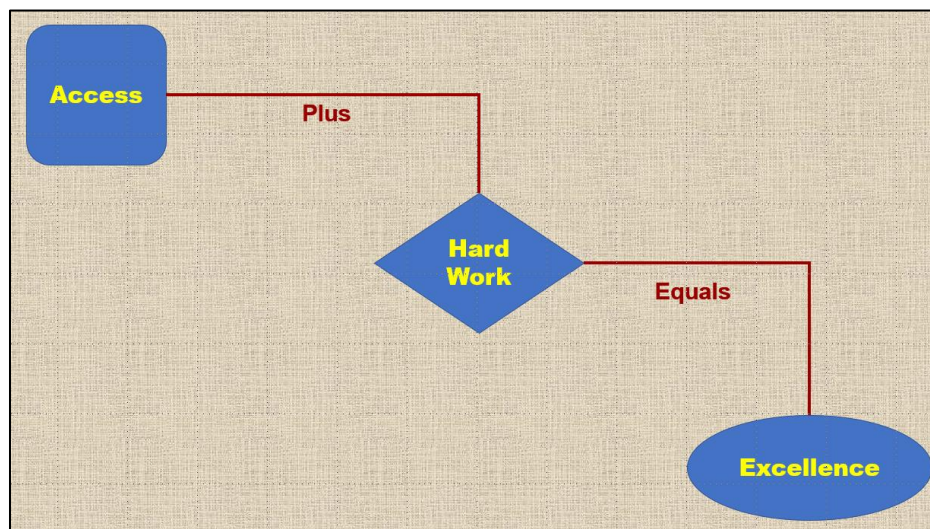


- f. Add some textboxes by doing the following:

It will be easiest if you create the textbox at an arbitrary location on the slide and then use the mouse or arrow keys to position it after you have entered the text and formatted it.

1. On the **Insert** tab, in the **Text** group, click **Text Box**.
2. Draw a textbox. Make the height 0.5 inch and the width 2. Type **Plus** in the box. Make the font Arial, red, 24 pt, and bold. Use **Ctrl + d** to duplicate the **Plus** box and then change the text to **Equals**.

Adjust the locations of the textboxes and shapes as shown.




g. Insert a couple of photos by doing the following:

1. On the **Insert** tab, in the **Images** group, click **Pictures**. Navigate to your **PowerPoint Files** folder and select **HW12-3b Photo Original.jpg**, which is one of the files you downloaded at the start of the term.
2. Click **Insert**.
3. Make the photo height **3.5** inches.
4. Move the photo to the lower left corner of the slide.
5. Insert the picture **HW12-3c Goldy Original**, which is one of the files you downloaded at the start of the term.
6. Make the picture height **2.5** inches.
7. Move the picture to the upper right corner of the slide.
8. The background of the image covers up the slide background. You can remove the background, if you wish, by doing the following (*this is a bit tricky so it is optional*):
 - With the image still selected, on the **Picture Format** tab, in the **Adjust** group, click **Remove Background**. This makes the part of the image look magenta. That is the part which will be removed. Notice that it cuts off part of the large **M** and part of Goldie.



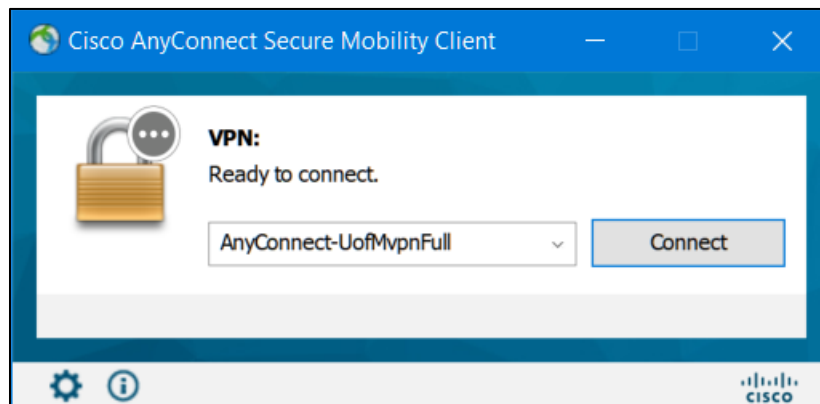
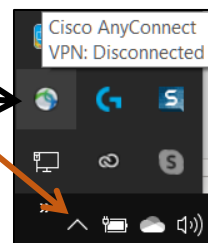
- On the **Picture Background Removal** tab, in the **Refine** group, click **Mark Areas to Keep**. This will produce a little white pencil. Now the tricky part. Click those areas of Goldie and the M that you want to keep. It takes some trial and error. Clicking at various points removes the magenta in blocks, which are not obvious!
- On the **Background Removal** tab, click **Keep Changes** and the texture background will show through.

- h. Add a sound clip from an audio file that is already on your computer.
1. On the **Insert** tab, in the **Media** group, click the **Audio** arrow and select **Audio on My PC**. Navigate to your **PowerPoint Files** folder and double-click **HW12-3d Audio Kottke Original**, which is one of the files you downloaded at the start of the term. The file will be inserted. This is a clip of guitarist Leo Kottke.
 2. Drag the speaker icon to the center bottom of the slide.
 3. Click the play arrow  to hear a preview.
- i. Add sound clips from a large U of M audio database. Since you are a U of M student you have access to a huge number of free video and audio files that can be downloaded and used as you wish.

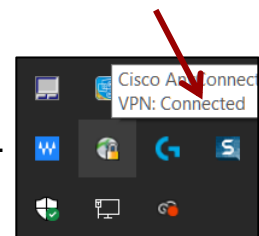
If you have trouble with the following you can skip it and move on to part j.

If you are working from off campus, you will have to connect to the U through a **VPN** (Virtual Private Network). The directions for installing a **VPN** client are at <https://it.umn.edu/services-technologies/virtual-private-network-vpn>

1. To open the **VPN** client, on the **Taskbar**, click the **Show hidden icons** arrow and click **Cisco AnyConnect VPN: Disconnected**.
2. From the down-arrow, select **AnyConnect-UofMvpnFull**



3. Click **Connect** and enter your internet ID and email password. Click **OK**. Use [Duo Two-Factor Authentication](#) to join the full-tunnel network.
4. Open your web browser, and type the following in the address box: <https://it.umn.edu/stock-content-0>



5. Scroll down a bit and you will see:

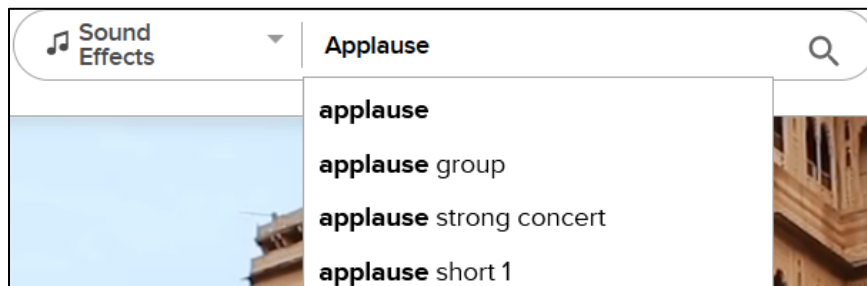
Getting Started

VideoBlocks: 100,000+ clips of stock video, Adobe After Effects templates, motion backgrounds and more.

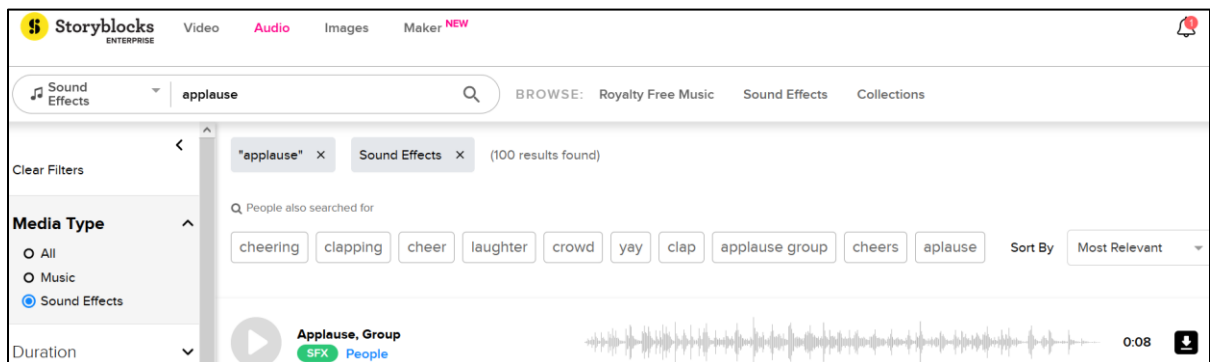
AudioBlocks: Royalty-free production music, sound effects, and loops.

GraphicStock: Royalty-free photos, vectors, illustrations & other design elements.

6. Click **AudioBlocks**.
7. Select **Sound Effects** from the drop down menu in the top center of the window.
8. Type **Applause** in the search box.

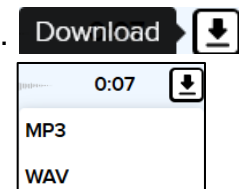


9. Click **Applause** at the top of the list.



To play a clip, click its **Play** arrow.

10. Choose one of the clips. On the right, find its download icon. **Download**
11. Click the download icon and select **MP3** ⁴⁵.
12. A dialog box will appear allowing you to **Open** or **Save** the file. Click the button next to **Save File** and then click **OK**.
The file will be downloaded to your **Downloads** folder as an **MP3** file.
13. Rename the file **HW12-3e Audio Applause U Database**. Drag the file to your **PowerPoint Files** folder.



⁴⁵ **MP3** (also known as **MPEG-3**) is the designation for a group of audio and video coding standards agreed upon by the **M**oving **P**icture **E**xperts **G**roup (**MPEG**). It was released in 1993.

14. Close your browser. Open the **VPN** client on the **Taskbar**, click the **Show hidden icons** arrow, click **Cisco AnyConnect**, and then click **Disconnect**. Close the **Cisco** dialog box.

15. Insert the new audio clip and drag its icon so it is just above the other audio icon.



16. Click the top icon (applause). On the **Audio Playback** tab, in the **Audio Options** group, from the **Start** box select **Automatically** and then put a check next to **Hide During Show**.

Repeat this for the bottom icon.

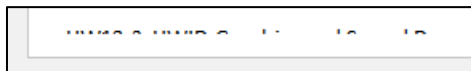
17. Tap **F5** to start the slide show. Remember, on a laptop you may need to use the **fn** key also. The clapping will start as soon as the show starts and then the music will play.

18. Tap the **Esc** key to end the slide show.

- j. Tap **Ctrl + p** and set up to print a **handout** as follows:

- Has the one slide. If one slide handout is not an option, use 2 slide handout.
- One slide per page.
- Landscape orientation.
- Color.
- Date, updated automatically, in the format Day, Month Date, Year.
- Page number but no header.
- Name of the file in the footer.

Look at the bottom of the **Print Preview**. Depending on your printer, you may see that the footer is partially cut off at the bottom.



You can fix that as you did on page **SG336**.

If necessary, tap **Ctrl + p** again and compare the preview with the key. Make needed corrections, save the presentation, and close it.

HW12-4 Poster

Problem: How can a PowerPoint presentation be transformed into a very large poster suitable for display at a research conference?

PowerPoint is useful when one person wants to present information to an audience and there is a computer and projector available. PowerPoint can also be used to create large posters that can be displayed in a room or hall where people are walking by. In such a setting, people can read the posters that have topics which interest them. Typically, the person who made the poster is available to have one-on-one discussions of their work with passers-by.

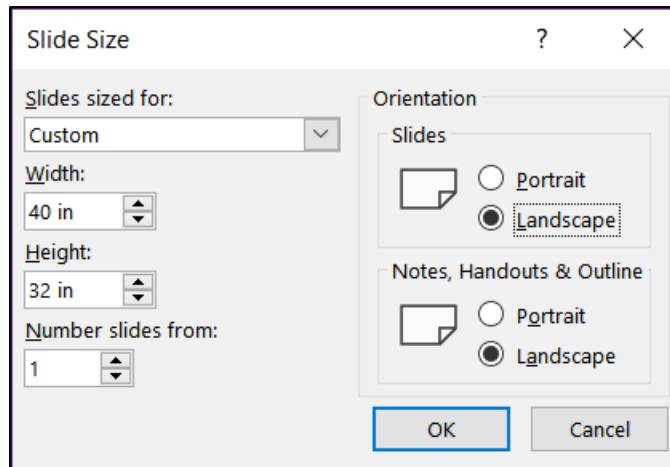


In this project, you will create a large poster by modifying one of your previous PowerPoint presentations. More information, useful tips, and some nice templates can be found at <http://www.craftofscientificposters.com/>

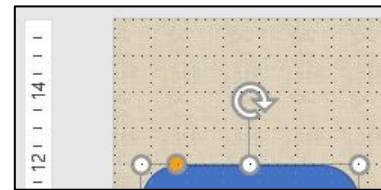
One of their templates is included in your **PowerPoint Files** folder under the name **HW12-4 PowerPoint Poster Template Original**

- a. Open the presentation **HW12-3a HWID Graphics and Sound Done**, which you created for **HW12-3**.
- b. Save the presentation to your **PowerPoint Files** folder using the name **HW12-4 HWID Poster Done**
- c. Modify the slide by doing the following:
 1. Delete the two sound icons.
 2. On the **Design** tab, in the **Customize** group, click **Slide Size**.
 3. Select **Custom Slide Size**.
 4. In the **Slides sized for** box click the arrow and select **Custom**.

5. Set the width to **40** inches and the height to **32** inches. Be sure the **Orientation** is **Landscape**.



6. Click **OK** and then click **Maximize**.
7. Move the **Access** square so its top is at about 12 inches on the vertical ruler. Notice how the connector line stays attached to the shape.



Move the **Excellence** oval so its bottom is at about 10 inches.

8. Resize **Goldy** to be 3 inches high and 4 inches wide (remember to uncheck **Lock aspect ratio**). Move the image to the upper right corner of the slide.
9. Make the height of the photo 8 inches and the width 12 inches. Move the image to the lower left corner.
10. Right-click one of the red connectors and select **Format Shape** to open that pane. Click the paint bucket and **Line** and change the **Width** to **20 pt**. Click the other connector and change its **Width** to **20 pt**.
11. Change the font of **Plus** and **Equals** to Arial Black. Readjust the positions so they are centered just below their connectors.
12. Insert a textbox at the top of the slide with the text **General College University of MN**. Make the text Arial Black and 128 pt. Adjust the textbox size so the text is all on one line and in the upper left of the slide.
13. Insert a textbox at the top of the slide under the word **College** and type **Presented by HWID** (use your HWID). Make the text purple Arial Black and 88 pt. Adjust the textbox as shown below:



14. Insert another textbox above the photo and enter the following text in bold 66 pt Arial. You can either type the text or copy it from the file [HW12-4 PowerPoint Poster Text Original](#), which is one of the files you downloaded at the start of the term, and then paste it.

Mission: To develop, through teaching, research, and service, the potential for baccalaureate education in students who are serious about fulfilling their previously undeveloped or unrecognized academic promise.

Make the textbox 8 inches high and 15 inches wide.

15. Just below **Goldy**, enter this text in bold 66 pt Arial.

Purpose: GC provides entry to the University for students from a wide range of ethnic, social, and economic backgrounds who would like to pursue a four-year degree, but who lack the academic skills or records to realistically compete in a regular degree-granting college.

Make the textbox 9 inches high and 17 inches wide.

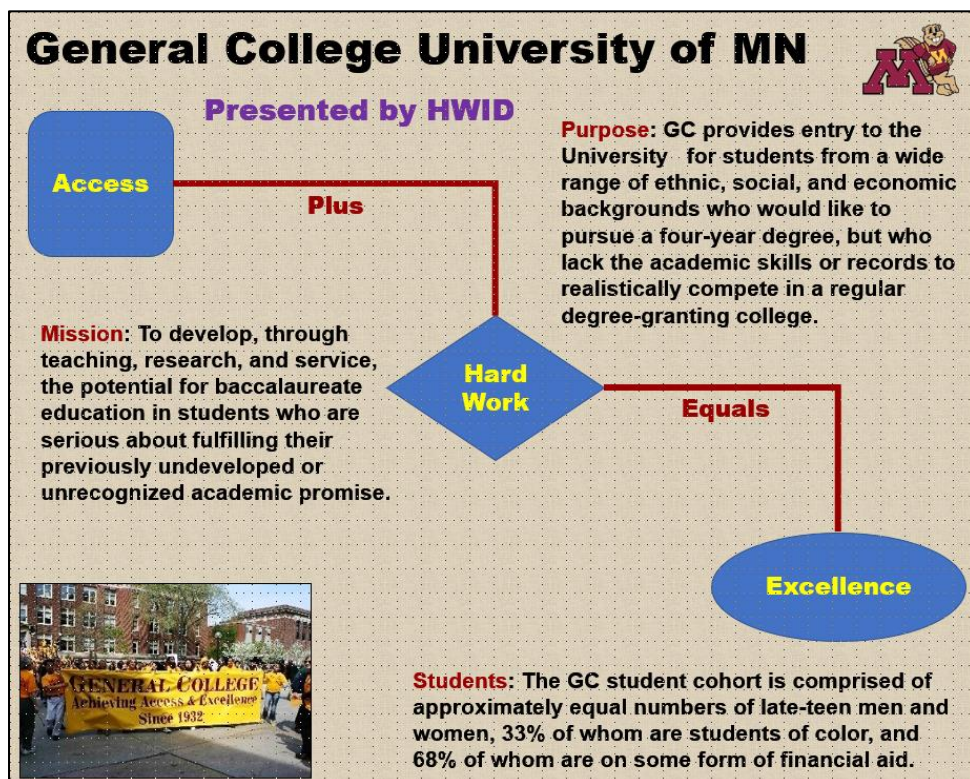
16. Just below **Excellence**, enter this text in bold 66 pt Arial.

Students: The GC student cohort is comprised of approximately equal numbers of late-teen men and women, 33% of whom are students of color, and 68% of whom are on some form of financial aid.

Make the textbox 5 inches high and 23 inches wide.

17. Make the titles **Mission**, **Purpose**, and **Students** red.

18. Adjust the textboxes so the slide looks like the following:



d. The poster is ready to print. Because you will make a pdf of it to fit an 8.5 by 11 inch piece of paper, do the following:

1. Tap **Ctrl + p** to open **Print Preview**.
2. In the **Settings** group, click the **Full Page Slides** arrow and be sure there is a check next to **Scale to fit paper**.
3. Choose **Color**.
4. Compare the preview with the key. Make needed corrections, save the presentation, and close it.

If you want to print a poster on a large format printer you can use the lab in B060 Coffman Union. The cost is \$4.50 per square foot so the poster you created for this homework would run you about \$36. For details on printing, see

<http://it.umn.edu/services/all/academic-technology-spaces/computer-labs/large-format/>

If you are a CEHD student, you may be able to have your poster printed for free. For more information call the CEHD Dean's office at 612-626-9252 or drop by 104 Burton Hall.

Step 4 Submit Now, submit the following. The first three are HANDOUTS but the fourth is a SLIDE. Use these names for the pdf files:

HW12-1 HWID 2A Safety Done – This is a Handout

HW12-2 HWID 2B Celebrations Done – This is a Handout of slides 3, 4, 5

HW12-3a HWID Graphics and Sound Done – This is a Handout

HW12-4 HWID Poster Done – This is a SLIDE, not a Handout

Create a pdf file of the output for each of the above, place them in a folder called **HW12 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW12 PowerPoint Chapter 2: Formatting Presentations**.

Step 5 Backup Now would be a good time to backup your files.

Project 13

PowerPoint Chapter 3: Animation, Tables & Charts

Step 1 Read the introductory material on page 877 of the textbook.

Step 2 Activities Turn on the computer and do the following:

Project 3A: Start at the top of page 879.

Instead of **Activity 3.01 step 1** do the following:

1. Navigate to your **PowerPoint Files** folder and open **p03A_Trails**, which is one of the files you downloaded at the start of the term.
2. Save the file in your PowerPoint Files folder using the name **LastName_FirstName_3A_Trails**
2. Complete the rest of the Activities through step 9 on page 900. Do **NOT** do steps 10 and 11 in **Activity 3.17** on page 900.
4. **Return here** when you have completed Project 3A on page 900.

Do NOT do GO! With Google

Do NOT do Project 3B

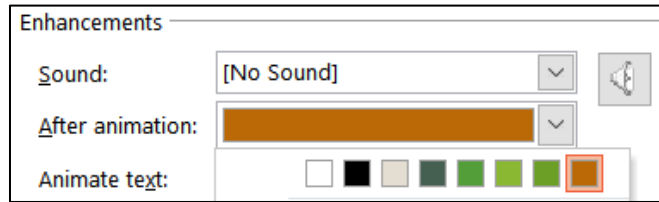
Step 3 Homework After you have completed Project A **ONLY** for this Chapter, return here, do the problems listed below, and turn them in for grading.

HW13-1 Trails (Based on Project 3A)

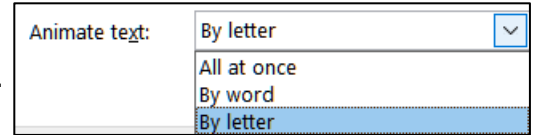
Problem: How can customizable backgrounds, themes, and animations be added to a PowerPoint presentation?

- a. Open the presentation **LastName_Firstname_3A_Trails**, which you created while following the directions in the textbook and saved on page 900.
- b. Save the presentation to your **PowerPoint Files** folder using the name **HW13-1 HWID 3A Trails Done**
- c. To help your audience focus on what you currently are saying, it sometimes helps to dim previous bullets when a new one enters the screen. To see how this works, do the following:
 1. Click **Slide 3** and select the three bullets.
 2. On the **Animations** tab, in the **Advanced Animation** group, click **Animation Pane**.
 3. In the **Animation Pane**, click the **Rectangle** arrow and select **Effect Options**.

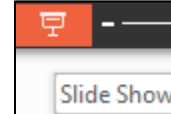
4. Click the **After animation** arrow and select the color **brown**.



5. Click the **Animate text** arrow and select **By letter**.
6. Click **OK**.

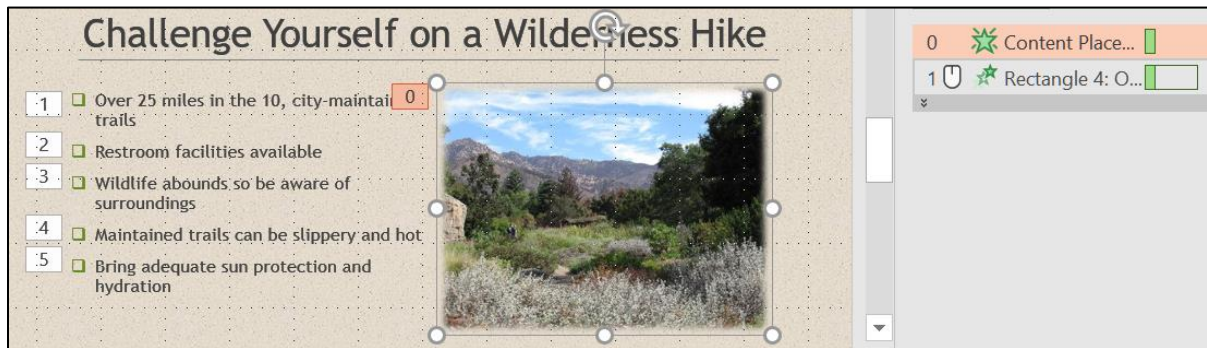


7. Click the **Slide Show** button on the **Status Bar** and click through the animations on this slide.



8. Repeat the process for **Slide 4**.

9. Click the photo. In the **Animation Pane**, **Content Place** 5 is highlighted. The **5** means the photo will enter **after** the four bullets. To make the photo appear before the bullets, click the upward pointing triangle in the upper right corner of the pane. **Content Place** moves above **Rectangle** and the **5** changes to a **0**.



- d. Tap **F5** to play the slideshow and note how the animations work.

- e. Tap **Ctrl + p** and set up to print a handout as follows:


- Has all six slides.
- Six slides horizontal per page.
- Portrait orientation.
- Color.
- Date, updated automatically, in the format Day, Month Date, Year.
- Page number but no header.
- Name of the file in the footer.

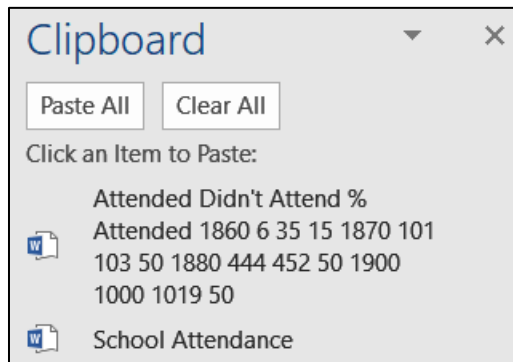
Compare the preview with the key. Make needed corrections, save the presentation, and close it.

HW13-2 Import from Word and Excel Documents

Problem: How can tables and charts created in Word or Excel be inserted into a PowerPoint presentation?

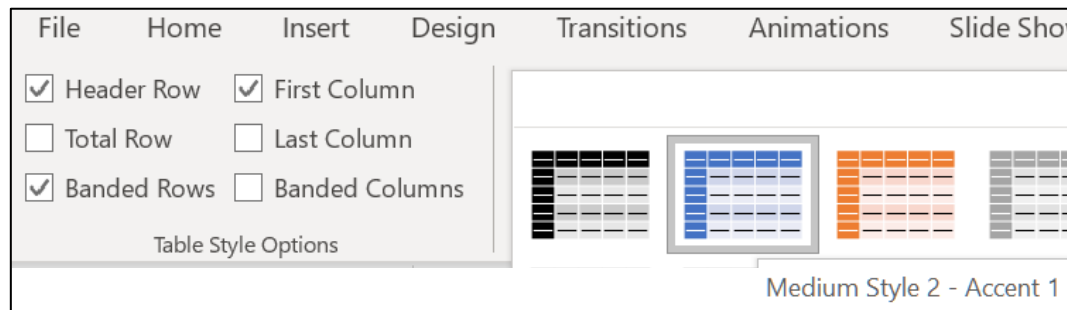
I asked you to **skip Project 3B** in the textbook because it shows you how to create tables and charts from within PowerPoint. You already know how to do that in Word and Excel so all you really need to learn is how to import them into PowerPoint. In this exercise, you will copy a table from a Word document and a range of cells from an Excel workbook and paste them into a PowerPoint presentation. In **HW13-3** you will import a chart from Excel.

- a. Open the Word document **HW13-2a Word School Attendance Table Original**, which is one of the files you downloaded at the start of the term. It is in your **PowerPoint Files** folder. Note that you cannot open it from within PowerPoint – you must double-click its icon in the **PowerPoint Files** folder to have Word open it.
- b. Copy the information by doing the following:
 1. On the **Home** tab, in the **Clipboard** group (on the far left), click the **Clipboard** dialog box launcher  to open the **Clipboard** pane.
 2. If necessary, click **Clear All** to delete any items stored on the clipboard.
 3. Copy the title, **School Attendance**.
 4. Select the table. Be careful to **not** include the **School Attendance** title or the paragraph mark at the bottom when you make your selection.
 5. Copy the table.



6. Minimize Word but do NOT exit Word.
- c. Do the following to paste the Word items you just copied into PowerPoint.
 1. Start PowerPoint, open a **Blank** presentation, and change the layout of the first slide to **Blank**.
 2. Save the presentation to your **PowerPoint Files** folder using the name **HW13-2d HWID Import from Word and Excel Done**

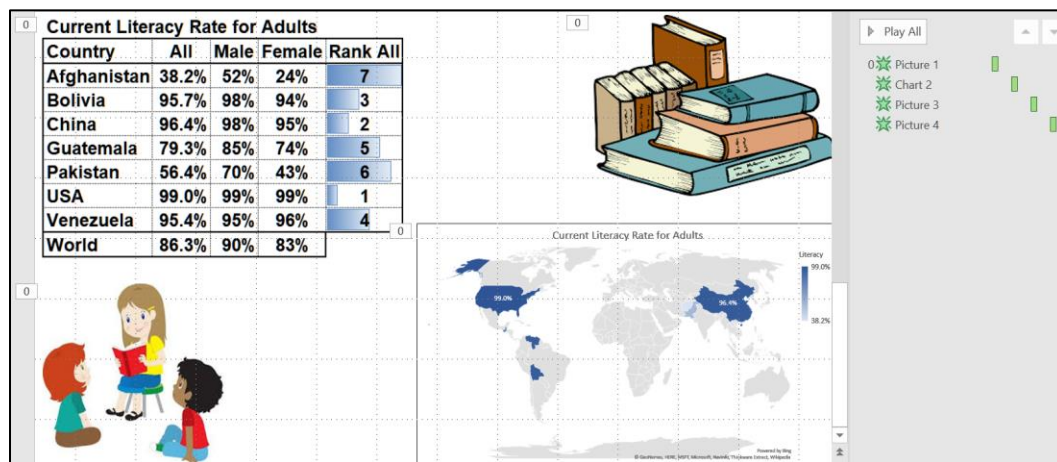
3. On the **Home** tab, in the **Clipboard** group, click the **Clipboard** dialog box launcher to open the **Clipboard** pane.
4. In the **Clipboard** pane, click the title **School Attendance** to insert it.
5. Change the font to 36 pt Arial Black. Move the title so it is near the top center of the slide.
6. Click a blank area of the slide to deselect the title.
7. In the **Clipboard** pane, click **Attended Didn't Attend...** to insert the table. If the **Design Ideas** pane opens, close it.
8. On the **Table Layout** tab, in the **Table Size** group, change the width of the table to 9 inches and the height to 3 inches.
9. Make the font bold 24 pt Arial.
10. Move the table to the center of the slide. An exact way to do this is to, on the **Table Layout** tab, in the **Arrange** group, click the **Align** arrow and click **Align Center** to center the table horizontally. Do it again but this time click **Align Middle** to center the table vertically.
11. Center the text in each cell both vertically and horizontally. Center the table on the slide (**Table Layout** tab, **Alignment**, **Center Horizontally**, **Center Vertically**).
12. Apply a table style of your choice. I checked **Header Row**, **First Column**, and **Banded Rows** and **Medium Style 2 – Accent 1**, which is blue.



13. With the table still selected, on the **Animations** tab, in the **Animation** group, click the **Add Animation** arrow, and select **More Entrance Effects**.
 14. Click **Bounce** (under **Exciting**) and then click **OK**.
 15. On the **Animations** tab, in the **Timing** group, click the **Start** arrow and select **With Previous**. This will automatically start the animation when the slide show begins.
- d. Insert an Excel table by doing the following:
1. Open the **Excel** workbook **HW13-2b Excel Education Rates Table Original**, which is one of the files you downloaded at the start of the term. It is in your **PowerPoint Files** folder.
 2. In Excel, if the **Clipboard** pane is not open, on the **Home** tab, in the **Clipboard** group, click the **Clipboard** dialog box launcher.

3. If necessary, click **Clear All** to get rid of the old items that were copied.
 4. Click cell **A1** and copy the title, **Education Rates by State**.
 5. Copy cells **B2:H12**.
 6. Minimize Excel but do **NOT** exit Excel.
- e. Do the following to paste the Excel items you just copied into PowerPoint.
1. Insert a new slide using the **Blank** layout.
 2. Open the **Clipboard** pane and click the title **Education Rates by State** to insert it.
 3. Change the font to 36 pt Arial Black and move it so it is near the top center of the slide.
 4. Animate the entrance of the title with the **Fly In** animation (under **Basic**) and set it to start **With Previous** so it will enter when this slide opens.
 5. Click a blank area of the slide to deselect the title.
 6. In the **Clipboard** pane, click the table **State High School...** to insert it.
 7. Make the width of the table 9 inches and the height 3 inches (**Table Layout, Table Size**). Be sure to choose **Table Size** and not **Cell Size**.
 8. Make the font 20 pt Arial Black.
 9. Center the table on the slide.
 10. Animate the entrance of the table using **Fade** (under **Subtle**) and set it to start **After Previous** with a 1 second delay.
 11. Close the **Clipboard** pane.
 12. Make the transition to this slide **Fall Over** (under **Exciting**).
- f. When importing information from Word or Excel, it is sometimes better to take screenshots, especially if complex formatting is involved and you will not need to make changes to the data while in PowerPoint. Do the following:
1. Insert a new slide. Use the **Blank** layout.
 2. Open the Excel workbook **HW13-2c Excel Current Literacy Rates Original**, which is one of the files you downloaded at the start of the term. It is in your **PowerPoint Files** folder.
 3. Open the **Clipboard** pane and use the **Snipping Tool** to take a screenshot of cells **B2:F11**.
 4. Copy the map. FYI, to create the map I selected **B4:C10** and, on the **Insert** tab, in the **Charts** group, I clicked the **Maps** arrow and selected the map icon.
 5. Copy the image of the **girl reading** and then copy the image of the **books**.

6. Switch to PowerPoint and paste the screenshot of the Excel table into the blank slide. Make the height 4 inches and the width 6 inches. Drag it to the upper left corner of the slide.
7. Paste the map. Make the size 4 high inches by 7 inches wide. Drag it to the lower right corner of the slide.
8. Paste the image of the girl reading. Make the size 3 inches by 3 inches. Drag it to the lower left of the slide.
9. Paste the image of the books. Make the size 3 inches high by 4 inches wide. Drag it to the upper right of the slide.
10. Animate the **Table**, **Map**, **Girl**, and **Books**, so that they enter automatically, one after the other, using the **Fade** animation, with a one second delay between each.⁴⁶



11. Tap **F5** to play your presentation.

g. Tap **Ctrl + p** and set up to print a handout as follows:

- Has all three slides.
- Three slides per page.
- Portrait orientation.
- Color.
- Date, updated automatically, in the format Day, Month Date, Year.
- Page number but no header.
- Name of the file in the footer.

Compare the preview with the key. Make needed corrections, save the presentation, and close it. Exit Word and Excel.

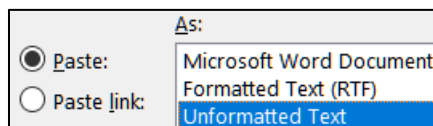
⁴⁶ Click the chart, set it to **Start With Previous**; click the map and set it to **Start After Previous** and **Delay 1.00**; do the same for the girl and the books.

HW13-3 Integration

Problem: How can a PowerPoint presentation be created from a Word document and objects from other files?

a. You will use the Table of Contents of the large word document you edited in **HW10-5** as the starting point for PowerPoint slides. Do the following:

1. Open **HW10-5f HWID Large Document Done**, which is in your **Word Files** folder.
2. Copy the **Table of Contents**.
3. Open a new blank Word document.
4. On the **Home** tab, in the **Clipboard** group, click the **Paste** arrow, and select **Paste Special**. Click **Unformatted Text (Mac-Keep text only)**.



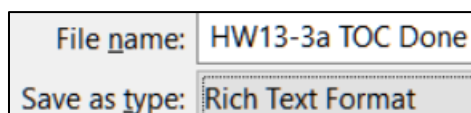
Click **OK**.

5. Tap **Ctrl + h** to open the **Replace** dialog box.

Mac: From the menu bar, click **Edit, Find, Advanced Find and Replace, Replace**.

In the **Find what** box type **^t** Click **Replace All**. This will remove the tab codes.

6. In the **Find what** box, delete **^t** and type **^#**
Click **Replace All**. This will remove all page numbers.
7. Tap **Ctrl + a** to select all the text. On the **Home** tab, in the **Styles** group, click **Heading 1**.
8. Select from **Daily Schedule of Class Activities** through **Role of the Instructor** and click **Heading 2**.
9. Select from **The Mathematics Placement Exam** through **Focus Groups** and click **Heading 2**.
10. Select all the text. Change the font to Arial and the color to black.
11. To save the file under a new name and format, select **File, Save as**, navigate to your **PowerPoint Files** folder, and type **HW13-3a TOC Done** in the **File name** box. Click the **Save as type (File Format on Mac)** arrow and select **Rich Text Format**.



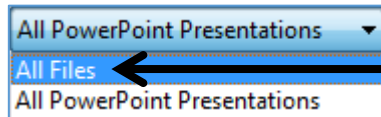
Click **Save**.

12. Close all Word files.

- b. Use the document you just created as the starting point for your PowerPoint presentation by doing the following:

Mac: Instead of steps 1 and 2 below, navigate to your **PowerPoint Files** folder, right-click the name **HW13-3a TOC Done**, select **Open With**, and select **Other**. From the **Enable** menu, select **All Applications**. Scroll down and double-click **Microsoft PowerPoint**.

1. Start PowerPoint and choose **Blank Presentation**.
2. Tap **Ctrl + O**, click **Browse**, and navigate to your **PowerPoint Files** folder. At the bottom right of the dialog box, click the **All PowerPoint Presentations** arrow and select **All Files**.

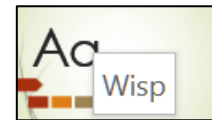


Double-click the Word file **HW13-3a TOC Done**.

3. The lines of **HW13-3a TOC Done** that were formatted with style **Heading 1** are transformed into new PowerPoint slides while the lines that were formatted with style **Heading 2** appear as subheadings within the slides.

Save the presentation to your **PowerPoint Files** folder using the name **HW13-3b HWID Integration Done**

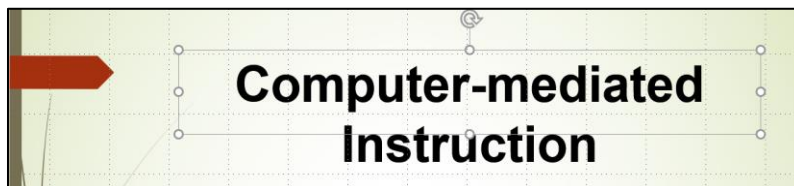
4. On the **Design** tab, in the **Themes** group lower right, click the **More** button  and apply the **Wisp** theme.



If the **Design Ideas** pane opens, close it.

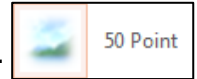
5. Click on any thumbnail (on the left) and tap **Ctrl + a**. This selects all the slides.
 6. On the **Home** tab, in the **Slides** group, click the **Layout** arrow and select **Title only**.
- c. Do the following to set up **Slide 1 (Computer-mediated Instruction)**.

1. Click **Slide 1** (be sure the other thumbnails are not selected) and make the title 60 pt bold with center alignment so it looks like this:



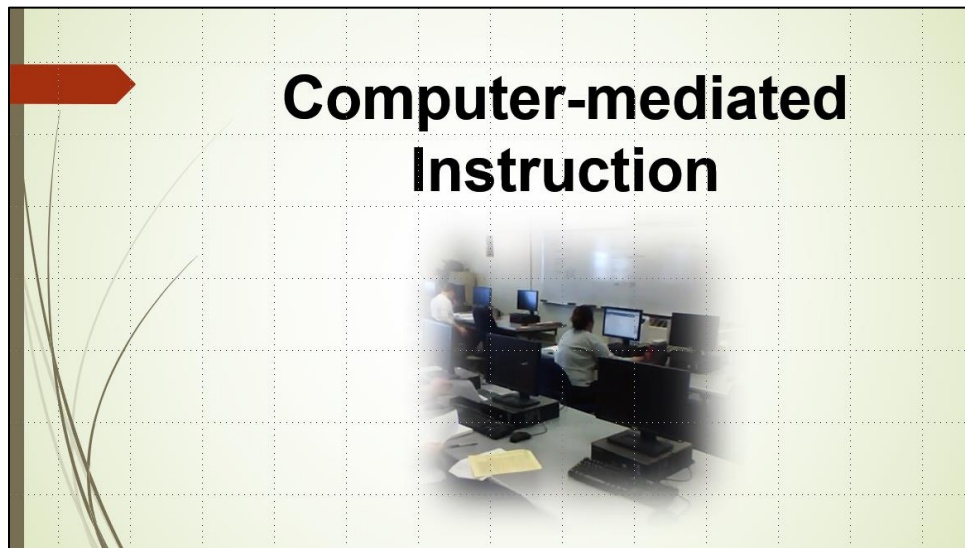
2. Click in a blank area of **Slide 1**. On the **Insert** tab, in the **Images** group, click **Pictures**. Navigate to your **Word Files** folder and double-click **HW10-5b Photo Original**. If the **Design Ideas** pane opens, close it.

3. Right-click the photo and click **Size and Position**. On the **Format Picture** pane, confirm there is a check next to **Lock aspect ratio**, and change the height of the photo to 4.5". With the aspect ratio locked, when you change the height the width automatically changes to keep the height and width in the same proportion as the original (hence, no distortion).
4. On the **Picture Format** tab, in the **Picture Styles** group, click the **Picture Effects** arrow and click **Soft Edges, 50 Point**.



Mac: On the **Format Picture** pane and click **Effects** (the pentagon).

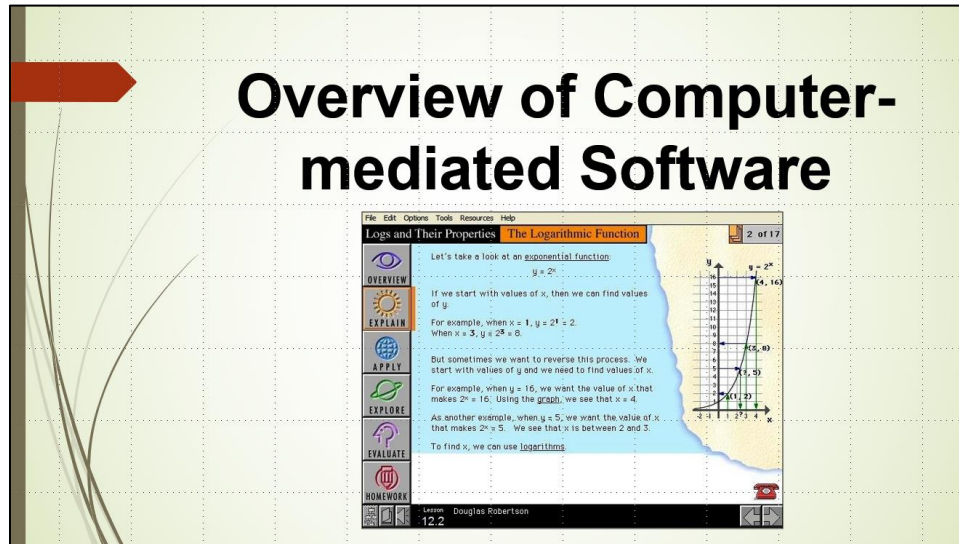
5. Position the title and picture as shown below:



d. Do the following to insert a graphic.

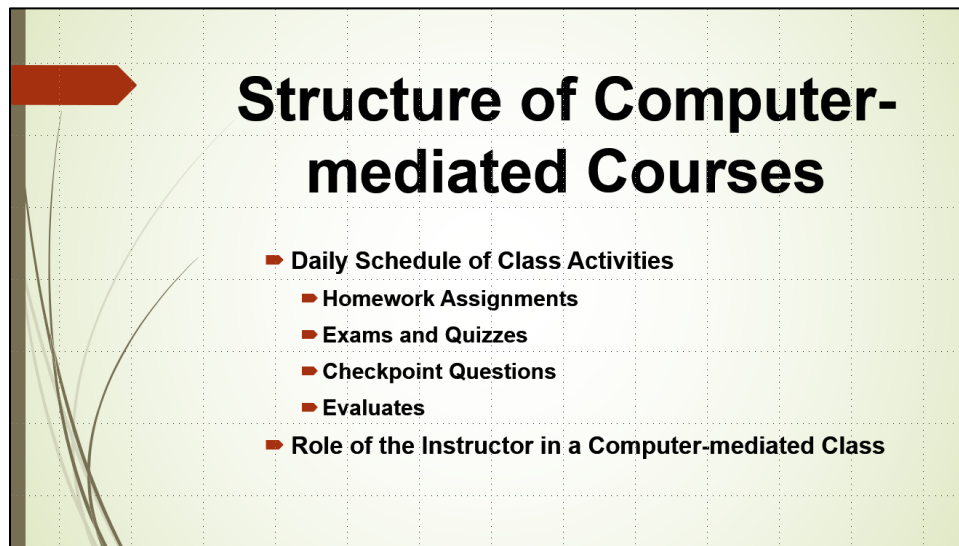
1. Click **Slide 2** and make the title 60 pt bold with center alignment.
2. Click a blank area of the slide to be sure the title is not selected. On the **Insert** tab, in the **Images** group, click **Pictures**.
3. Navigate to your **PowerPoint Files** folder and double-click the file **HW13-3c Math Sample Original.jpg**, which is one of the files you downloaded at the start of the term. The graphic will be inserted.
4. Make the height of the picture **4.4** inches.
5. Put a black border around the picture (**Picture Format**, **Picture Styles**, **Picture Border**).

6. Adjust the location of the picture so that **Slide 2** looks like this:




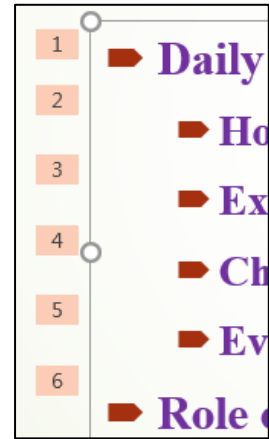
- e. Adjust and animate the bullets on **Slide 3** by doing the following:

1. Click **Slide 3** and make the title 60 pt bold with center alignment.
2. Click the textbox that contains the bullets and make the font 24 pt bold.
3. Make the four bullets **Homework Assignments, Exams and Quizzes, Checkpoint Questions, and Evaluates** subordinate to **Daily Schedule of Class Activities**. Adjust the textbox so it looks like the following:




4. On the **Animations** tab, in the **Advanced Animation** group, click **Animation Pane** to display it on the right side of the screen.
5. Click the border of the textbox that contains all the bullets. Set the bullets to enter using the **Appear** animation.

6. Notice that the four sub-bullets are set to enter when **Daily Schedule of Class Activities** enters (they all have the numeral  next to them). To make each individual bullet enter on its own mouse click, click the edge of the textbox to select all the bullets and then, on the **Animations** tab, in the **Timing** group, set the **Start box** to **On Click**. Now, all the entrance numbers are different, ranging from 1 through 6.



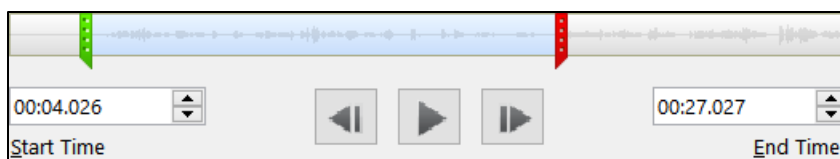
Mac: You may have to open the **Animations** pane and click the **Timing** arrow.

7. In the **Animation Pane**, click the arrow and select **Effect Options**.
 8. In the **After animation** box, choose the color **orange** and, in the **Animate text** box, select **All at once**. This will cause the color of a bulleted line to change to orange when the next bullet enters. This keeps the information on the screen and helps to focus the audience on the bullet that just entered.
 9. Click **OK**.
 10. Click the **Slide Show** button  to start the presentation from this slide and watch the animations as you click the mouse. Click **Esc** to stop the slide show.
- f. Delete **Slide 4 (Student Performance in Computer-mediated ...)**.
- g. Add a video by doing the following:
1. Make the new **Slide 4 (Trends in Computer-mediated Mathematics Instruction)** active, change the title to **Quadratic Transformations**, and make the title 60 pt bold with center alignment.
 2. Animate the title using the **Bounce** entrance (on the **Animations** tab, in the **Animation** group, click the **More** button, click **More Entrance Effects**, scroll down to **Exciting**, click **Bounce**, and click **OK**). Set the animation to enter by letter (use **Effect Options**) and set the **Start** box to **After Previous**. Then, deselect the title.

3. On the **Insert** tab, in the **Media** group, click **Video** and select **Video on my PC**. Navigate to your **PowerPoint Files** folder and double-click **HW13-3d Transformations Original**, which is one of the files you copied at the start of the semester. This video was made on an iPad by students in **CI 1806 College Algebra through Modeling** after a visit to the Weisman Art Museum on campus. They were looking for mathematical themes in visual art. The two faces look like parabolas (quadratic functions). It appears that the face on the right is a shift of the face on the left through a quadratic transformation.⁴⁷

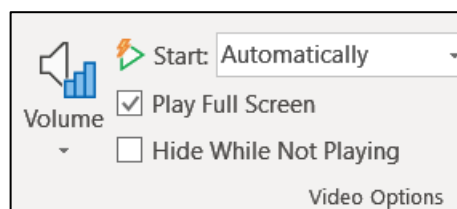
Mac: You can skip steps 4 and 5 below. I could not get it to work on my Mac. Microsoft says “On macOS, this feature is only available to Microsoft 365 subscribers.” I am not. <https://support.microsoft.com/en-us/office/trim-a-video-music-clip-or-sound-clip-in-powerpoint-1fc386f2-8404-43e8-9dbd-fee3a11a1d8f#Platform=Mac>


4. On the **Video Playback** tab, in the **Editing** group, click **Trim Video** and use the green slider to set the video to start at about 4 seconds and the red slider so that the video ends at about 27 seconds.



Click **OK**.

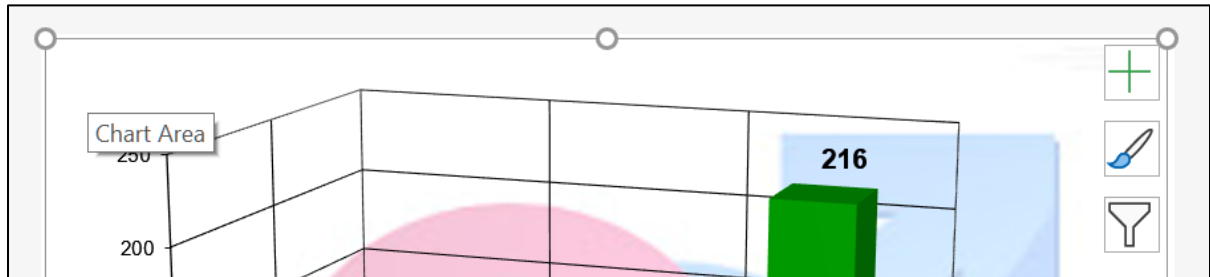
5. On the **Video Playback** tab, in the **Video Options** group, select **Start Automatically** and check **Play Full Screen** so the video fills the screen when played.



6. Make the height of the image 4 inches, center it under the title, and move it to just below the title.
 7. Click the **Slide Show** button  to start the presentation from this slide and watch the video. Tap **Esc** to exit the presentation.
- h. Do the following to insert a graph from Excel.
1. Display **Slide 5 (Instructional Models)** and change the title to **Preferences by Gender and Type**, and make the title 60 pt bold with center alignment. Then, deselect the title.
 2. Minimize PowerPoint and open the **PowerPoint Files** folder. Double-click the Excel file, **HW13-3e Gender Graph Original**, which is one of the files you downloaded at the start of the term. Even though it is an Excel file it is in the **PowerPoint Files** folder.

⁴⁷ If you are interested in the project, see Staats, S., Ernst, D., Berken, S. & Robertson, D., 2015. Investigating the mathematics of inaccessible objects: Algebra videos with iPads. Chapter for M. Meletiou-Mavrotheris, K. Mavrou & E. Paparistodemou (Eds). Integrating touch-enabled and mobile devices into contemporary mathematics education. IGI Global.

3. Select the graph by clicking near the upper left corner of the white area surrounding the graph.

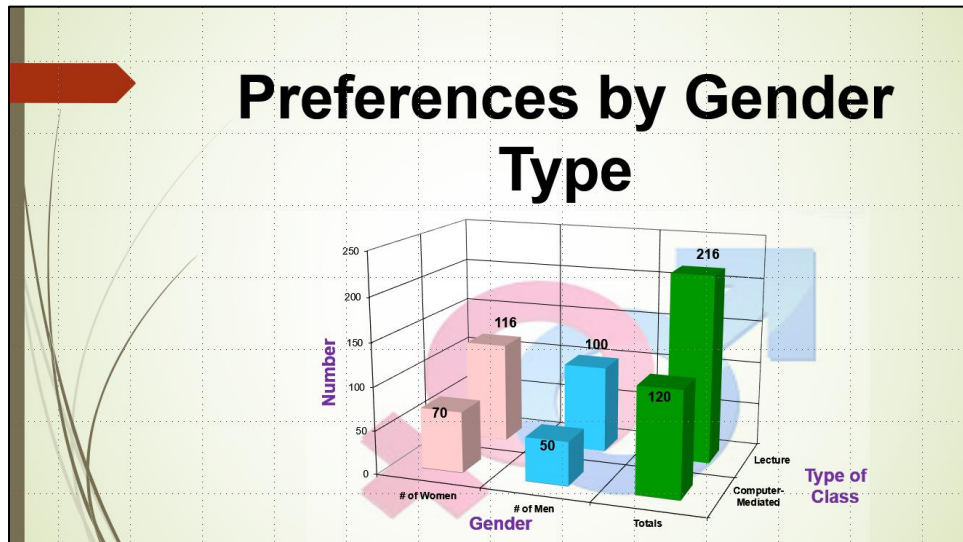


Tap **Ctrl + c** to copy the graph and then close Excel.

4. Switch back to PowerPoint and tap **Ctrl + v**. The graph is inserted.
5. Change the font of the three axis labels to 18 pt purple.
6. Change the color of the two columns for **Women** to pink and the two columns for **Men** to blue. You will have to do the columns one at a time. To select a single column, click it, wait a second, and then click it again. Then, on the **Chart Format** tab, in the **Shape Styles** group, click the **Shape Fill** arrow and select the color.

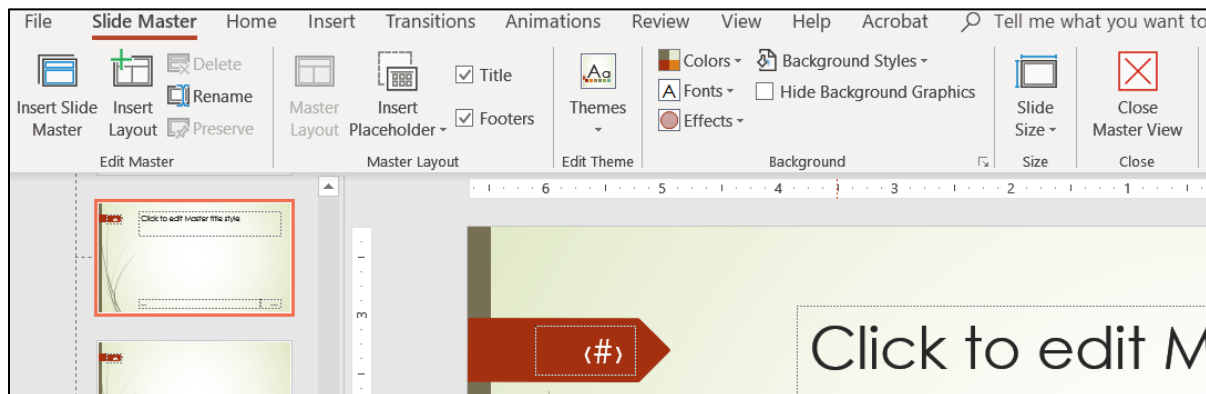
Mac: On the **Home** tab, click the **Drawing** arrow, and select the color.

7. Make the height of the chart **5** inches (**Chart Format**, on the left select **Chart Area**, and then, over on the right, change the **Height** to 5).
8. Position the title and graph so that the slide looks like the following:

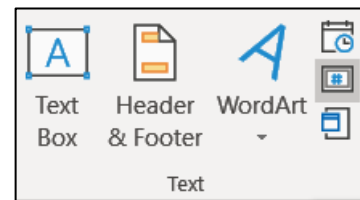


- i. There are times when you may want to set up all the slides with particular objects, like a company logo or page numbers or specific text. Doing that individually to each slide is time consuming for a large presentation. To help with that task, you can use a **Master Slide**, similar to what you did when fixing printing on page **SG336**. This is like a style in Word. When you edit the **Master Slide** (or a style in Word) every slide in the presentation is affected (just like every paragraph with that style is affected in Word). To see how this works, do the following:

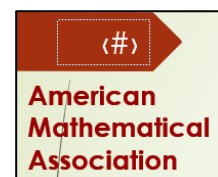
1. Click the thumbnail for **Slide 1**.
2. On the **View** tab, in the **Master Views** group, click **Slide Master**. This displays a new tab called **Slide Master** and displays the **Master Slide** and many different slide layouts.



3. Click the **Insert** tab and look in the **Text** group. Click **Slide Number**  and put a check in the box to the left of **Slide Number**.



4. Click **Apply to All** to insert the slide number on the **Master Slide**. The current position is inside the red arrow. It can be dragged to any location but, leave it where it is.
5. On the **Insert** tab, in the **Images** group, click **Pictures**, navigate to your **PowerPoint Files** folder, and insert **HW12-3c Goldy Original**.
6. The background of the image covers up the **Wisp** theme. You can remove the background, if you wish, as you did on page **SG345** (*this is optional*).
7. Make the image height 1 inch and move it to the lower right corner of the slide.
8. Insert a textbox, type **American Mathematical Association**, which is the organization that sponsored the conference where I made this presentation.
9. Make the font bold red and move the textbox to the upper left of the slide, just under the large red arrow. Adjust it to look like this:



I used modified versions of the full 60 slide presentation at two conferences, one for the **American Mathematical Association** and the other for the **National Council of Teachers of Mathematics**. Using the **Master Slide** feature, I was able to quickly change the organization name on all the slides when I went from one conference to the other.

10. On the **Slide Master** tab, in the **Close** group, click **Close Master View**.

11. Delete slides **6** through **10**.

j. Tap **F5** to run the slide show and marvel at your work. Notice that each slide has the slide number and the image of Goldy.

k. Tap **Ctrl + p** and set up to print a handout as follows:

- Has all five slides.
- Six slides horizontal per page, even though you only have 5 slides.
- Portrait orientation.
- Color.
- Date, updated automatically, in the format Day, Month Date, Year.
- Page number but no header.
- Name of the file in the footer.

Compare the preview with the key. Make needed corrections, save the presentation, and close it. Exit Word and Excel.

HW13-4 (Mis)-communication

Problem: How can images from the web be copied, modified, and inserted into a PowerPoint presentation and then have animations applied?

In my precalculus class, I talk about the importance of clear communication when solving problems and communicating the solutions to others. I created a slide as a humorous way of illustrating how one person can explain an obvious solution that is completely misinterpreted by his colleague.

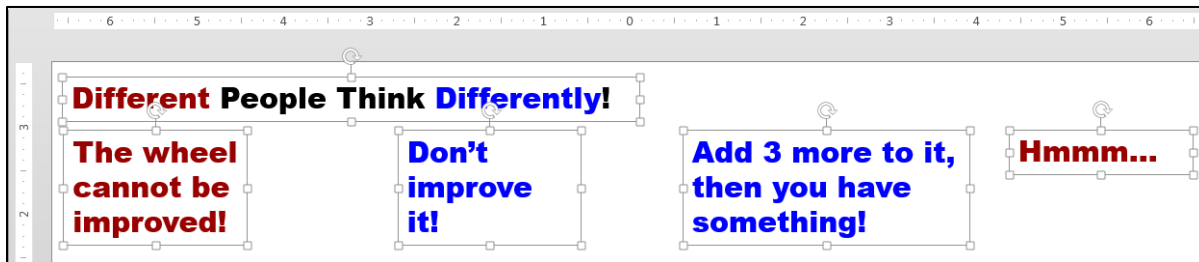
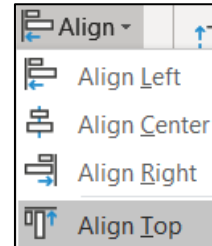
I started with the following BC comic, by Johnny Hart, that I downloaded from <http://www.tcj.com/johnny-hart-to-appear-b-c/hart-9/>



I used the **Snipping Tool** to copy the characters and pasted them in the slide. I wanted the text to be more readable, so I typed it into textboxes and made the font Arial Black. Finally, I added animations and sounds. To get some experience with this sort of process, do the following:

- a. Open a new blank PowerPoint presentation and set the **Layout** to **Blank**. Save the presentation to your **PowerPoint Files** folder using the name **HW13-4a HWID Communication Done**
- b. Insert textboxes, type the text shown below, make the font 24 point Arial Black, and position the textboxes as shown. You can quickly align the bottom 4 textboxes by selecting them and choosing **Drawing Format, Arrange, Align, Align Top**.

To help viewers keep straight who is talking, make the color of the left-most and right-most text red and the color of the text in the two center boxes blue.



- c. In your **PowerPoint Files** folder, double-click the JPEG file **HW13-4b Communication Image Original**. It may help to magnify the image by using the **Zoom** button at the top center of the window. Make the image as large as you can while keeping the quality at an acceptable level. If you make the image too large it will become pixelated and not look good.
- d. Copy the BC characters. Rather than doing a rectangular snip, you will need to do a free-style snip. Do the following:



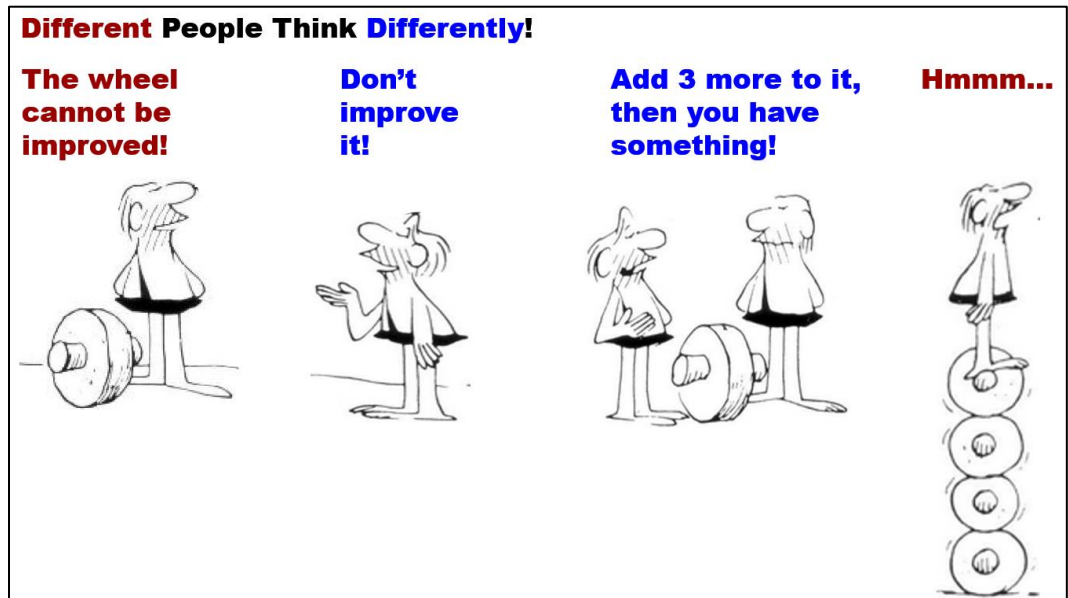
Mac: Double-clicking the file name will open it in **Preview**. In the **Preview** menu bar, click the **Show Markup Toolbar** icon (to the left of the **Search** box, it is a circle with a pencil point in it). Way over on the left of the toolbar, click the **Selection Tools** arrow and select **Lasso Selection**. A black cross will appear. Carefully drag around the figure of the man on the left and his wheel. A dotted line shows your path. This is a little tricky. Do your best but do not spend much time on it. Tap **Command + c** to copy the selection. Skip to step 4 below.



1. Tap the **Windows** key, type **snip**, and tap **Enter**. Under **Options**, be sure **Always copy snips to the Clipboard** is checked.
2. Click the **Mode** arrow and select **Free-form snip**. A scissors will appear. The "hot point" is where the blades cross.
3. Carefully drag around the figure of the man on the left and his wheel. A red line shows your path. This is a little tricky. Do your best but do not spend much time on it.

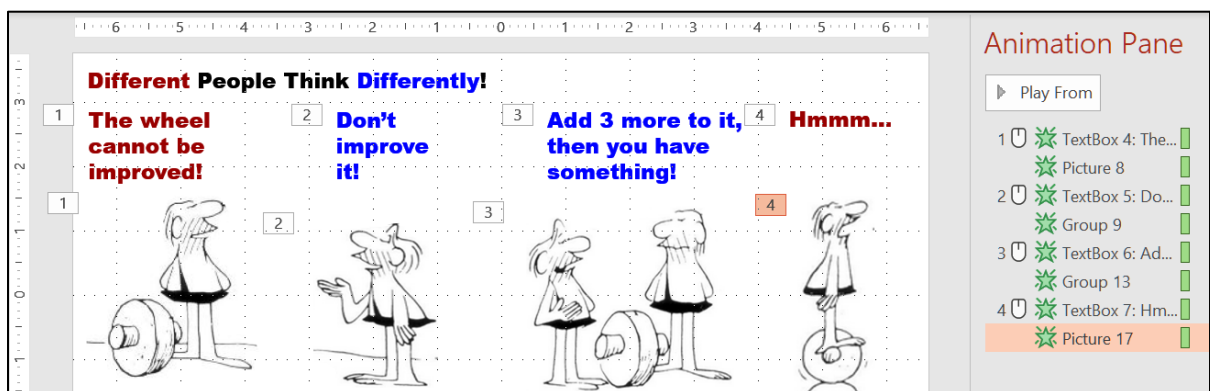


4. Paste the snip into the PowerPoint slide just below the word **improved!**
5. Follow the same procedure for the other three images. Arrange them as follows:

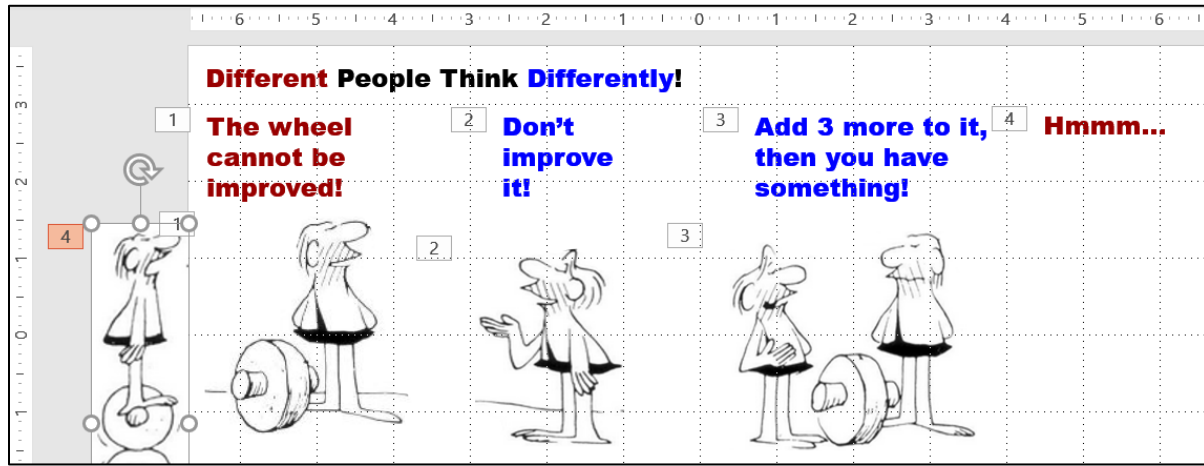



e. Insert animations by doing the following:

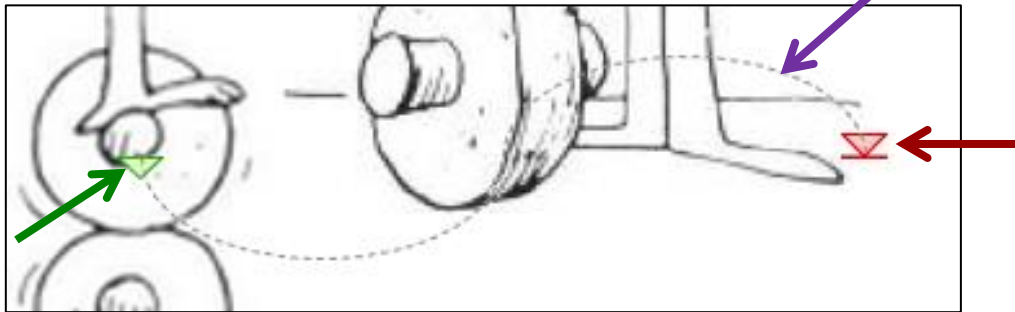
1. Select the box with the text **The wheel cannot be improved!**.
2. On the **Animations** tab, in the **Advanced Animation** group, click **Animation Pane**.
3. On the **Animations** tab, in the **Animation** group, click **Fade**.
4. Set the textbox to **Start: On Click**.
5. Select the image below **The wheel cannot be improved!**.
6. On the **Animations** tab, in the **Animation** group, click **Fade**.
7. Set the image to **Start: With Previous**.
8. Do the same for the three other pairs of textboxes and images.



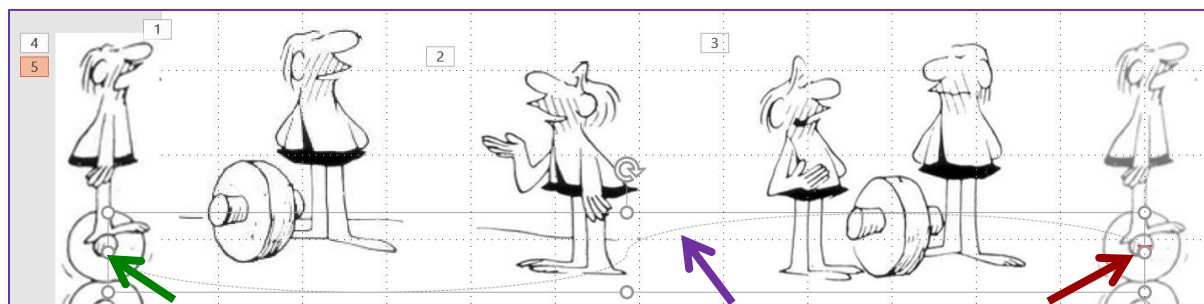
9. I wanted to have the last image appear on the left and travel across the screen until it is under **Hmmm...** To do this, drag the image under **Hmmm...** way over to the left and out of the slide. PowerPoint may resist you doing that so you may have to drag the image to the left, let up on the mouse button, and then drag the image left again. Repeat as needed.



10. With the image that has the four wheels still selected, on the **Animations** tab, in the **Advanced Animation** group, click the **Add Animation** arrow and select **More Motion Paths...**
11. Under **Lines and Curves**, select **S Curve 2** 
12. Click **OK**. The animation will start at the **green** triangle, follow the **S curve**, and end at the **red** triangle.



13. Drag the red triangle to the right until it is under the **Hmmm...** textbox. Set the animation to **Start: With previous**.



- f. Add sound effects by doing the following:
1. Click in a blank part of the slide. On the **Insert** tab, in the **Media** group, click the **Audio** arrow, select **Audio on my PC**. Navigate to your **PowerPoint Files** folder and double-click **HW13-4c Indy Car Pass Original**, which is one of the files you downloaded at the start of the semester.
 2. Drag the speaker icon down so it is below the images.
 3. On the **Audio Playback** tab, select **Start: Automatically** and put a check in the **Hide During Show** box.
 4. On the **Animation** tab, in the **Timing** group, select **Start With Previous**.
 5. Deselect the speaker icon.
 6. On the **Insert** tab, in the **Media** group, click the **Audio** arrow, select **Audio on my PC**. Navigate to your **PowerPoint Files** folder and double-click **HW13-4d Hmmm Original**, which is one of the files you downloaded at the start of the semester.
 7. Drag the speaker icon down so it just above the first speaker icon.
 8. On the **Audio Playback** tab, select **Start: Automatically** and put a check in the **Hide During Show** box.
- g. Tap **F5** to run the slide show and check that everything is working properly.
- h. So that I can see your animations do the following:
1. Open a new **Word** document and save it using the name **HW13-4e HWID Communication Word Done**
 2. Insert a footer that contains the name of the file.
 3. Switch to PowerPoint. Be sure the **Animations** tab is selected and the **Animation Pane** is showing. Use the **Snipping Tool** to copy to the clipboard the entire slide, including the rulers and **Animation Pane**.
 4. Switch to Word and paste the image. Put a black border around the image.
 5. Tap **Ctrl + p** and compare the preview with the key (they should be close, but not necessarily exact). Make needed corrections, save the document and close Word.
 6. Close PowerPoint and save the presentation.

OK, so now you know some ways to make your PowerPoint presentations flashy and, hopefully, more interesting. But, your message is the most important part so be sure to first figure out the message or facts you want your audience to leave with, then map out a talk that accomplishes your goal. Finally, consider adding animations, transitions, audio, video, and so on to liven up things. You want your audience to **pay attention**, to be surprised, to smile and nod and laugh at the right places and the extras can help with that.

HW13-5 Course Evaluation

Problem: How can you help to improve this course for future students?

During the last two weeks of the semester, you will be sent an email telling you that the web-based evaluation for this course is available. To access the evaluation, follow the directions in the email, or go to <https://srt.umn.edu/blue/>

The evaluation is only available until the last day of the semester (BEFORE finals) so you must complete it by then.

- a. If you do not want to fill out the evaluation, log into the site anyway so the system knows you were there and then exit without answering any of the questions.
- b. After you have exited from the course evaluation site, open Word and on separate lines type your four-character **HWID**, the date, the name of this homework problem **HW13-5 Course Evaluation**, and the words **I accessed the course evaluation web site**.
- c. Save the document using the name **HW13-5 HWID Course Evaluation Done** and close it.

Step 4 Submit Now, submit the following. The first three are handouts and the last two are Word files. Use these names for the pdf files:

HW13-1 HWID 3A Trails Done – This is a Handout

HW13-2d HWID Import from Word and Excel Done – This is a Handout

HW13-3b HWID Integration Done – This is a Handout

HW13-4e HWID Communication Word Done – This is from a Word file

HW13-5 HWID Course Evaluation Done – This is from a Word file

Create a pdf file of the output for each of the above, place them in a folder called **HW13 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW13 PowerPoint Chapter 3: Animation, Tables & Charts**.

Step 5 Backup Now would be a good time to backup your files.

Sample Exam Questions for PowerPoint

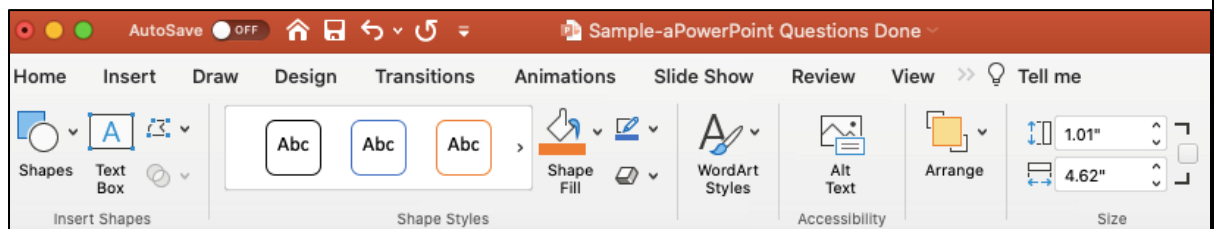
These sample questions will help you prepare for the PowerPoint exam. You will **NOT** submit these activities for grading. The solutions start on page **SG377**. The output keys are in this Study Guide, starting on page **SG430**.

- a. Start PowerPoint and open a new blank presentation.
- b. Save the file to your **PowerPoint Exam** folder using the name **Sample-a PowerPoint Questions Done**.

Slide 1

- c. Make the following changes to **Slide 1**.
 1. Change the layout to **Blank**.
 2. Insert a **WordArt** object. I used the orange **A** in the top row, but you can use any color you wish. Type the following text: **PowerPoint Sample Exam Questions**.

Mac: When you insert a **WordArt** object, the **WordArt** options will appear in the ribbon.



When you click outside the **WordArt** object to deselect it those options disappear. I cannot figure out how to get those options back without inserting a new **WordArt** object. Let me know if you figure it out!

3. Modify the text effect of the **WordArt** object so that it has the **Deflate Bottom** transform.
4. Make the text fill **purple**.
5. Make the font of the **WordArt** object **Arial Black** and the size **48 pt**.
6. Move the **WordArt** object to the top center of the slide.
7. Have the **WordArt** object enter **automatically** when the slide show begins. Use the **Fly In** animation. Have the object enter from the lower right corner.
8. Insert a textbox and, on separate lines, type your **FirstName**, **LastName**, and **HWID**.
9. Make the font **36 pt. Arial Black**.
10. Make the **space before** each line **12 pt**.
11. **Animate** the six lines of text you just typed so that they enter **one at a time**, in order, each time the mouse is clicked. Use the **Fly In** animation.

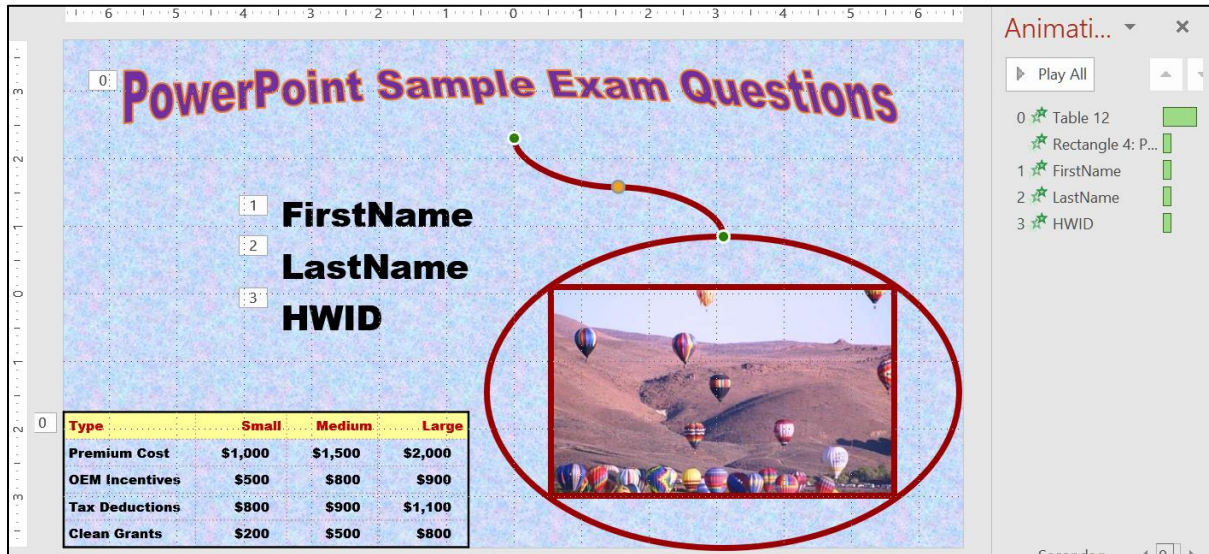


12. Set the animation so that each of the **6 lines of text is dimmed to purple** when the next bulleted line of text appears.
13. **Insert** the photo **Sample-b PowerPoint Balloons Original**, which is one of the files you downloaded at the start of the term.
14. **Crop** the bottom of the photo so that the trees are not visible.
15. Change the **height** of the photo to **3 inches** and the **width** to **5 inches**.
16. Place a **red border** around the photo and make the border weight **6 pt.**
17. **Insert** an **oval**. Make the **height 4.6 inches** and the **width 7 inches**.
18. Make the fill texture of the oval **Bouquet** texture and the border **6 pt. red**.
19. Send the oval **behind** the photo. **Center** the picture inside the oval.



20. **Group** the photo and the oval so they act as one object when moved.
21. **Move** the Photo/Oval to the **lower right corner** of the slide.
22. Set the background for this slide only to **Bouquet** texture fill.
23. In the **PowerPoint Files** folder, double-click the **Word** file **Sample-c PowerPoint Table Original** to open it. Copy the table. Do NOT copy the title or the text below the table.

Paste the table into the **PowerPoint** slide, keeping the **source formatting** of the table.
24. Make the **width** of the table **6 inches** and the **height 2 inches**.
25. Change the font to **14 pt.** and right-align the three columns on the right.
26. Move the table to the **lower left corner** of the slide.
27. Have the table enter with the **Swivel** animation **automatically** when the slide show begins. **Swivel** is under the **Subtle** category. Set the **Duration** (speed) to **Medium (2.0)**.
28. Insert a curved **connector** that connects the bottom of the **SmartArt** textbox to the top of the oval. If you drag the oval the connector should stay connected.

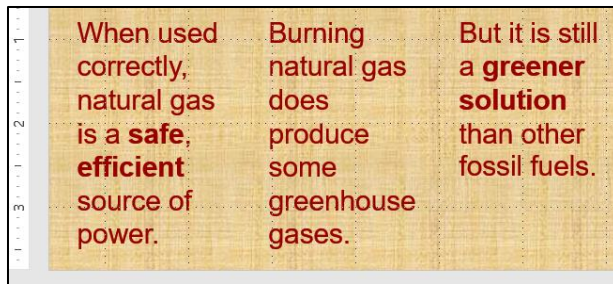


Slide 2

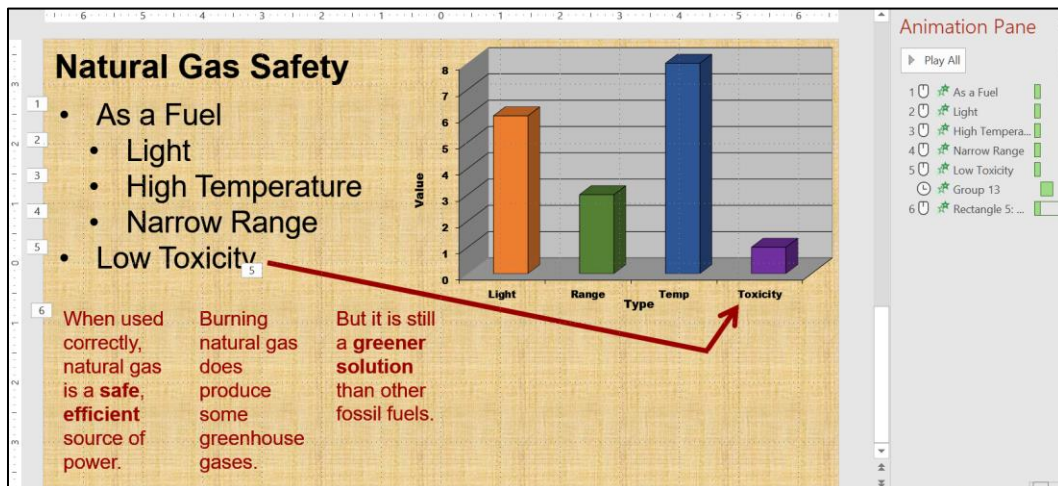
d. Create a new **Slide 2** and set it up by doing the following.

1. Insert a new slide and make the **Layout** blank.
2. Make the background of this slide **Texture** fill **Papyrus**.
3. Insert a textbox, type **Natural Gas Safety**. Make the font **Bold 40 pt. Arial**. Move the title to the **upper left corner** of the slide.
4. Insert a textbox. Type the following on separate lines: **As a Fuel, Light, Narrow Range, High Temperature, Low Toxicity**.
5. Change the text to **36 pt. Arial**.
6. Convert these five lines of text to a **bulleted list**.
7. Make **Light, Narrow Range**, and **High Temperature** subordinate to the first bullet, **As a Fuel**.
8. Move the line **High Temperature** so that it is between **As a Fuel** and **Light**.
9. Move the list so that it is under the title.
10. **Animate** all the bullets so they enter one at a time when the mouse is clicked. Use the **Fly In** animation.
11. Make each bulleted line **dim to purple** when the next bullet appears.
12. In the **PowerPoint Files** folder, double-click the **Word** file **Sample-c PowerPoint Table Original** to open it. Copy the text that is below the table. Do NOT copy the title or the table.
 Paste the text into the **PowerPoint** slide, keeping the **source formatting**.
 Make the font **24 pt. Arial**. Feel free to move the textbox so you can see it better.

13. Make the text in the box display in three columns. Make the spacing between the columns **0.4** inch.
14. Adjust the columns so they look like the following and then drag the textbox to the lower left corner of the slide.

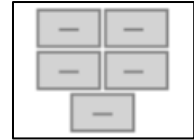
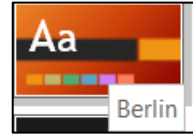


15. Have the text enter using the **Fly In** animation from the lower left corner and one letter at a time.
16. Open the **Excel** workbook **Sample-d PowerPoint Chart Original**, which is one of the files you downloaded at the start of the term.
17. Copy the chart and paste it into this slide.
18. Make the **height** of the chart **5** inches and the **width** **8** inches.
19. Move the chart to the **upper right corner** of the slide.
20. Insert a **straight line** and an **arrow** as shown below. Make their **weight** **6** pt. and color **red**.
21. Arrange the line and arrow as shown below and group them.
22. **Animate** the grouped line and arrow so that it enters after the last bullet enters. Use the **Spiral In** animation (under **Exciting**).





Slide 3

- e. Create a new **Slide 3** and set it up by doing the following.
1. Insert a new blank slide.
 2. Make the **Theme** of this slide **only Berlin**.
 3. Insert a **SmartArt** object that uses the **List** category and **Basic Block List** subcategory.
 4. Add the text shown below.
 5. Make the **fill** of each box **blue** and the font bold **Arial**.
 6. Animate the six textboxes so they enter, one by one, when the mouse is clicked. Use the **Fly In** animation.
- f. Use the **Push** transition when moving from slide 2 to slide 3.
- g. Click **Slide 1** and then view the slide show.



How to Solve the Sample Exam Questions for PowerPoint

Slide 1 – Solutions

- c1. On the **Home** tab, in the **Slides** group, click the **Layout** arrow and select **Blank**.
- c2. On the **Insert** tab, in the **Text** group, click the **WordArt** arrow and the orange **A** in the top row, or a different one. Type the text.
- c3. On the **Drawing Format** tab, in the **WordArt Styles** group, click the **Text Effects** arrow  click **Transform**, and select **Deflate Bottom**.
- c4. Select the text and, on the **Home** tab, in the **Font** group, select purple from the **Font Color** drop down menu.
- c5. On the **Home** tab, in the **Font** group, in the lower right corner, click the dialog box launcher  and change to size to **48**.



Mac: Click the **Format** menu, select **Font**, and change to size to **48**.

- c6. Drag the object to the **top center** of the slide.

- c7.** On the **Animations** tab, in the **Animation** group, click **Fly In**.

On the **Animations** tab, in the **Advanced Animation** group, click **Animation Pane**. The **Animation** pane will open on the right.

On the **Animations** tab, in the **Timing** group, click the **Start** arrow and select **With Previous**. That will make it start when the show starts.

On the **Animations** tab, in the **Advanced Animation** group, click the **Effect Options** arrow and select **From Bottom-Right**.

- c8.** On the **Insert** tab, in the **Text** group, click **Text Box**, move the cursor to anywhere on the slide, and drag the mouse to draw a **Text Box**. Then, type the 3 lines of text, one per line.
- c9.** Select the text you just typed and, on the **Home** tab, in the **Font** group, select **36 pt.** and **Arial Black**.
- c10.** With the text still selected, right-click, select **Paragraph**.

Mac: Click the **Format** menu and select **Paragraph**.

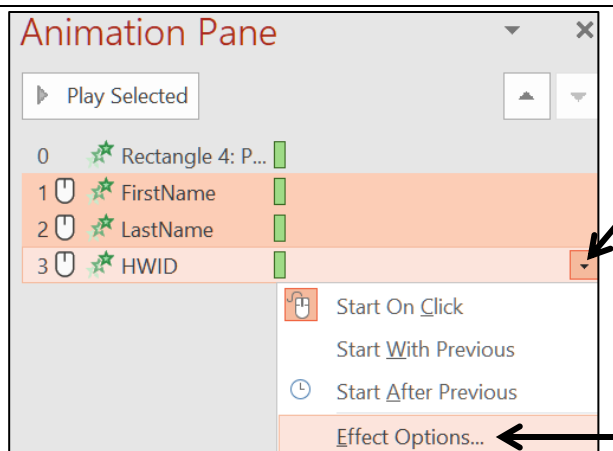
In the **Spacing** group set **Before** to **12 pt.** Click **OK**.

- c11.** With the text still selected, on the **Animations** tab, in the **Animation** group, click **Fly In**. Notice that the little numbers just to the left of each word are all set to 1. This means they will all enter all at the same time, so you need to change this.

On the **Animations** tab, in the **Timing** group, click the **Start** arrow and select **On Click**. Now the little numbers show 1, 2, 3, which means they will come in one at a time each time you click the mouse.

- c12.** With the text still selected, in the **Animation Pane**, click the arrow to the right of **3 HWID**.

Mac: There is no arrow. Just click the **3**



On the **Effect** tab, in the **Enhancements** group, click the **After animation** arrow and select **purple**. Click **OK**.

Mac: Click **More Colors**, which is just above **Don't Dim**.

c13. On the **Insert** tab, in the **Images** group, click **Pictures**. Navigate to your **PowerPoint Files** folder, Double-click **Sample-b PowerPoint Balloons Original**.

c14. With the picture selected, on the **Picture Format** tab, in the **Size** group, click the **Crop** arrow and select **Crop**.

Drag the bottom middle size handle  up until the trees are no longer visible. Click outside the photo.

c15. On the **Picture Format** tab, in the **Size** group, click the launch dialog button to show the **Format Picture** pane.

Uncheck **Lock aspect ratio** so you can change the height and width independently.

Type **3** in the **height** box and **5** in the **width** box.

Mac: To change the **Height** and **Width** independently you must first remove the check mark to the right of the **Height** and **Width** boxes.



c16. With the picture selected, on the **Picture Format** tab, in the **Picture Styles** group, click the **Picture border** arrow and select **red**. Then, click the **Picture border** arrow, click **Weight**, and select **6 pt**.

c17. On the **Insert** tab, in the **Illustrations** group, click the **Shapes** arrow and select oval. Move the cursor to a blank spot on the slide and drag the mouse.

On the **Drawing Format** tab, in the **Size** group, change the **height** to **4.6** inches and the **width** to **7** inches.

c18. On the **Drawing Format** tab, in the **Shape Styles** group, click the **Shape Fill** arrow, click **Texture**, and select **Bouquet**. Then, click the **Shape Outline** arrow and select **red**. Finally, click the **Shape Outline** arrow, click **weight**, and select **6 pt**.

c19. Right-click the oval, click **Send to Back** and select **Send to Back**.

Click the picture, hold down the **Shift** key, and click the oval. This selects both of them. On the **Drawing Format** tab, in the **Arrange** group, click the **Align** arrow, and select **Align Center**. Repeat but this time select **Align Middle**.

c20. With the picture and oval still selected, right-click, click **Group** and select **Group**.

c21. Drag the Photo/Oval group to the **lower right corner** of the slide.

- c22.** In a blank part of the slide, right-click, and select **Format Background**.

In the **Format Background** pane, click **Picture or texture fill**.

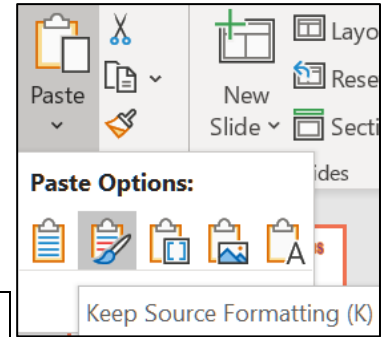
To the right of **Texture**, click the arrow and select **Bouquet**.

- c23.** In the **PowerPoint Files** folder, double-click the Word file **Sample-c PowerPoint Table Original** to open it.

Select the table, tap **Ctrl + c** to copy it, switch to PowerPoint, and click a blank spot anywhere on the slide.

On the **Home** tab, in the **Clipboard** group, click the **Paste** arrow and select **Keep Source Formatting (K)**.

- c24.** With the table selected, on the **Table Layout** tab, in the **Table Size** group, type **6** in the **width** box and **2** in the **height** box.




Mac: Grab the upper left size handle and drag until the height and width are correct. Get as close as you can – it need not be perfect.

- c25.** With the table selected, on the **Home** tab, in the **Font** group change the font type and size.

Select the three columns on the right. In the **Paragraph** group, click the **Right Align** button.

- c26.** With the table still selected, drag it to the **lower left corner** of the slide.

- c27.** With the table still selected, on the **Animations** tab, in the **Animation** group, click the **More** button  to open the **Animation** menu.

Click **More Entrance Effects**.

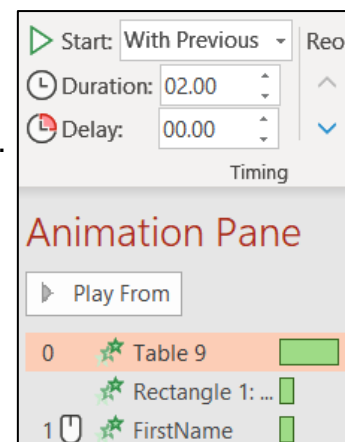
In the **Subtle** group, click **Swivel** and then **OK**.

On the **Animations** tab, in the **Advanced Animation** group, click **Animation Pane** to open it.

Select the **Start** box arrow and select **With Previous**. This automatically starts the animation when the slide show starts.

Type **2** in the **Duration** box.

In the **Timing** group, under **Reorder Animation** click **Move Earlier** until the **Table** is first.



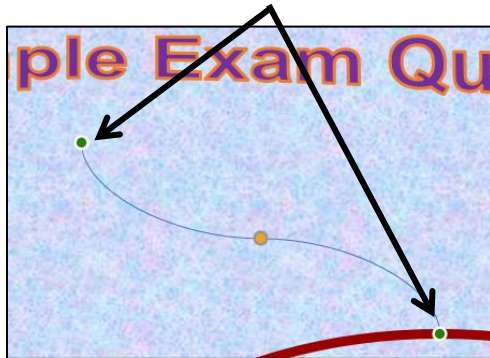
- c28.** On the **Insert** tab, in the **Illustrations** group, click the **Shapes** arrow and click **Curved Connector**.



A small cross will appear. Move the cross until it is on top of the gray dot just below the **I** in **Sample**.



Click, drag to the top of the circle, and click to draw the connector. The two ends should be green dots.



With the connector selected, on the **Drawing Format** tab, in the **Shape Styles** group, click the **Shape Outline** arrow and select **red**. Then, click the **Shape Outline** arrow again, click **Weight**, and select **6 pt**.

Tap **F5** to start the slide show. The **WordArt** and the **Table** should automatically appear. As you click the mouse, the bulleted items should appear, and then dim to purple when the mouse is clicked again.

Slide 2 – Solutions

- d1.** On the **Home** tab, in the **Slides** group, click the **New Slide** arrow and select **Blank**.

- d2.** Right-click a blank area of the slide and select **Format Background**.

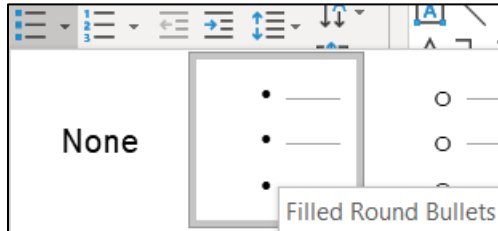
In the **Format Background** pane, click **Fill, Picture or texture fill**. A little way down to the right of the word **Texture**, click the arrow and select **Papyrus**.


- d3.** On the **Insert** tab, in the **Text** group, click **Text Box**, move the cursor to anywhere on the slide, and drag to draw a **Text Box**. Then, type **Natural Gas Safety**.

Select the text and, on the **Home** tab, in the **Font** group, make the font **Bold 40 pt. Arial**.

Select the textbox and drag it to the **upper left corner** of the slide.

- d4. On the **Insert** tab, in the **Text** group, click **Text Box**, move the cursor to anywhere on the slide, and drag to draw a **Text Box**. Then, type the phrases.
- d5. Select the text and, on the **Home** tab, in the **Font** group, change the text to **36 pt. Arial**.
- d6. With the text still selected, on the **Home** tab, in the **Paragraph** group, click the **Bullets** arrow and select **Filled Round Bullets**.



- d7. Select the bullets and, on the **Home** tab, in the **Paragraph** group, click the **Increase List Level** button  (**Indent More** on the **Mac**).
- d8. Click the bullet next to **High Temperature** and drag it up two lines.
- d9. Click the textbox outline and drag the list so that it is under the title. Make the textbox wider if necessary.
- d10. Select the lines of text and, on the **Animations** tab, in the **Animation** group, click **Fly In**. Notice that the little numbers just to the left of each word are all set to 1. This means they will all enter at the same time, so you need to change this.

On the **Animations** tab, in the **Timing** group, click the **Start** arrow and select **On Click**. Now the little numbers show 1, 2, 3, 4, 5, which means they will come in one at a time each time you click the mouse.


- d11. With the text still selected, in the **Animation Pane**, click the arrow to the right of **5 Low Toxicity** and select **Effect Options**.

On the **Effect** tab, in the **Enhancements** group, click the **After animation** arrow and select **purple**. Click **OK**.

- d12. Navigate to the **PowerPoint Files** folder and double-click the **Word** file **Sample-c PowerPoint Table Original** to open it.

Select the text below the table, tap **Ctrl + c** to copy it, switch to PowerPoint, and click a blank spot anywhere on the slide.

On the **Home** tab, in the **Clipboard** group, click the **Paste** arrow and select **Keep Source Formatting (K)**.

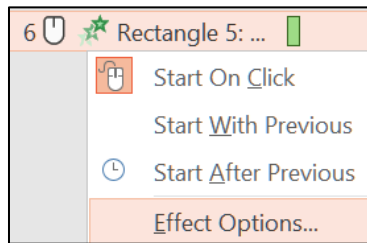
- d13. On the **Home** tab, in the **Paragraph** group, click the **Add or Remove Columns** arrow  and select **More Options**. Change the **Number** to **3** and the **Spacing** to **0.4**. Click **OK**.

d14. There is no **Column Break** as in Word so use the **Enter** key to make the three columns break as shown. You may have to adjust the size and location of the textbox to get the desired result.

d15. Select the textbox and, on the **Animations** tab, in the **Animation** group, click **Fly In**.

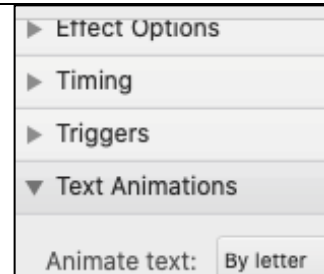
Click the **Effect Options** arrow and select **From Bottom-Left**.

In the animation pane, click the **Effect** arrow and click **Effect Options...**



Under **Enhancements**, next to **Animate text** select **By letter**. Click **OK**.

Mac: Do not click **Effect Options**. Rather, click the triangle next to **Text Animations**.



d16. Navigate to the **PowerPoint Files** folder and double-click the Excel workbook **Sample-d PowerPoint Chart Original**, which is one of the files you downloaded at the start of the term.

d17. With the chart selected, tap **Ctrl + c** to copy it. Switch to PowerPoint, click an empty part of the slide, and tap **Ctrl + v**.

d18. On the **Chart Format** tab, in the **Size** group, change the **height** of the chart to **5** inches and the **width** to **8** inches.

Mac: With the chart selected, double-click the edge to open the **Format Chart Area** pane. Click the **Size & Properties** button and type the height and width.

d19. Click the edge of the chart box and drag it.

d20. On the **Insert** tab, in the **Illustrations** group, click the **Shapes** arrow and select the straight line.


Click an empty part of the slide, click and drag to draw the line.

With the line still selected, on the **Drawing Format** tab, in the **Shape Styles** group, click the **Shape Outline** arrow, select **Weight** and then **6** pt. Select red for the color.

Repeat the process for an arrow.

- d21.** Click the line and move it to the proper position. Do the same for the arrow.

Click the line, hold down the **Shift** key, and click the arrow to select them both. Right-click, select **Group**, and select **Group** again.

- d22.** With the group selected, on the **Animations** tab, in the **Animation** group, click the **More** button, , to open its menu. Click **More Entrance Effects**.

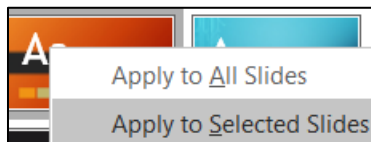
Scroll down to the **Exciting** group, click **Spiral In**, and click **OK**.

In the **Timing** group, select **After Previous** from the **Start** menu.

In the **Timing** group, click **Move Earlier** until the group is just below **Low Toxicity**.

Slide 3 – Solutions

- e1.** On the **Home** tab, in the **Slides** group, click the **New Slide** arrow and select **Blank**.
- e2.** On the **Design** tab, in the **Themes** group, click the **More** button, right-click **Berlin**, and select **Apply to Selected Slides**.



- e3.** On the **Insert** tab, in the **Illustrations** group, click **SmartArt**.
Click **List**, and then click **Basic Block List** subcategory.
Click **OK**.
- e4.** Type the text in the first five boxes. To add a box, right-click in the **Toyota** box, click **Add Shape**, click **Add Shape After**, and type **Honda**.



- e5.** Select the six textboxes by clicking on the edge of the **Ford** textbox, holding down the **Shift** key, and clicking the edges of the other five textboxes.

On the **SmartArt Format** tab, in the **Shape Styles** group, click the **Shape Fill** arrow, and select **blue**.

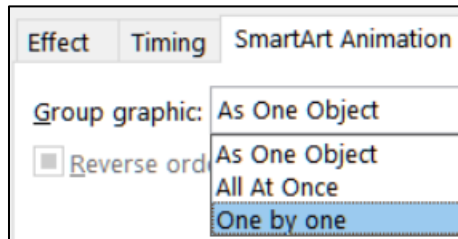
Mac: Click the **Format** menu and select **Format Object** to open the **Format Shape** pane. Click the triangle next to **Fill**, click **Solid fill**, and choose the color **blue**.

With the textboxes still selected, on the **Home** tab, in the **Font** group, change the font to bold **Arial**.

- e6. Select the six textboxes. On the **Animations** tab, in the **Animation** group open the **Animation Pane**.

Click the **Fly In** animation. The numeral **1** indicates that all the boxes will appear as a group.

To make the boxes appear one by one, in the **Animation Pane**, click the arrow next to **Diagram 1** and select **Effect Options**. Click the **SmartArt Animation** tab and, from the **Group graphic** box, select **One by one**.



Click **OK**. The numerals 1 through 6 indicate that the boxes will appear one after the next. Be sure that **Start** is set to **On Click**.



- f. On the **Transitions** tab, in the **Transition to This Slide** group, click **Push**.
- g. Tap the **F5** key to play the slide show.

For your reference, screenshots of the three slides showing the animation codes are on page **SG430**.

Information on the PowerPoint Exam

The third exam will cover only PowerPoint. You **may not submit** any PowerPoint homework on or after the day the exam is sent to you.

Date and Time: Check your syllabus for the date and time.

Location: On your own Windows or Macintosh computer.

Time Allowed: I will email the exam to you in the morning and you will have to upload your zipped solution folder to Canvas by the afternoon of the next day.

Materials: I will email you a pdf copy of the exam questions and the original files you are to modify.

Submission: You will submit your exam in the same way as you did for the homework except you will NOT send in pdf files. Instead, you will submit your modified PowerPoint files so that I can see your animations as well as the regular output. **Do the exam as soon as you get it.** Do not wait until the last minute. If you miss the submission deadline you will receive a score of 0.

Preparation: Be sure you have gone over the **Sample Exam Questions for PowerPoint** a few times before exam day. Be sure you have a reliable internet connection and computer. You may use either a Windows computer or a **Mac**. The exam will work on both platforms.

Questions: If you have questions during the exam, email me. Of course, I will not give you any help or hints, but if you think something is wrong with your copy of the exam let me know immediately.

Honesty: The exam is open book and notes, but you may NOT discuss the exam or get any help from anyone else or do the exam with anyone else. Doing so will result in your receiving a 0 for the exam and an F for the course.

Project 14

Access Chapter 1: Getting Started with Databases

Access Projects are optional. For Project 14 you may earn up to 40 extra credit points if you submit it for grading by the due date listed in your syllabus. The points earned will be added to your Homework score when final grades are calculated. Access is **not available for Mac** so **Mac** users will have to do it in a computer lab on campus or at a library.

If you have submitted HW06 for extra credit you may NOT get extra credit for doing HW14 or HW15.

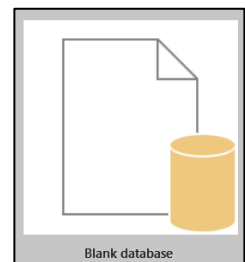
Step 1 Read Read the introductory material on page 519 of the textbook.

Step 2 Activities Turn on the computer and do the following:

Project 1A: Start at the top of page 521.

Instead of **Activity 1.02 step 2** (page 523) do the following:

1. Start Access and click **Blank database**.
2. Locate the **Browse folder** icon, which is just to the right of the **File Name** box.



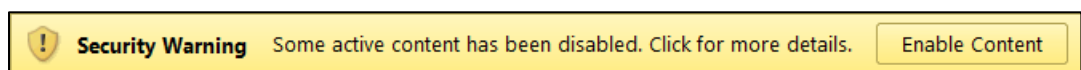
File Name
Database1 
\\ad.umn.edu\CEHD\Home\droberts\Documents\

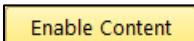
Click the **Browse folder** icon and navigate to your **Access Files** folder.

*You are not going to use sub folders (e.g., Access Chapter 1). Instead, so you can see them all at once, save all your Access files in the **Access Files** folder you downloaded on page **SG11**.*

3. In the **File Name** box, type **LastName_FirstName_1A_Advising**, where **LastName** is YOUR last name and **FirstName** is YOUR first name.
4. Click **OK**.
5. Click **Create**.

When you open a database, you might get the following Security Warning:



If that happens, click 

6. Complete the rest of the Activities for this Project EXCEPT do **NOT** do steps 3 and 4 in **Activity 1.17** on page 553.

7. **Return here** when you have completed Project 1A on page 553.

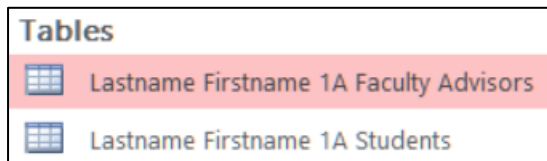
Do NOT do *GO! With Google*
Do NOT do *Project 1B*

Step 3 Homework After you have completed Project A **ONLY** return here, do the following additional activities.

HW14-1 Advising Database (Based on Project 1A)

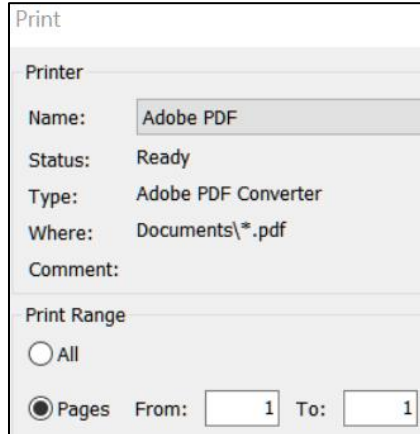
Problem: How can a database be designed and populated with data?

- Open the database **Lastname_Firstname_1A_Advising**, which you created while following the directions in the textbook and saved on page 553.
- Do the following to save the database to your **Access Files** folder under a new name:
 - Click the **File** tab and click **Save As**.
 - Be sure **Save Database As** is selected.
 - Click **Save As**.
 - Navigate to your **Access Files** folder.
 - In the **File name** box type **HW14-1a HWID 1A Advising Done**
 - Click **Save**. If you get a security warning, click **Enable Content**.
- Do the following to set up for submitting the two tables:



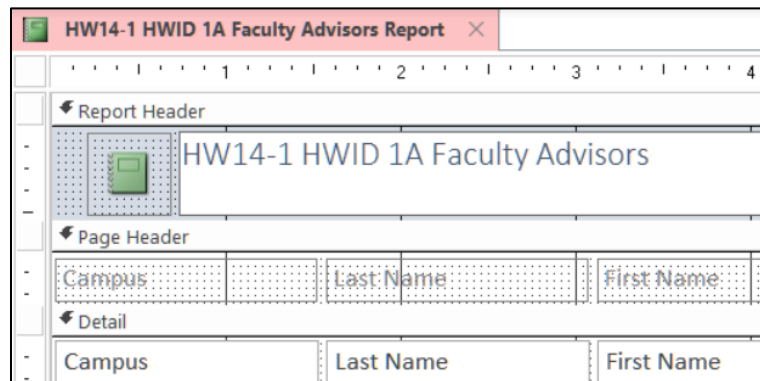
- Open the table **Lastname Firstname 1A Faculty Advisors**.
- Click the **File** tab, click **Print**, and then click **Print Preview**. Compare the preview with the key. You will submit only page 1 (of 3) so that is all that is shown in the key. On the **Print Preview** tab, in the **Close Preview** group, click **Close Print Preview**. Make needed corrections.

3. Click the **File** tab, click **Print**, and click **Print** to open the **Print** dialog box. In the **Name** box, select **Adobe PDF**. In the **Page Range** group click **Pages** and enter **1** in the **From** box and **1** in the **To** box.



4. Click **OK**. The **Save PDF File As** dialog box will open.
 5. In the **File name** box type **HW14-1b HWID 1A Faculty Advisors Table Page 1**. Be sure the **Save as type** box shows **PDF files (*.PDF)**.
 6. Click **Save**.
 7. Open the table **Lastname Firstname 1A Students** and follow the same procedure to save as a pdf file (there is only 1 page). Name the pdf file **HW14-1c HWID 1A Students Table Page 1**.
 8. Close both tables.
- d. Do the following to set up for submission the query, which you saved on page 547:
1. Right-click **LastName FirstName 1A All Students Query**, select **Rename**, and replace the name with **HW14-1 HWID 1A All Students Query**.
 2. Open the query.
 3. Follow the same procedure as you did for the tables to save as a pdf its first page. Name the pdf file **HW14-1d HWID 1A Students Query**.
 4. Close the query.
- e. Do the following to set up for submission the report, which you saved on page 552:
1. Rename **Lastname Firstname 1A Faculty Advisors Report** as **HW14-1 HWID 1A Faculty Advisors Report**.
 2. Open the report.
 3. Switch to **Design View**.

4. In the **Report Header** box, change the text to **HW14-1 HWID 1A Faculty Advisors**.



5. Follow the same procedure as you did for the tables to save as a pdf its first page. Name the pdf file **HW14-1e HWID 1A Faculty Advisors Report**.
6. Close the report.

f. Exit Access.

Step 4 Submit Now, submit the following **Extra Credit** projects. Remember, you may not get extra credit for **HW14** if you have already submitted **HW06** for extra credit. Use these names for the pdf files:

HW14-1b HWID 1A Faculty Advisors Table Page 1 – Print page 1 only

HW14-1c HWID 1A Students Table Page 1 – Print page 1 only

HW14-1d HWID 1A Students Query

HW14-1e HWID 1A Faculty Advisors Report

Place the pdf file of each of the above in a folder called **HW14 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW14 Access Chapter 1: Getting Started with Databases**.

Step 5 Backup Now would be a good time to backup your files.

Project 15

Access Chapter 2: Sort and Query a Database

Access Projects are optional. For Project 15 you may earn up to 40 extra credit points if you submit it for grading by the due date listed in your syllabus. The points earned will be added to your Homework score when final grades are calculated. Access is **not available for Mac** so **Mac** users will have to do it in a computer lab on campus or at a library.

If you have submitted HW06 for extra credit you may not get extra credit for doing HW14 or HW15.

Step 1 Read Read the introductory material on page 595 of the textbook.

Step 2 Activities Turn on the computer and do the following:

Project 2A: Start at the top of page 597.

Instead of **Activity 2.01 step 1** do the following:

1. Navigate to your **Access Files** folder and open **a02A_Instructors_Courses**, which is one of the files you downloaded at the start of the term
2. Save the file in your **Access Files** folder using the name **LastName_FirstName_2A_Instructors_Courses**
3. Complete the rest of the Activities for this Project EXCEPT do **NOT** do steps 9 and 10 in **Activity 2.16** on page 619.
4. **Return here** when you have completed Project 2A on page 619.

Do NOT do GO! With Google

Project 2B: When you have completed Project 2A, start at the top of page 623.

Instead of **Activity 2.17 step 1** do the following:

1. Navigate to your **Access Files** folder and open **02B_Athletes_Scholarships**, which is one of the files you downloaded at the start of the term.
2. Save the file in your **Access Files** folder using the name **LastName_FirstName_2B_Athletes_Scholarships**
3. Complete the activities through **Activity 2.24** on page 632.
4. **Return here** when you have completed **Activity 2.24** on page 632.

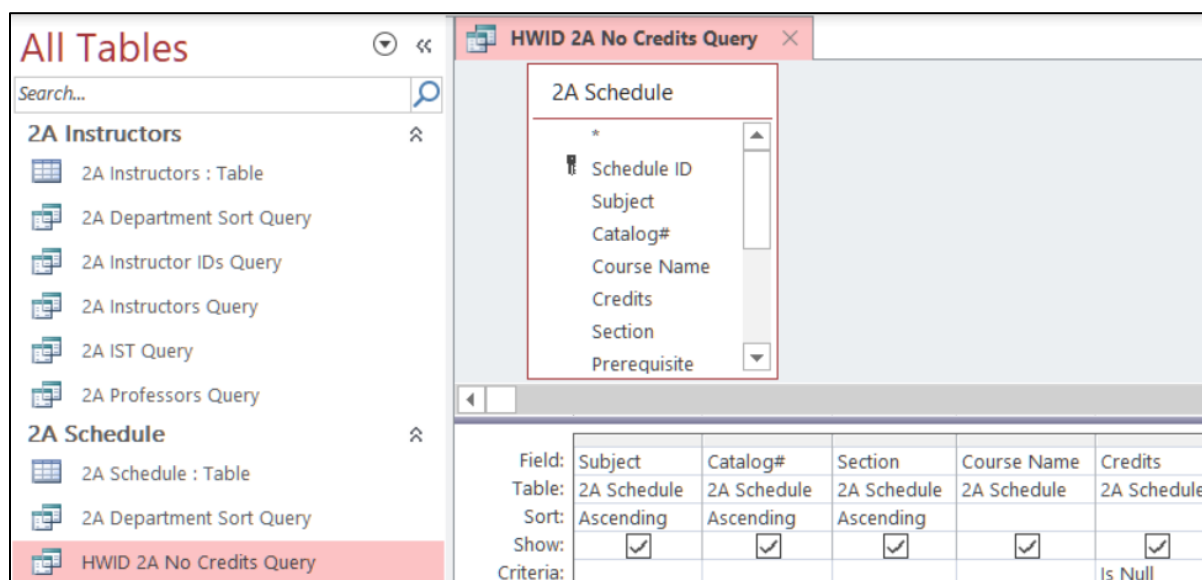
Do NOT do GO! With Google or GO! To Work

Step 3 Homework After you have completed Projects A and B, return here, do the problems listed below, and submit them. Remember, you may not get extra credit for HW15 if you have already submitted HW06 for extra credit.

HW15-1 Instructors and Courses (Based on Project 2A)

Problem: How can separate databases be linked and information extracted from each to answer questions concerning the data?

- Open the database **Lastname_Firstname_2A_Instructors_Courses**, which you created while following the directions in the textbook and saved on page 618.
- Save the database to your **Access Files** folder using the name **HW15-1a HWID 2A Instructors Courses Done**
- Take a screenshot that shows you did all the queries by doing the following:
 - Change the name of the **2A No Credits Query**, which you saved on page 618, to **HWID 2A No Credits Query**.
 - Open **HWID 2A No Credits Query** and switch to **Design View**.
 - While in **Design** view, use the **Snipping Tool** to take a screenshot that includes the **Navigation pane** and the **HWID 2A No Credits Query**.

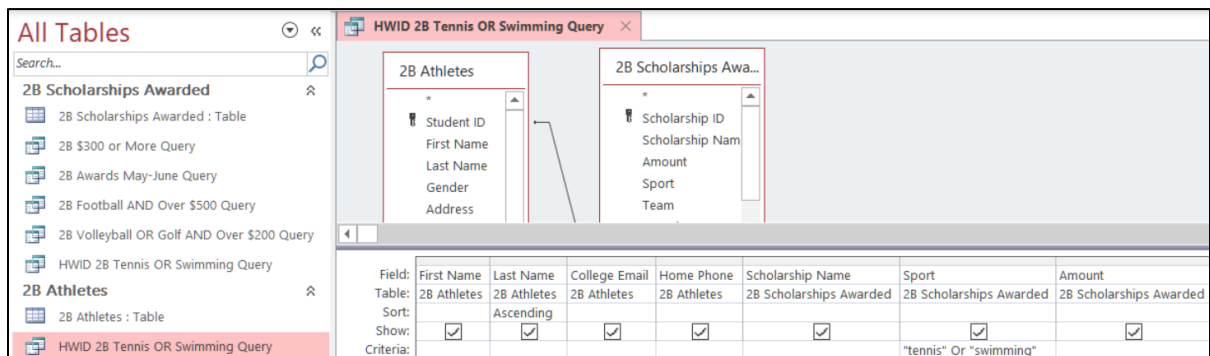


- Open a blank Word document, type **HW15-1a 2A No Credits Query, HWID**, and tap **Enter**.
- Paste the screenshot you just made and place a black border around it.
- Save the Word document as **HW15-1b HWID 2A No Credits Query Done** to your **Access Files** folder.
- In the footer, insert a field for the file name, tap the **Spacebar**, type **saved on**, tap the **Spacebar**, and enter a field for the date it was saved.
- Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.
- Exit Access.

HW15-2 Athletes Scholarships (Based on Project 2B)

Problem: How can complex queries be designed and applied to linked databases in order to answer specific questions?

- Open the database **Lastname_Firstname_2B_Athletes_Scholarships**, which you created while following the directions in the textbook and saved on page 632.
- Save the database to your **Access Files** folder using the name **HW15-2a HWID 2B Athletes Scholarships Done**
- Take a screenshot that shows you did all the queries by doing the following:
 - Open **2B Tennis OR Swimming Query**, which you created while following the directions in the textbook and saved on page 631.
 - Rename the query **HWID 2B Tennis OR Swimming Query**.
 - Open **HWID 2B Tennis OR Swimming Query** and switch to **Design View**.
 - While in **Design** view, use the **Snipping Tool** to take a screenshot that includes the **Navigation pane** and the **HWID 2B Tennis OR Swimming Query**.



- Open a blank Word document, type **HW15-2b 2B Tennis or Swimming Queries, HWID**, and tap **Enter**.
- Paste the screenshot you just made and place a black border around it.
- Save the Word document to your **Access Files** folder using the name **HW15-2b HWID 2B Tennis or Swimming Queries Done**
- In the footer, insert a field for the file name, tap the **Spacebar**, type **saved on**, tap the **Spacebar**, and enter a field for the date it was saved.
- Tap **Ctrl + p** and compare the preview with the key. Make needed corrections, save the document, and close it.

- d. The textbook showed you how to import data from an Excel worksheet into an Access table. Data may also be exported from an Access table or query to an Excel worksheet using the **Export** command. To see how this works, export one of your queries to an Excel worksheet by doing the following:
1. Open **2B \$300 or More Query**, which you created while following the directions in the textbook and saved on page 627.
 2. On the **External Data** tab, in the **Export** group, click **Excel**.
 3. Click the **Browse** button, navigate to your **Access Files** folder, and save the workbook using the name **HW15-2c HWID 300 or More Query Excel Done**.
 4. Click **Save**.
 5. Check the box next to **Export data with formatting and layout**.

6. Click **OK**. Click **Close** without checking the save steps box.
- e. Set up for submitting the Excel workbook you just created.
1. Open the Excel workbook **HW15-2c HWID 300 or More Query Excel Done**
 2. **AutoFit** the columns.
 3. Set up the workbook to print in **Portrait** orientation, all on **one page**, **centered horizontally** but not vertically. Include a footer that contains the **file name** on the left and the **sheet name** on the right. Compare the preview with the key. Make needed corrections, save the workbook, and close it.
- f. Set up for submitting the **2B Awards May-June Query**:
1. Open the query **2B Awards May-June Query**.
 2. Click the **File** tab, click **Print**, and then click **Print Preview**. Compare the preview with the key. On the **Print Preview** tab, in the **Close Preview** group, click **Close Print Preview**. Make needed corrections.

3. Click the **File** tab, click **Print**, and click **Print** to open the **Print** dialog box. In the **Name** box, select **Adobe PDF**.
 4. Click **OK**. The **Save PDF File As** dialog box will open.
 5. In the **File name** box type **HW15-2d HWID 2B Awards May-June Query Done**. Be sure the **Save as type** box shows **PDF files (*.PDF)**.
 6. Click **Save**.
- g. Exit Access.

Why use Access?⁴⁸

Now that you have extensive knowledge of Excel, and a bit of knowledge about Access, you can see how they can do similar things. So, with Excel being so powerful and “easy” to use, why do so many businesses and institutions use Access?

Access helps you manage and manipulate data more effectively and efficiently than Excel. A spreadsheet app is good for small sets of data, but it is not suited for handling tens of thousands of records or where data are stored in multiple locations. For example, Excel is ideal for me to keep track of my students' scores because I have only about 120 students per semester. However, if I wanted to look at trends for homework, or performance on the Excel exam, or whatever, over the 25 years I have been teaching the course I would have to use Access because it would allow me to connect (form relationships between) the 50 gradebooks I have used.

As another example, think of the information the University keeps on each of its 50,000 current students and millions of students who have attended the U over its 170 year history. The data include things like name, address, phone, email, high school data, courses taken, health care used, employment, salaries, benefits, etc. Using Access, each of those attributes can be stored in separate databases and all linked through your U of M ID number as the “primary field.” It would be easy to write queries to look for trends. For example, a simple query could generate a report that shows graduation trends of female Hispanic students between the ages of 18 and 22 who went to high school in South Dakota. Excel could not do that.

While you are in school, you probably will not have to manage or analyze huge sets of data so Excel will probably be your best bet. Once you enter the workforce you most likely will find that your knowledge of Access will come in handy.

Two of the major benefits of using a database are:

Fewer errors and inconsistencies. Maintaining one version of data minimizes the potential for duplication, errors, and inconsistent values (e.g., equivalent names such as William, Will, Willy, Bill, Billy).

⁴⁸ Adapted from <http://www.opengatesw.net/ms-access-tutorials/What-Is-Microsoft-Access-Used-For.htm>

Higher productivity. Using Access, you need only change a single record and all other related data in your database will automatically "see" the change. In Excel, you would need to change every occurrence of, say, a customer's name. Find and replace wouldn't necessarily catch that a customer's name is spelled six different ways. In a database, there is only one customer record to change. Every other record (orders, contacts, etc.) that relates to that customer record will never need to change because they are joined to the customer through a one to many relationship.

Step 4 Submit Now, submit the following **Extra Credit** projects. Remember, you may not get extra credit for **HW15** if you have already submitted **HW06** for extra credit. Use these names for the pdf files:

HW15-1b HWID 2A No Credits Query Done – This is a Word Doc

HW15-2b HWID 2B Tennis or Swimming Queries Done – This is a Word Doc

HW15-2c HWID 300 or More Query Excel Done – This is an Excel Doc

HW15-2d HWID 2B Awards May-June Query Done

Place the pdf file of each of the above in a folder called **HW15 HWID LastName, FirstName**, zip the folder and, by the due date, upload it to the Canvas folder **HW15 Access Chapter 2: Sort and Query a Database**.

Step 5 Backup Now would be a good time to backup your files.

Keys for Homework Projects

HW01-1 HWID Practice Save Done

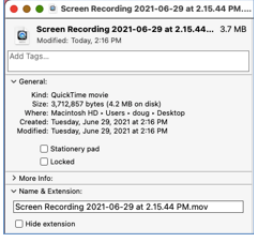
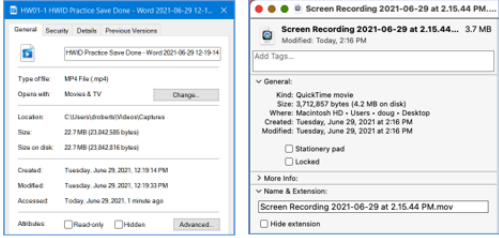
This file belongs to FirstName LastName HWID
abcd1234@umn.edu

I am using a XXX computer.
I am using the YYY textbook.

1871 Excel exam is due on DATE at or before TIME.
1871 Word exam is due on DATE at or before TIME.
1871 PowerPoint exam is due on DATE at or before TIME.

Below is a screenshot of the video I made:

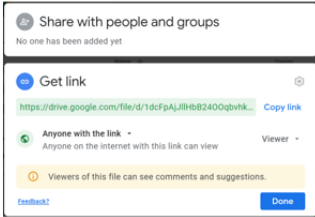
Your output should have ONE of the following screenshots.



↑
Screenshot from PC **OR** **Screenshot from Mac**

HW01-2 HWID Google Drive Done

HW01-2 HWID



HW01-3 HWID-c Compressed Files Done

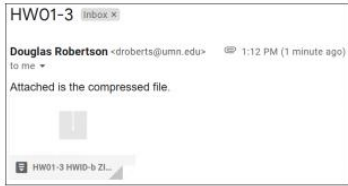
Screens will vary a bit for these three projects.

HW01-3 HWID

HW01-3 [Inbox](#)

Douglas Robertson <droberts@umn.edu> 1:12 PM (1 minute ago) to me

Attached is the compressed file.

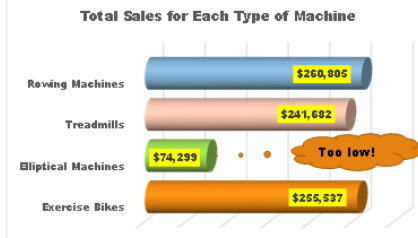
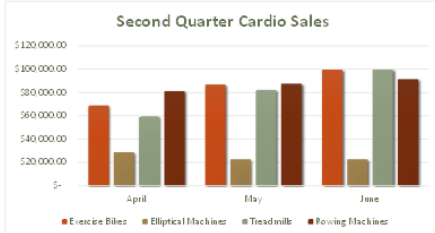


HW02-1 HWID 1A Quarterly Sales Done (Data)

HW02-1 HWID 1A Quarterly Sales Done (Formulas)

Pro Fit Marietta
Second Quarter Cardio Sales

	April	May	June	Total	Trend
Exercise Bikes	\$ 68,991.12	\$ 86,894.82	\$ 99,650.58	\$ 255,536.52	
Elliptical Machines	28,836.00	22,634.23	22,828.78	74,299.01	
Treadmills	59,519.78	82,337.98	99,823.87	241,681.63	
Rowing Machines	81,267.17	87,867.50	91,669.98	260,804.65	
Total	\$ 238,614.07	\$ 279,734.53	\$ 313,973.21	\$ 832,321.81	



	A	B	C	D	E	F
1	Pro Fit Marietta					
2	Second Quarter Cardio Sales					
3		April	May	June	Total	Trend
4	Exercise Bikes	68991.12	86894.82	99650.58	=SUM(B4:D4)	
5	Elliptical Machines	28836	22634.23	22828.78	=SUM(B5:D5)	
6	Treadmills	59519.78	82337.98	99823.87	=SUM(B6:D6)	
7	Rowing Machines	81267.17	87867.5	91669.98	=SUM(B7:D7)	
8	Total	=B4+B5+B6+B7	=C4+C5+C6+C7	=SUM(D4:D7)	=SUM(B8:D8)	

Mac will not have Goldie.

HW02-1 HWID 1A Quarterly Sales Done

Data

HW02-1 HWID 1A Quarterly Sales Done

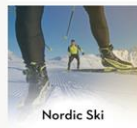
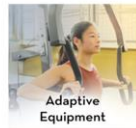
Formulas

HW02-2 HWID 1B Plyo Products Done

Pro Fit Marietta
Plyometric Products Inventory Valuation
As of September 30

	Warehouse Location	Quantity in Stock	Retail Price	Total Retail Value	Percent of Total Retail Value
Power Hurdle	Atlanta	125	\$ 32.95	\$ 4,118.75	1.41%
Speed Hurdle	Atlanta	995	59.95	59,650.25	20.37%
Stackable Steps	Marietta	450	251.59	113,215.50	38.65%
Pro Jump Rope	Marietta	1,105	49.95	55,194.75	18.84%
Plyometric Box Set	Marietta	255	158.05	40,302.75	13.76%
Plyometric Mat	Atlanta	215	94.99	20,422.85	6.97%
Total Retail Value for All Products				\$ 292,904.85	

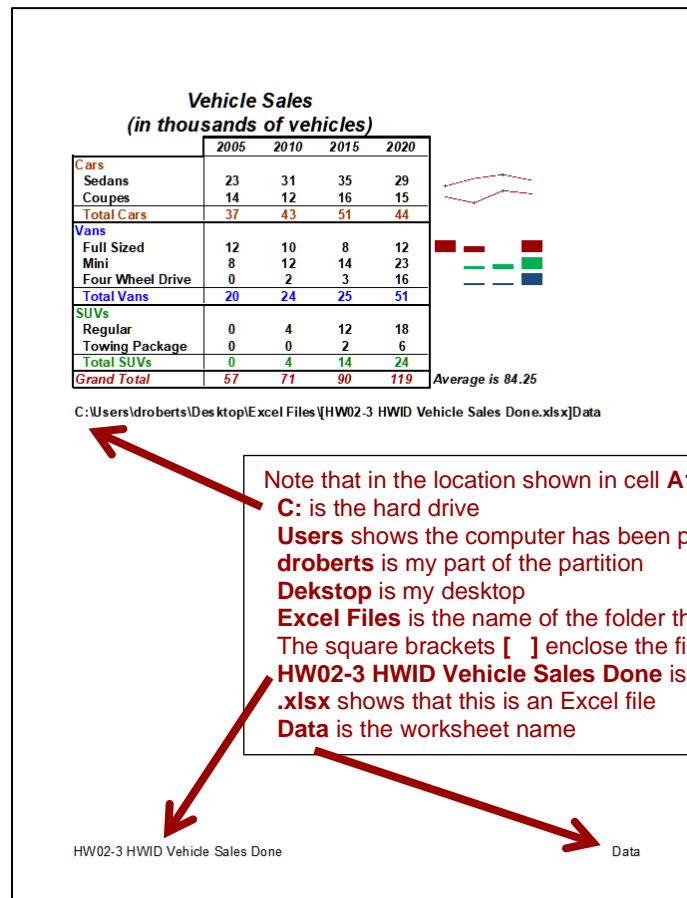
University Recreation and Wellness Center is a great place to work out
For more information see <https://recwell.umn.edu/>



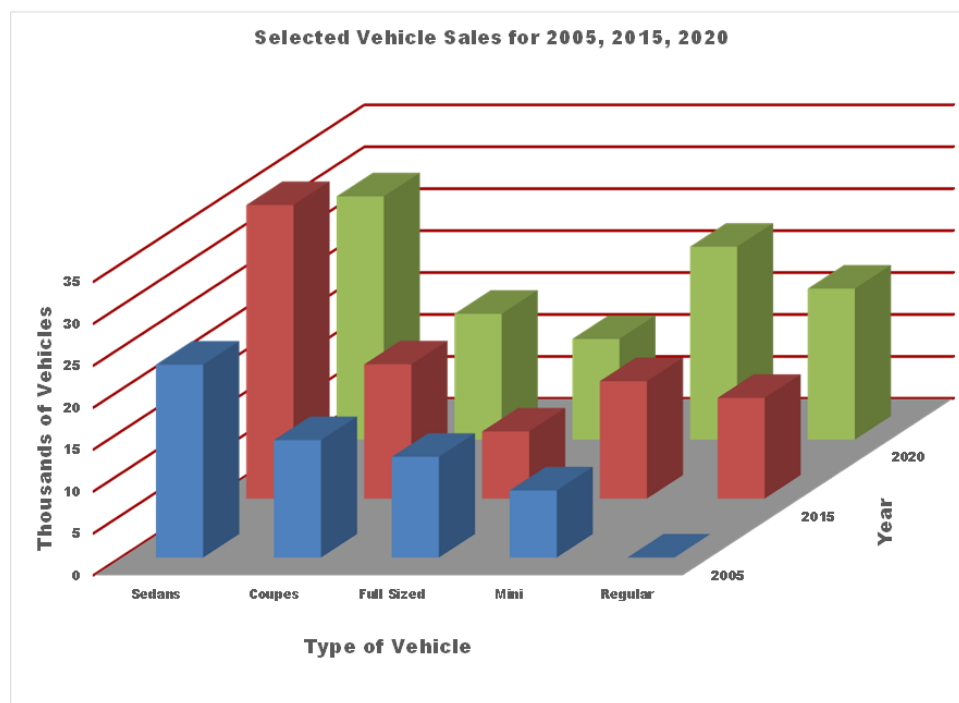
HW02-2 HWID 1B Plyo Products Done

Data

HW02-3 HWID Vehicle Sales Done (Data)



HW02-3 HWID Vehicle Sales Done (3-D Column Chart)



HW02-3 HWID Vehicle Sales Done

3-D Column Chart

HW03-3 HWID 2G Inventory Done (Bulbs)

Pasadena Facility: Inventory Status of Bulbs
As of December 31

Total Items in Stock 2,847
Average Price \$ 8.99
Median Price \$ 8.42
Lowest Price \$ 4.75
Highest Price \$ 16.58



Tulip Types 5 Tulip Total using SUMIFS
Tulip Total Quantity 433
Tulip Average Price \$ 11.43
Douglas Robertson:
Used SUMIFS

Quantity in Stock	Item #	Item Name	Retail Price	Size	Category	Stock Level
78	1239	Exotic	10.98	18"	Daffodils	OK
88	1245	Bel Song	7.45	18"	Daffodils	OK
109	1285	Haley Jane	8.58	12"	Dahlias	OK
49	1294	Yellow Hoop	6.98	18"	Daffodils	Order
175	1305	Split Crown	4.75	18"	Daffodils	OK
128	1354	Contessa	7.89	12"	Dahlias	OK
55	1365	Jonquilla	6.89	18"	Daffodils	Order
165	1368	Butterfly Mix	8.25	25"	Gladiolus	OK
136	1379	Fringed Mix	12.99	15"	Begonias	OK
49	1389	Decorative Glory	6.98	12"	Dahlias	Order
222	1425	Mon Amour	7.58	25"	Gladiolus	OK
56	1436	Topmix Yellow	5.95	12"	Dahlias	Order
165	1452	Campanella	5.25	18"	Daffodils	OK
123	1453	Apollodora Elite	11.25	10"	Tulips	OK
89	1454	Stars Lady	8.59	12"	Dahlias	OK
126	1454	Pendula Cascade	9.89	15"	Begonias	OK
52	1454	Zantedeschia Mix	10.95	20"	Callias	Order
75	1463	Manley	7.85	18"	Daffodils	OK
25	1465	Goldstick	9.59	10"	Tulips	Order
42	1465	Topmix Color	7.52	12"	Dahlias	Order
49	1468	Blottiana White	4.99	20"	Callias	Order
52	1469	Multiflora	9.89	15"	Begonias	Order
70	1478	Narcissa Mixed	9.98	18"	Daffodils	Order
129	1482	Nathalie	16.58	25"	Gladiolus	OK
255	1482	Morning Gold	7.85	25"	Gladiolus	OK
75	1489	Maureen	12.85	10"	Tulips	OK
135	1489	Purple Flag	14.85	10"	Tulips	OK
75	1498	Passionate	8.59	10"	Tulips	OK

HW03-3 HWID 2G Inventory Done

Bulbs

HW03-3 HWID 2G Inventory Done (Summary)

Pasadena Inventory Summary
As of December 31

	Bulbs	Trees
Total Items in Stock	2,847	3,503
Average Price	\$ 8.99	\$ 33.43
Median Price	\$ 8.42	\$ 35.50
Lowest Price	\$ 4.75	\$ 8.00
Highest Price	\$ 16.58	\$ 65.00

Bulbs Category	Number in Stock	Number of Categories	Average Price
Begonias	314	3	\$ 10.92
Callias	101	2	\$ 7.97
Daffodils	755	8	\$ 7.52
Dahlias	473	6	\$ 7.59
Gladiolus	771	4	\$ 10.07
Tulips	433	5	\$ 11.43

Trees Category	Number in Stock	Number of Categories	Average Price
Evergreens	583	4	\$ 10.75
Flowering Trees	414	3	\$ 25.67
Fruit Trees	328	3	\$ 37.33
Nut Trees	918	10	\$ 43.50
Shade Trees	1260	8	\$ 33.63

HW03-3 HWID 2G Inventory Done

Summary

HW03-4 HWID Payroll IF Done

Payroll

Date Modified: Fri 18 Jun 2021
Time Modified: 2:01 PM
Current Date: Sun 11 Jul 2021
Current Time: 3:52 PM

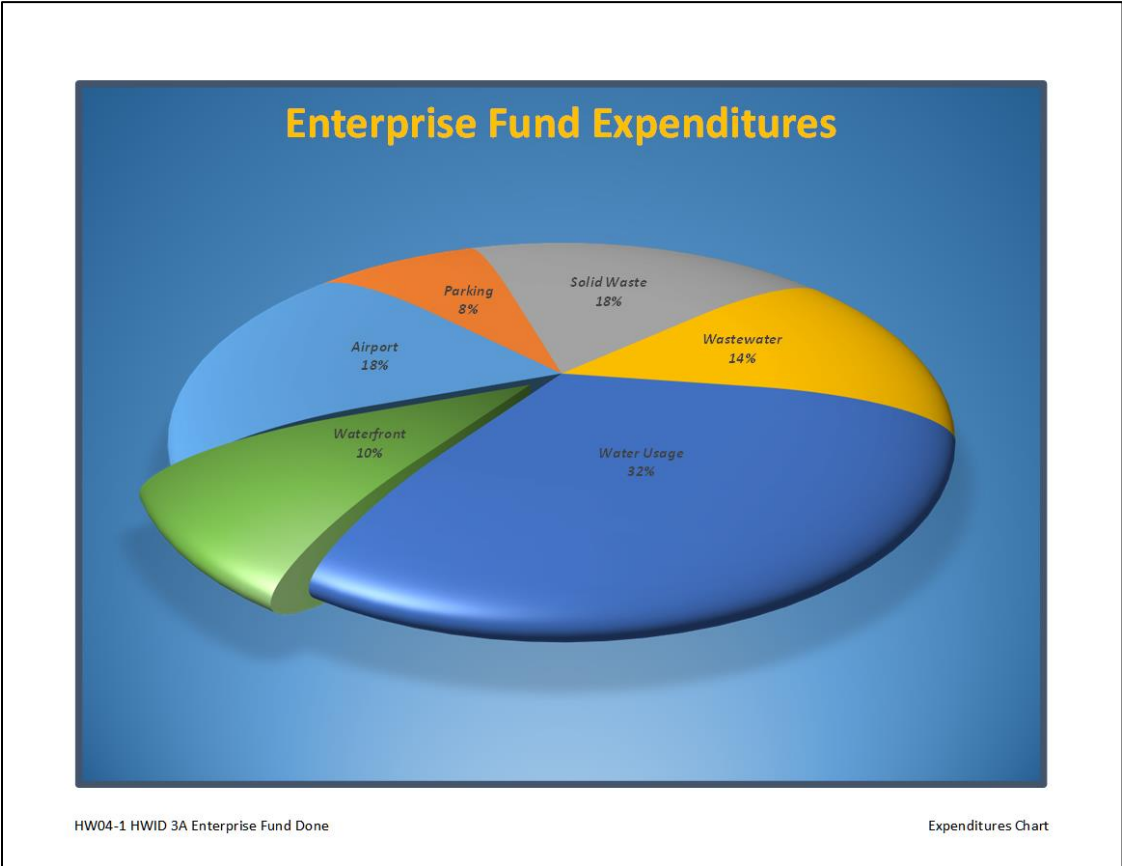
Number of people who earned overtime pay = 7 people
Number of women who earned overtime pay = 6 women
Sum of Total Pay for people who worked overtime = \$ 1,597.50
Total hours for men whose pay rate is under \$5 = 130 hours

ID	Last Name	First Name	Sex	Pay Rate	Total Hours	Regular Pay	Overtime Pay	Total Pay	Total Pay	Pay Rank
4470881	Anderson	Amanda	F	6	21	\$126.00	\$0.00	\$126.00		12
4298561	Bastian-Smith	Christopher	M	4	35	\$140.00	\$0.00	\$140.00		11
4378285	Bel	Gary	M	3	50	\$120.00	\$45.00	\$165.00		9
4328801	Bergstrom	Kenneth	M	4	23	\$92.00	\$0.00	\$92.00		15
4719182	Besha	Chiyu	F	1	65	\$40.00	\$37.50	\$77.50		19
4650662	Bohken	Ryan	M	7	32	\$224.00	\$0.00	\$224.00		5
4450275	Bostrom	Taylor	F	2	40	\$80.00	\$0.00	\$80.00		17
4662548	Comer	Jacqueline	F	2	50	\$80.00	\$30.00	\$110.00		13
4580990	Dahl	Thomas	M	8	40	\$320.00	\$0.00	\$320.00		3
4588135	Doublette	Amanda	F	5	40	\$200.00	\$0.00	\$200.00		7
4611455	Ferraro	Claire	F	4	65	\$160.00	\$150.00	\$310.00		4
4659441	Francis	Alissa	F	2	40	\$80.00	\$0.00	\$80.00		17
4395057	Grahn	Daniela	F	3	35	\$105.00	\$0.00	\$105.00		14
4578225	Grattan	Meghan	F	6	50	\$240.00	\$90.00	\$330.00		2
4235648	Gnill	Christian	M	6	32	\$192.00	\$0.00	\$192.00		8
4019425	Huculak	Alexis	F	7	50	\$280.00	\$105.00	\$385.00		1
4346294	Isakson	Evan	M	4	22	\$88.00	\$0.00	\$88.00		16
4580074	Koch	Do-Kyung	F	3	23	\$69.00	\$0.00	\$69.00		20
4429640	Kuharske	Malyn	F	4	50	\$160.00	\$60.00	\$220.00		6
4566665	Lentsch	Michael	M	7	21	\$147.00	\$0.00	\$147.00		10

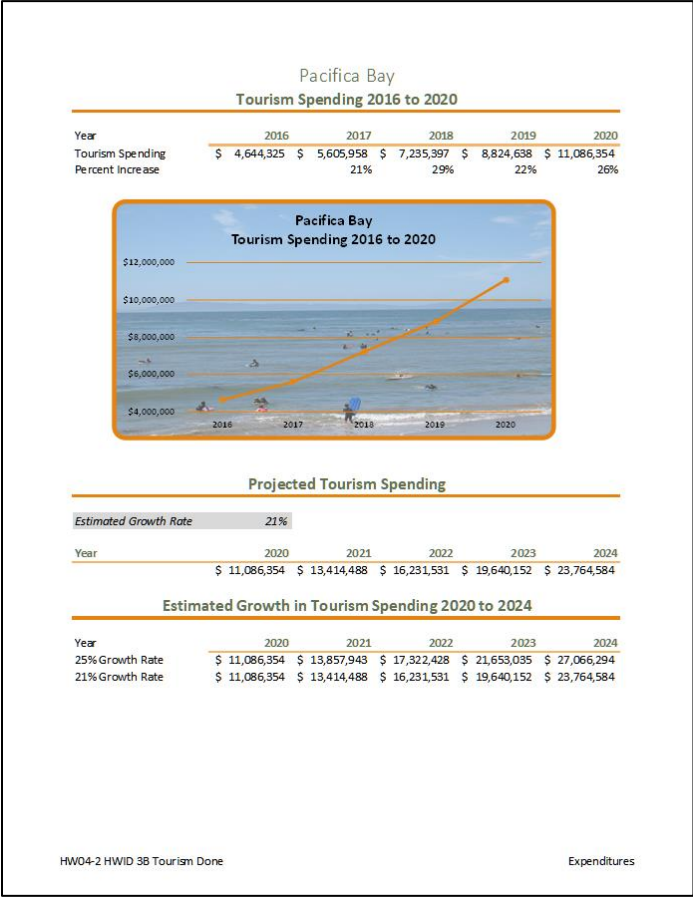
HW03-4 HWID Payroll IF Done

Payroll Data

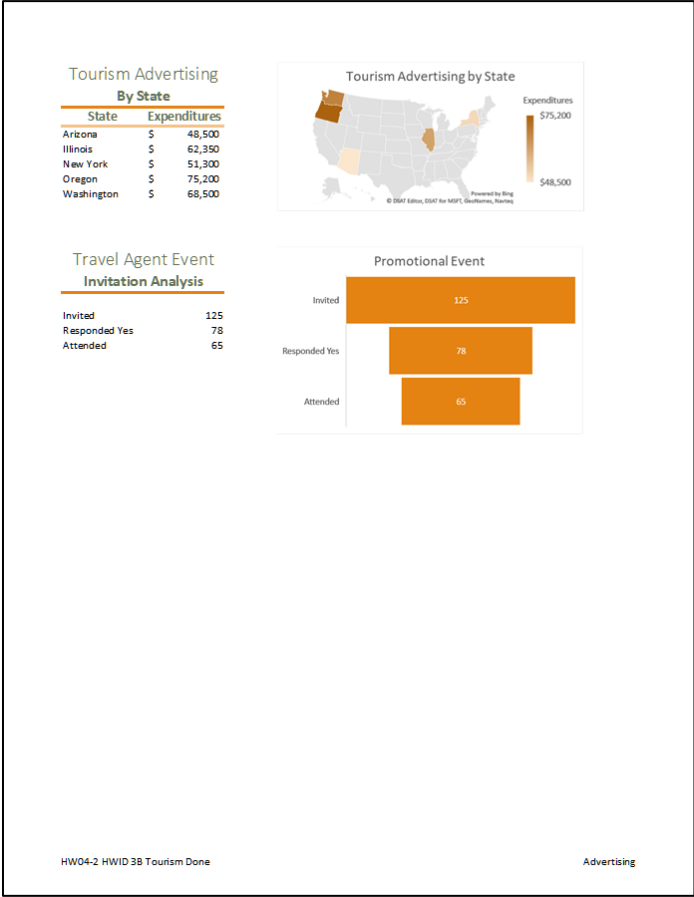
HW04-1 HWID 3A Enterprise Fund Done (Expenditures Chart)



HW04-2 HWID 3B Tourism Done (Expenditures)



HW04-2 HWID 3B Tourism Done (Advertising)



HW04-3 HWID HLOOKUP Gradebook Done

Course: Math 1051 Instructor: Robertson			Cutoff on Diagnostic Test -> 65 Cutoff on Total Points Earned -> 65 Num Stu with Diag Below Cutoff and Total At Least Cutoff -> 1									
Total Points	0	65	68	70	73	76	80	82	86	90	95	
Comment	Ouch!	Study!	Study!	Fair	Ok	Not bad	Fine	Good	Pretty good	Very good	Great!	
Grade	F	D	D+	C	C	C+	B	B	B+	A	A	
Num Stu	7	0	9	3	10	16	12	22	15	15	1	

Name	Attend	HW	Diagnostic	Ex1	Ex2	Ex3	Final Ex	Total	VLOOKUP Grade	VLOOKUP Comment	XLOOKUP Comment
Aanon, Natalie	80	90	99	56	94	74	74	79	C+	Not bad	Not bad
Aba, Megan	93	92	91	65	62	52	65	68	D+	Study!	Study!
Agular, Andrew	83	94	88	71	69	67	67	73	C	Ok	Ok
Aluppy, Aliasgher	20	19	89	0	0	0	0	11	F	Ouch!	Ouch!
Ali, Elijah	97	100	86	71	72	67	67	74	C	Ok	Ok
Bartlett, Jeffrey	87	95	95	94	83	85	94	91	A-	Very good	Very good
Becker, Stefanie	77	53	45	0	23	0	0	10	F	Ouch!	Ouch!
Bedore, Laura	73	85	66	66	73	53	66	68	D+	Study!	Study!
Bello, Larria	100	100	90	68	60	67	60	69	D+	Study!	Study!
Bennett, Kevin	20	63	93	70	65	67	62	68	D+	Study!	Study!

HW04-3 HWID HLOOKUP Gradebook Done

Gradebook

HW04-4 HWID VLOOKUP Shipping Done

Shipping Cost Calculations

Calculate Shipping Cost				Summary	
Given Item Number		Given Item Weight		Total weight is 329.5 lbs and total shipping cost is \$1,555.60	
Choose Item Number	Shipping Cost	Enter Weight	Shipping Cost	VLOOKUP	Highest weight is for item number 80680
80680	\$33.00	1.1	\$15.75	XLOOKUP	Highest weight is for item number 80680

Item Number	Weight (lbs)	VLOOKUP Cost	XLOOKUP Cost	Round up Cost
44537	7.5	\$30.60	\$30.60	\$31.80
80680	9.9	\$33.00	\$33.00	Not found
43913	8.7	\$31.80	\$31.80	\$33.00
71304	5.7	\$26.75	\$26.75	\$29.40
64287	4.2	\$24.00	\$24.00	\$26.75
60417	3.1	\$21.25	\$21.25	\$24.00
54049	4.2	\$24.00	\$24.00	\$26.75
48320	1.1	\$15.75	\$15.75	\$18.50
90169	4.9	\$24.00	\$24.00	\$26.75
13529	1.1	\$15.75	\$15.75	\$18.50
45187	8.2	\$31.80	\$31.80	\$33.00
94225	3.0	\$21.25	\$21.25	\$21.25
88378	3.5	\$21.25	\$21.25	\$24.00
71532	6.7	\$29.40	\$29.40	\$30.60
22546	5.3	\$26.75	\$26.75	\$29.40
61276	7.1	\$30.60	\$30.60	\$31.80
85052	1.4	\$15.75	\$15.75	\$18.50
98358	6.1	\$29.40	\$29.40	\$30.60
52011	9.0	\$33.00	\$33.00	\$33.00
36577	4.7	\$24.00	\$24.00	\$26.75
40590	6.3	\$29.40	\$29.40	\$30.60
64817	8.7	\$31.80	\$31.80	\$33.00
21536	3.3	\$21.25	\$21.25	\$24.00
33587	7.0	\$30.60	\$30.60	\$30.60
39536	6.6	\$29.40	\$29.40	\$30.60

Weight/Cost Table	
Weight	Shipping Cost
0.0	\$11.75
1.0	\$15.75
2.0	\$18.50
3.0	\$21.25
4.0	\$24.00
5.0	\$26.75
6.0	\$29.40
7.0	\$30.60
8.0	\$31.80
9.0	\$33.00

Scratch Area		
Weight	Item Number	Shipping Cost
7.5	44537	\$30.60
9.9	80680	\$33.00
8.7	43913	\$31.80
5.7	71304	\$26.75
4.2	64287	\$24.00
3.1	60417	\$21.25
4.2	54049	\$24.00
1.1	48320	\$15.75
4.9	90169	\$24.00
1.1	13529	\$15.75
8.2	45187	\$31.80
3.0	94225	\$21.25
3.5	88378	\$21.25
6.7	71532	\$29.40
5.3	22546	\$26.75
7.1	61276	\$30.60
1.4	85052	\$15.75
6.1	98358	\$29.40
9.0	52011	\$33.00
4.7	36577	\$24.00
6.3	40590	\$29.40
8.7	64817	\$31.80
3.3	21536	\$21.25
7.0	33587	\$30.60
6.6	39536	\$29.40

HW04-4 HWID VLOOKUP Shipping Done

Shipping Costs

HW04-5 HWID PivotTables Done (Slicer-1)

1	Fire/Police	Fire											
2													
3	Sum of Num	Column Labels				Fire/Police		Class					
4	Row Labels	Jan	Feb	Mar	Grand Total	Fire		Fire					
5	Station 1	924	879	732	2535	Police		Medical					
6	Medical	924	879	732	2535			Accidents					
7	Station 2	987	770	963	2720			Crime					
8	Medical	987	770	963	2720			Sent					
9	Station 3	371	332	321	1024								
10	Medical	371	332	321	1024								
11	Station 4	541	478	505	1524								
12	Medical	541	478	505	1524								
13	Grand Total	2823	2459	2521	7803								
14													
15													

HW04-5 HWID PivotTables Done

Slicer-1

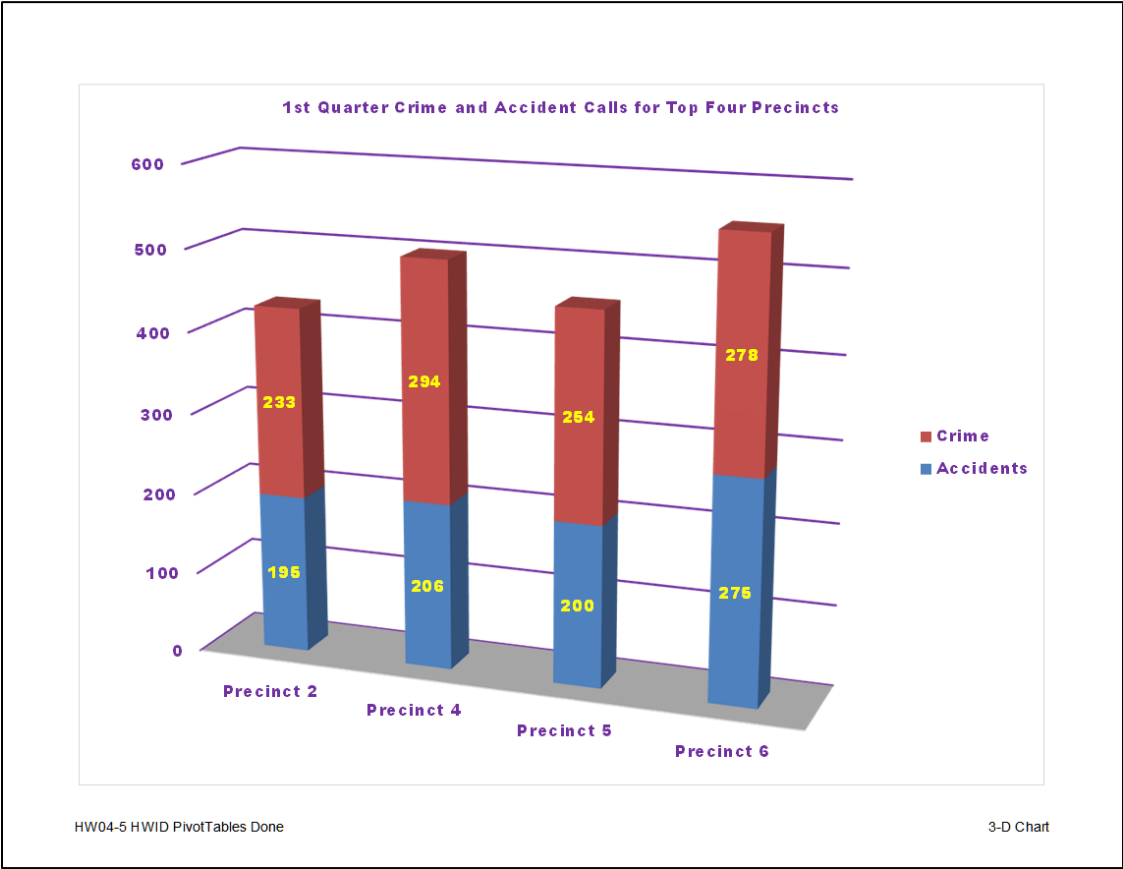
HW04-5 HWID PivotTables Done (Crime)

Fire/Police	Month	Location	Class	Num	Num
Police	Jan	Precinct 2	Crime	310	
Police	Jan	Precinct 4	Crime	308	
Police	Jan	Precinct 5	Crime	286	
Police	Jan	Precinct 1	Crime	285	
Police	Jan	Precinct 6	Crime	274	
Police	Jan	Precinct 3	Crime	196	
Police	Feb	Precinct 4	Crime	327	
Police	Feb	Precinct 5	Crime	243	
Police	Feb	Precinct 3	Crime	224	
Police	Feb	Precinct 6	Crime	206	
Police	Feb	Precinct 2	Crime	175	
Police	Feb	Precinct 1	Crime	93	
Police	Mar	Precinct 6	Crime	355	
Police	Mar	Precinct 4	Crime	246	
Police	Mar	Precinct 5	Crime	234	
Police	Mar	Precinct 2	Crime	214	
Police	Mar	Precinct 3	Crime	214	
Police	Mar	Precinct 1	Crime	121	

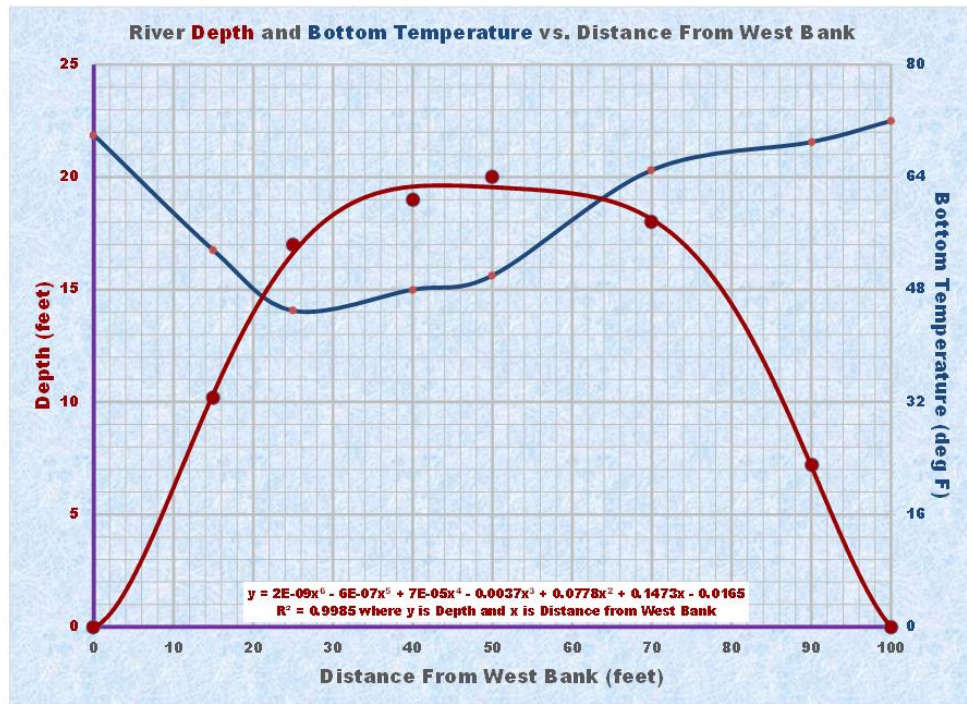
HW04-5 HWID PivotTables Done

Crime

HW04-5 HWID PivotTables Done (3-D Chart)



HW05-1 HWID River Done (River Depth and Temp Chart)



HW05-1 HWID River Done

River Depth and Temp Chart

HW05-2 HWID Loans IF Done

Loan Payments				
Today's Date: 13 Jul 2021				
Loan	Due Date	Amount	More than 30 days overdue	Number of days overdue
Boat	11 Jun 2021	\$450.00	OVERDUE	32
Car	30 Jun 2021	\$520.00		
Home	04 Jul 2021	\$980.00		
Student	24 May 2021	\$300.00	OVERDUE	50

HW05-2 HWID Loans IF Done

Loan Data

HW05-3 HWID Rent IF Done

Rent Payments

Today's Date	11 Jul 2022
--------------	-------------

	British System	Metric System
Normal Rate	\$9.00 per sq. ft.	\$96.88 per sq. m.
Introductory Rate	\$5.00 per sq. ft.	\$53.82 per sq. m.

Company	Floor Space	Initial Date	Payment Due
Lisa's Camping Supply	5,000 sq. ft.	10 Oct 2015	\$45,000.00
Badtke Burger Barn	1,500 sq. ft.	4 Apr 2022	\$7,500.00
Brainiac Books	800 sq. ft.	30 Apr 2016	\$7,200.00
Know It All Notions	2,000 sq. ft.	6 Jan 2022	\$10,000.00
Panera	2,500 sq. ft.	5 Jul 2022	\$12,500.00
Cub	18,000 sq. ft.	25 May 2015	\$162,000.00
Gertins	23,000 sq. ft.	2 Aug 2019	\$207,000.00
Menards	25,000 sq. ft.	8 Jan 2017	\$225,000.00
Mary's Malts	3,200 sq. ft.	2 Sep 2022	\$16,000.00
Stamp House	4,300 sq. ft.	3 Aug 2018	\$38,700.00
Trainworld	4,600 sq. ft.	8 Jul 2016	\$41,400.00
Total Payment Due			\$772,300.00

Number payments less than \$8,000 =	2
Sum of payments less than \$8,000 =	\$14,700.00
Sum of Payments where Floor space less than 2,200 =	\$24,700.00

HW05-3 HWID Rent IF Done

Data

HW05-4 HWID Commission IF Done (Sales Data)

MicroMania, Inc., Sales and Earnings Summary

Employee	Hardware Sales	Software Sales	Hardware Commission	Software Commission	Total Commission	Total Earnings
Sherri	\$ 23,000.00	\$ 800.00	\$ 2,360.00	\$ 64.00	\$ 2,424.00	\$ 14,424.00
Mary	\$ 13,500.00	\$ 500.00	\$ 1,350.00	\$ 40.00	\$ 1,390.00	\$ 12,390.00
Lawrence	\$ 28,200.00	\$ 200.00	\$ 2,984.00	\$ 16.00	\$ 3,000.00	\$ 15,000.00
Brady	\$ 75,192.00	Douglas F. Robertson: 123.04	\$ 76.80	\$ 8,699.84	\$ 20,699.84	
Monica	\$ 9,500.00	Used Goal Seek here. 150.00	\$ 20.24	\$ 970.24	\$ 10,970.24	
Jezebel	\$ 79,944.00	\$ 919.00	\$ 9,193.28	\$ 73.52	\$ 9,266.80	\$ 21,266.80
Abigail	\$ 31,013.00	\$ 112.00	\$ 3,321.56	\$ 8.96	\$ 3,330.52	\$ 15,330.52
Marisa	\$ 25,271.00	\$ 782.00	\$ 2,632.52	\$ 62.56	\$ 2,695.08	\$ 14,695.08
Sean	\$ 98,630.00	\$ 810.00	\$ 11,435.60	\$ 64.80	\$ 11,500.40	\$ 23,500.40
Max	\$ 62,357.00	\$ 958.00	\$ 7,082.84	\$ 76.64	\$ 7,159.48	\$ 19,159.48
Amy	\$ 33,883.00	\$ 974.00	\$ 3,665.96	\$ 77.92	\$ 3,743.88	\$ 15,743.88
Jessica	\$ 58,418.00	\$ 388.00	\$ 6,610.16	\$ 31.04	\$ 6,641.20	\$ 18,641.20
Totals	\$ 4,050,169.00	\$ 44,539.00	\$ 456,120.06	\$ 3,563.12	\$ 459,683.18	\$ 1,378,683.18
Averages	\$ 52,599.60	\$ 578.43	\$ 5,923.64	\$ 46.27	\$ 5,969.91	\$ 17,904.98

HW05-4 HWID Commission IF Done

Sales Data

HW05-5 HWID Sorting Values Done (Values Sorted)

	A	B	C	D	E	F	G	H	I
1			Home Values						
2		Num	Address	Estimated Value	Property Tax	Lot Size (acre)	Cable TV Hookup	Small Lot with Cable	Small Lot or Cable
3		1	24 Fourth Street	\$ 262,990	\$ 2,430.00	1.10	No	No	No
4		2	3580 Lake Avenue	\$ 262,890	\$ 1,891.00	1.05	No	No	No
5		3	3578 Lake Avenue	\$ 261,578	\$ 2,149.00	0.80	No	No	Yes
6		4	3579 Lake Avenue	\$ 252,467	\$ 2,056.00	0.90	No	No	Yes
7		5	23 Fourth Street	\$ 242,467	\$ 2,051.00	1.12	No	No	No
8		6	25 Fourth Street	\$ 50,000	\$ 2,313.00	0.95	No	No	Yes
9		7	1459 Via Colinas	\$ 301,582	\$ 2,352.00	1.20	Yes	No	Yes
10		8	1460 Via Colinas	\$ 297,566	\$ 2,321.00	0.97	Yes	Yes	Yes
11		9	3582 Lake Avenue	\$ 296,566	\$ 390.00	0.77	Yes	Yes	Yes
12		10	1461 Via Colinas	\$ 285,456	\$ 2,227.00	0.94	Yes	Yes	Yes
13		11	22 Fourth Street	\$ 263,578	\$ 1,969.00	0.82	Yes	Yes	Yes
14		12	1458 Via Colinas	\$ 260,890	\$ 2,035.00	0.70	Yes	Yes	Yes
15		13	1457 Via Colinas	\$ 252,467	\$ 1,969.00	0.80	Yes	Yes	Yes
16									
17									
18									
19									
20									
21									

7 = number with cable

2 = number over one acre and tax under \$2,100

\$8,724 = sum of taxes for lots over one acre

\$768,347 = sum of values for lots over 1 acre and no cable

[Click here to open Zillow.com to see more home values](#)

HW05-5 HWID Sorting Values Done-New

Values Sorted

HW05-6 HWID Find and Macros Enabled Done (Sec 1)

	A	B	C	D	E	AB	AC	AD	AE	AF	AG	AH	AI
1	CI 1871 sec 1, Professor Robertson					82	86	90	96				
2	Sort By Name					B	B+	A-	A				
3													
4	Sort By HWID												
5													
6	Go To Grades												
7													
8													
9	Printed Fri 3 Jun 2022 at 10:25 AM												
10	HWID	Name	ID	College	Year	H11	H12	H13	H14	H15	HW	Tot Pts	Grade
11	101	Berg, Alex	7023072	CEHD	Senior	30	40	50	20	10	96	87	B+
12	102	Bets, Sam	7266721	Design	Senior	30	40	50	20	40	100	97	A
13	103	Biff, Timothy	2106779	Design	Freshman	30	40	50	10	30	97	97	A
14	104	Bing, William	3263672	CLA	Sophomore						0	0	F
15	105	Cheng, Recca	2172092	CLA	Freshman						38	13	F
16	106	Coen, Tiffany	3667079	CEHD	Non-degree	30	40	50	20	40	100	98	A
17	107	Collins, Phuong	2172172	CEHD	Sophomore	30	40	50	20	40	100	88	B+

HW05-6 HWID Find and Macros Enabled Done

Sec 1

HW06-1b HWID Excel Practice Done (Sales Data)

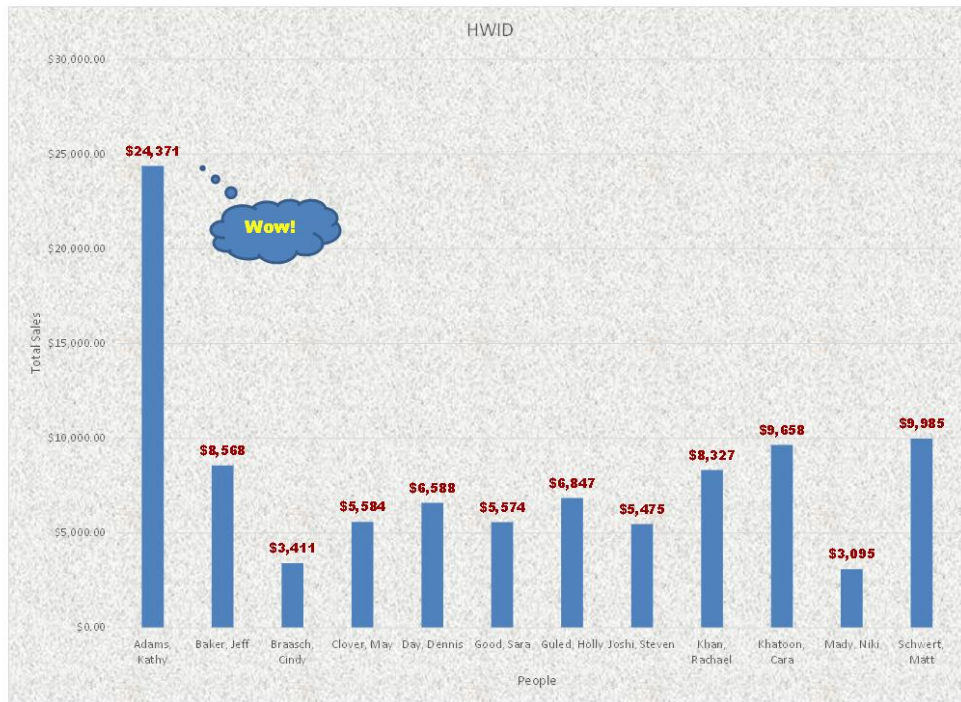
	A	B	C	D	E	F
1	Names and Total Sales			Printed on: Fri 24 Jun 2022 at 9:48 AM		
2	Name	Department	Total Sales	Commission	% of Total Sales	Quality
3						
4	Adams, Kathy	Sales	\$24,370.66	\$11,724.48	25.0	Great
5	Baker, Jeff	Marketing	\$8,568.00	\$9,828.16	8.8	Great
6	Braasch, Cindy	Production	\$3,411.00	\$9,272.88	3.5	Poor
7	Clover, May	Sales	\$5,584.00	\$9,470.08	5.7	Poor
8	Day, Dennis	Marketing	\$6,588.00	\$9,590.56	6.8	Good
9	Good, Sara	Production	\$5,574.00	\$9,468.88	5.7	Poor
10	Guled, Holly	Marketing	\$6,847.00	\$9,621.64	7.0	Good
11	Joshi, Steven	Sales	\$5,475.00	\$9,457.00	5.6	Poor
12	Khan, Rachael	Marketing	\$8,327.00	\$9,799.24	8.5	Great
13	Khatoon, Cara	Production	\$9,658.00	\$9,958.96	9.9	Great
14	Mady, Niki	Production	\$3,095.00	\$9,247.60	3.2	Poor
15	Schwert, Matt	Sales	\$9,985.00	\$9,998.20	10.2	Great
16						
17		Total	\$97,482.66			
18		Average	\$8,123.56			
19				Sum of Total Sales for Commissions over \$9,800		
20				\$52,581.66		
21				Num of Comm over \$9,600 for Marketing		
22				3		

Used Goal Seek to change C4 so E4 is exactly 25.

HW06-1b HWID Excel Practice Questions Done - KEY

Sales Data

HW06-1b HWID Excel Practice Done (Column Chart)



HW06-1b HWID Excel Practice Questions Done - KEY

Column Chart

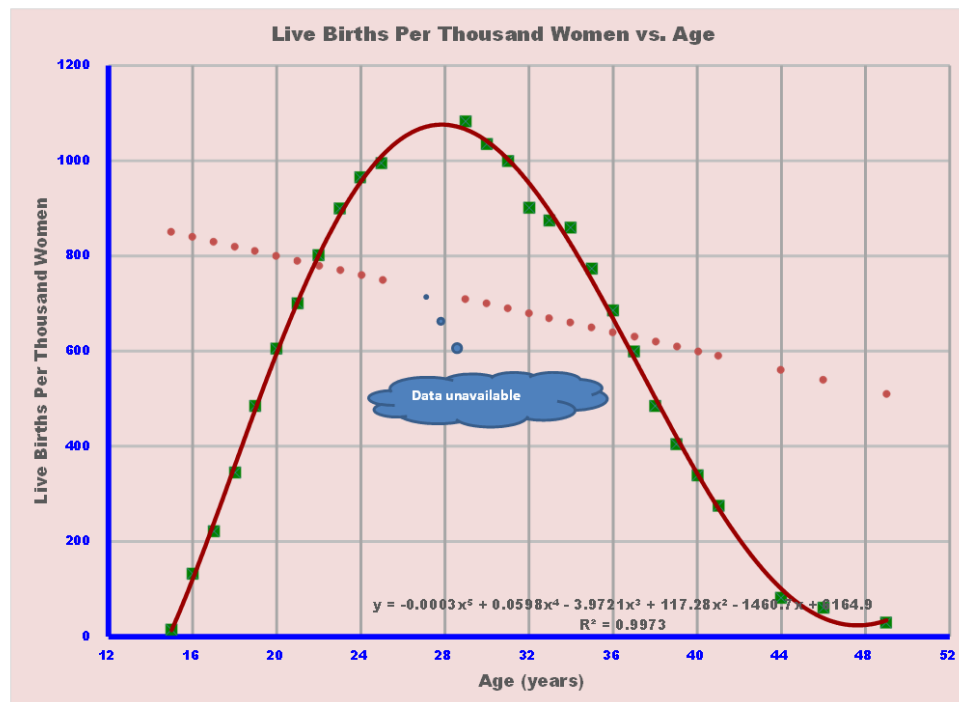
HW06-1b HWID Excel Practice Done (Bonus Data)

	A	B	C	D	E	F	G	H
1	Bonus Data							
2	Highest Bonus Awarded was \$1,000.00							
3	Name	Sales	Bonus	Average of Total Sales is \$8,123.56				
4	Maren	\$38,200	\$1,000					
5	Sue	\$30,123	\$800					
6	Melissa	\$25,821	\$600					
7	Elana	\$22,054	\$400					
8	Kathy	\$17,866	\$200					
9			<div><div></div><div></div><div></div><div></div></div>					
10	Sales	\$15,000	\$20,000	\$25,000	\$30,000	\$35,000	\$40,000	
11	Level	Low	Fair	Medium	Good	Excellent	Outstanding	
12	Bonus	200	400	600	800	1000	1200	

HW06-1b HWID Excel Practice Questions Done - KEY

Bonus Data

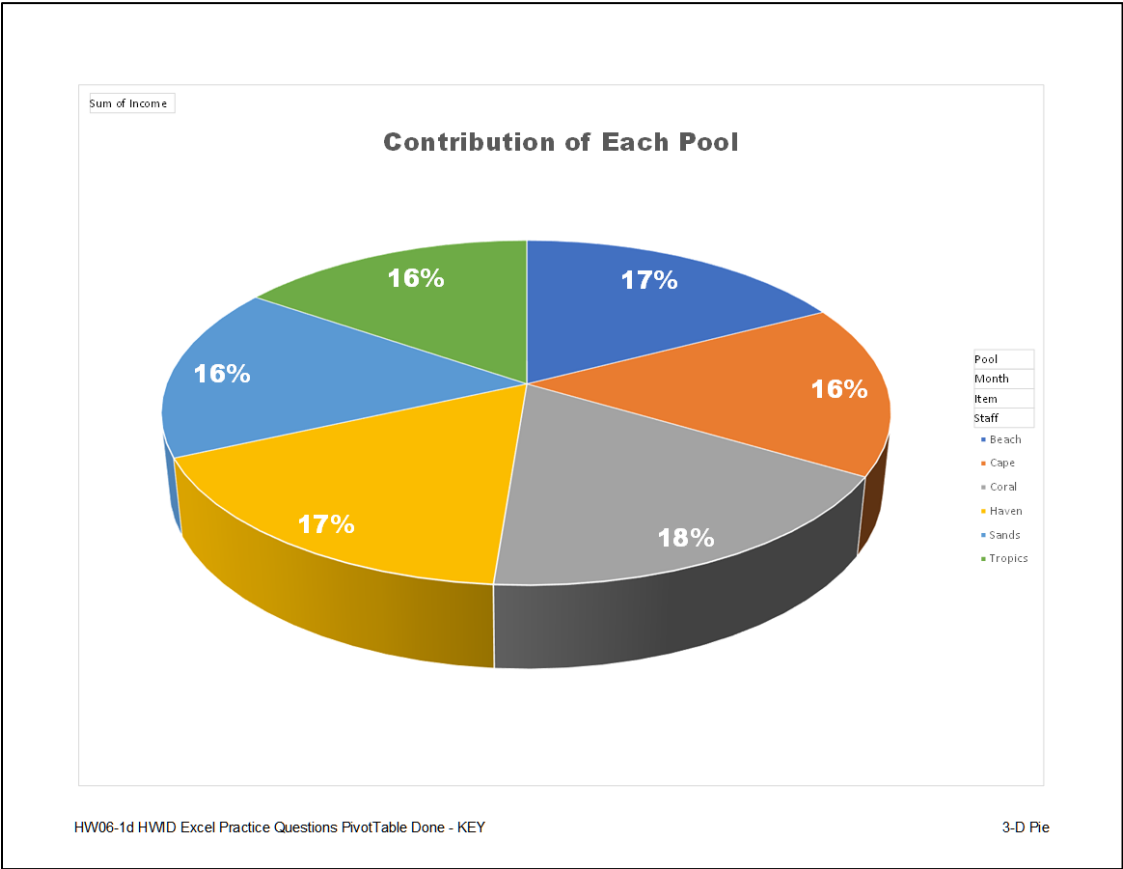
HW06-1b HWID Excel Practice Done (Births Chart)



HW06-1b HWID Excel Practice Questions Done - KEY

Births Chart

HW06-1d HWID Excel Practice Pivot Done (3-D Pie)



HW06-1d HWID Excel Practice Pivot Done (Filtered)

Month

(Multiple Items)

Average of Income

Column Labels

Row Labels

Dive

Swim

Grand Total

Coral	\$1,111	\$3,522	\$2,316
Haven	\$910	\$3,350	\$2,130
Sands	\$906	\$2,694	\$1,800
Tropics	\$734	\$2,660	\$1,697
Grand Total	\$915	\$3,056	\$1,986

Pool

Item

Beach

Cape

Coral

Haven

Sands

Tropics

Ball

Dive

Food

Polo

Spa

Swim

HW06-1d HWID Excel Practice Questions PivotTable Done - KEY

Filtered

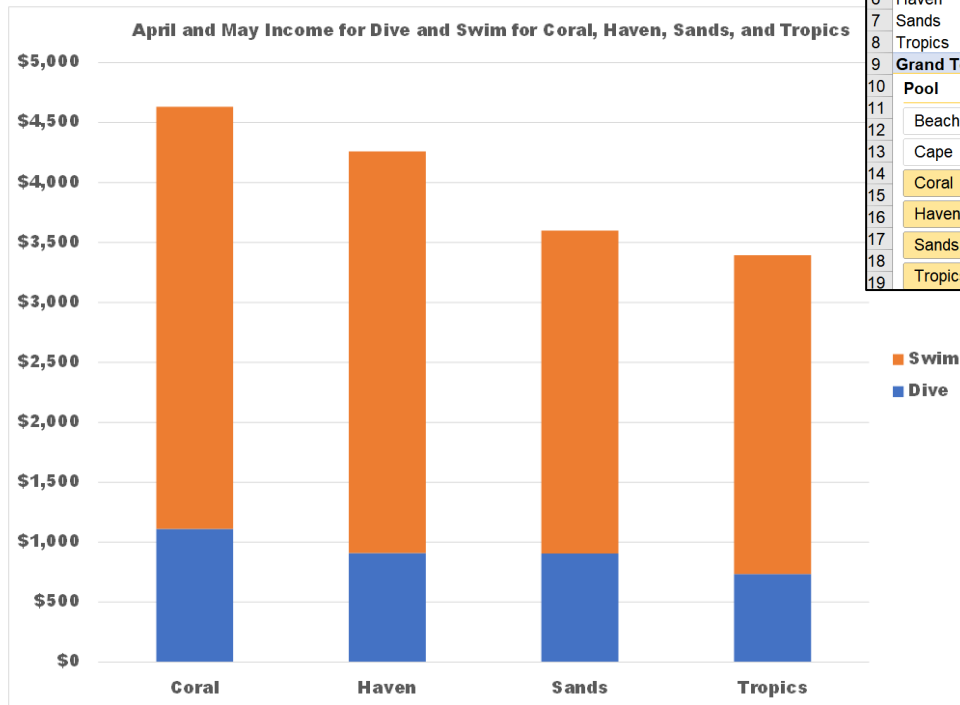
HW06-1d HWID Excel Practice Pivot Done (Beach)

	A	B	C	D	E	F
1	Month	Pool	Item	Income	Num	Staff
2	June	Beach	Dive	791	86	Melby
3	May	Beach	Dive	882	95	Melby
4	April	Beach	Dive	882	95	Melby
5	June	Beach	Swim	2876	295	King
6	May	Beach	Swim	3377	345	King
7	April	Beach	Swim	2894	296	King

HW06-1d HWID Excel Practice Questions PivotTable Done - KEY

Beach

HW06-1d HWID Excel Practice Pivot Done (Stacked)



HW06-1d HMD Excel Practice Questions PivotTable Done - KEY

Stacked

	A	B	C	D
1	Month	(Multiple Items)		
2				
3	Average of Income	Column Labels		
4	Row Labels	Dive	Swim	Grand Total
5	Coral	\$1,111	\$3,522	\$2,316
6	Haven	\$910	\$3,350	\$2,130
7	Sands	\$906	\$2,694	\$1,800
8	Tropics	\$734	\$2,660	\$1,697
9	Grand Total	\$915	\$3,056	\$1,986
10	Pool		Item	
11	Beach		Ball	
12	Cape		Dive	
13	Coral		Food	
14	Haven		Polo	
15	Sands		Spa	
16	Tropics		Swim	

Notice that the Filtered worksheet has changed because you changed the filters on the chart.

HW07-1 HWID 1A Flyer Done

Internships Available

Interviews will be held:
Friday and Saturday, January 14 and 15
In the Career Services Conference Room

This summer, Sturgeon Point Productions will be filming a documentary in Costa Rica about its native birds and has positions available for two interns. The filming will begin the first week of July and will last approximately two weeks. Payment will be by Day Rate of \$100 per day. Transportation, food, and lodging will be provided.

The First Assistant Director will work with the second film crew, which will be filming background video. The Assistant Script Supervisor will work with the Script Supervisor and will be responsible for coordinating communication between the two camera crews.

You must have a valid U. S. passport; no inoculations are necessary. Details are available on the company website.



Today's Date: Wednesday, July 20, 2022
 Date Last Saved: Wednesday, July 20, 2022
 Last Saved By: Douglas Robertson

File Name and Path: C:\Users\droberts\Desktop\C11871\Word Files\HW07-1 HWID 1A Flyer Done.docx

To set up an interview, apply online at:
www.SturgeonPointProductions.com

HW07-1 HWID 1A Flyer Done HW07-1 HWID 1A Flyer Done

Full location (path) of file

File name twice

HW07-2 HWID 1B Programs Done Page 1

Sturgeon Point Productions

Internship Guide

Apply
Online

Interview

Train on
the Job

The Internship Program

Sturgeon Point Productions produces and markets educational videos. We started our company in 1968, and now we are a dynamic and creative independent film and commercial production company. From our base in Miami, we create both contract and in-house videos and feature films.


As an intern, you might take part in the following types of productions:

- Short feature films
- Documentaries
- Commercials
- Training films
- Sales and marketing videos
- Recordings of live concerts, sporting events, or theatrical productions

HW07-2 HWID 1B Programs Done

HW07-3 HWID Agenda Done

Agenda Campus Service Club




Our club always follows Robert's Rules of Order.

- 1) New Business
 - a) Treasurer's report
 - b) Big brother and big sister project
 - c) Food Shelf donations
 - d) Tax program
 - e) Election of officers
 - i) President
 - ii) Treasurer
 - iii) Secretary
 - f) Other new business
- 2) Old Business
 - a) Reading of minutes
 - b) Continue discussion of fundraising projects

HW07-3 HWID Agenda Done

HW07-4 HWID Brochures Done



MEMO

PO Box 79732
 Colorado Springs, CO 80970
 719-638-9511
 JohnWells@ad-excellence.net

TO: Patricia Smith, Marketing Director
 FROM: John Wells, Publications
 SUBJECT: Production of brochures
 DATE: XXX, XXX 0, 0000

The concept for the new product brochures has been reviewed and passed by the marketing committee. Stan is working on design ideas and plans to have something ready for us to look at the next meeting.

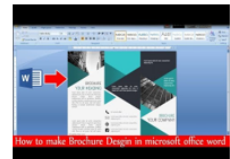
- Be prepared to discuss in great detail your ideas concerning the layout of the brochure. It is a nice piece that we can be proud ofIMPORTANT!
- Have ready in report form your analysis of the marketability of the new product. Include the target population as well as revenue projections.

I need to schedule this with the printer so they can order paper. My understanding is that we will be printing copies as follows.

Style	Colors	Price	Thickness
Regular	one color	4	.000008
Folded	two color	5.25	11.6
Multi-stapled	four color	13.3	8.1

Is that correct?

Here is our latest promotional video. Check it out.
<https://www.youtube.com/watch?v=nY9avMpARHg>



How to make Brochure Design in microsoft office word

Decimals lined up

Price	Thickness
4	.000008
5.25	11.6
13.3	8.1

Decimals NOT lined up

Word Count

Statistics	Count
Pages	1
Words	161
Characters (no spaces)	773
Characters (with spaces)	930
Paragraphs	14
Lines	31

☐ Include footnotes, footnotes and endnotes

Close

HW07-4 HWID Brochures Done

HW08-2 HWID 2B Cover Letter Done

HW08-1 HWID 2A Resume Done

1776 Bay Cliff Drive, Tampa, FL 33602
(727) 555-0347 Jgarcia@alcona.net

May 12, 2020

Ms. Mary Walker-Huelsman, Director
Florida Port Community College Career Center
2745 Oakland Avenue
St. Petersburg, FL 33713

Dear Ms. Walker-Huelsman:

I am seeking a position in which I can use my computer and communication skills. My education and experience, outlined on the enclosed resume, includes a Business Software Applications Specialist certificate from Florida Port Community College.

With a permanent position as my goal, I hope to use the Florida Port Community College Career Center to secure a temporary job. I can be available for a flexible number of hours or days and am willing to work in a variety of businesses or organizations.

As my resume illustrates I have excellent computer skills. I am an honor student at Florida Port Community College and have outstanding references. In addition, I have part-time work experience as a software tester, where I perform the following computer activities:

Program	Duty
Microsoft Access	Test database queries
Microsoft Excel	Enter software test data
Microsoft Word	Create and mail form letters

You can contact me by email at jgarcia@alcona.net or by telephone at (727) 555-0347. I am available for an interview at your convenience.

Sincerely,

Jennifer Garcia

Enclosure

HW08-2 HWID 2B Cover Letter Done

HW08-4 HWID Park Done

Amendment VII

In Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise re-examined in any Court of the United States, than according to the rules of the common law.

Amendment VIII

Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.

Amendment IX

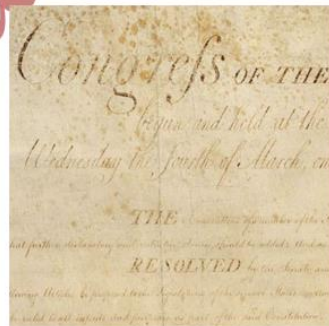
The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people.

Amendment X

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

Names of Senators in March, 1789

Richard Bassett
Pierce Butler
Charles Carroll
Tristram Dalton
Oliver Ellsworth
Jonathan Elmer
William Few
William Grayson
James Gunn
John Henry
Ralph Izard
William S. Johnson
John Langdon
Richard Henry Lee
William Maclay
Robert Morris
William Paterson
George Read
Philip John Schuyler
Caleb Strong
Paine Wingate



HW08-3 HWID Bill of Rights Done

MEMO TO: Dana Brothers, Vice President, Marketing

FROM: Valerie Fair

DATE: Sunday, June 13, 2021

SUBJECT: Final Changes in Hours of Operation, Ticket Prices, and Restrictions

The hours of operation are very similar to last year; the Sunday opening time is the only change:

Days	Opens	Closes
Monday-Thursday	1 pm	10 pm
Friday	1 pm	11 pm
Saturday and Holidays	11 am	11 pm
Sunday	Noon	11 pm

Admission charges are significantly different, with the price of season passes reduced by \$20 for Adults, and increased by \$20 for Juniors. Let's hope the 15% increase in revenue is realistic!

	Ave	One Day	Season Pass
Toddler	3 & under	Free	Free
Junior	4 to 11	\$19	\$89
Adult	12 to 59	\$39	\$129
Senior	60+	\$29	\$99

Height and age restrictions are unchanged with the following exceptions:

Activity	Minimum height/age:	To be able to:
Speed Go-Karts	52" tall	Drive alone
	16 years old	Drive with a passenger
	40" tall	Ride as a passenger
Bumper Boats	44" tall	Drive alone
	14 years old	Drive with a passenger
	32" tall	Ride as a passenger
Miniature Golf	10 years old	Play without parent/guardian
	No age limit	Play with parent/guardian
	5 years old	Play with 12+ year old companion

HW08-4 HWID Park Done

HW08-5 HWID Bank Product Report Done

First National Bank January/February Sales Report

Date	Product	Amount	Sales Rep	Points
5 Feb	Savings	6,300	Betsey	44
12 Feb	Savings	6,000	Betsey	42
16 Jan	Certificate	5,000	Betsey	400
26 Jan	Certificate	150	Betsey	120
13 Jan	Certificate	5,000	Carolyn	200
22 Jan	Credit	2,000	Carolyn	16
2 Feb	Savings	1,450	Carolyn	10
23 Jan	Mortgage	5,000	Diane	1750
9 Feb	Auto Loan	4,500	Diane	145
8 Jan	Certificate	1,500	Diane	12
16 Jan	Checking	600	Diane	3
12 Jan	Certificate	5,000	Jonell	360
20 Feb	Auto Loan	2,500	Jonell	125
30 Jan	Checking	1,200	Jonell	6
27 Jan	Mortgage	5,000	Pam	1650
28 Feb	Auto Loan	5,000	Pam	250
8 Feb	Auto Loan	3,000	Pam	300
6 Jan	Certificate	900	Pam	240
Sum = 60,100			Ave = 315.17	

HW08-5 HWID Bank Product Report Done

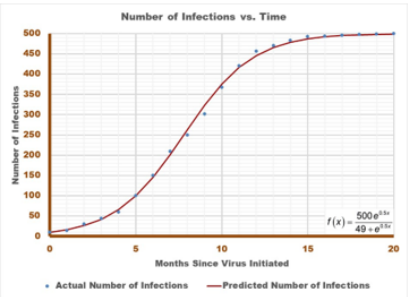
HW08-6 Infections Memo Done

Memo

To: Infectious Diseases Foundation
From: Douglas Robertson
Date: Wednesday, October 27, 2021
Re: Data you requested

Below please find the raw data and graphical interpretation of the infectious diseases model you requested we develop. A short video is also included. Please contact me if you need further analysis.

Month	Actual Number of Infections	Predicted Number of Infections
0	10	10.0
1	14	16.3
2	30	26.3
3	44	41.9
4	60	65.5
5	100	99.6
6	150	145.4
7	209	201.6
8	250	263.5
9	301	323.8
10	367	375.9
11	420	416.6
12	456	445.8
13	470	465.7
14	483	478.6
15	492	486.8
16	493	491.9
17	496	495.1
18	498	497.0
19	499	498.2
20	500	498.9



What you should know about COVID-19:
<https://www.youtube.com/watch?v=677pSwGaug5>



HW08-6 HWID Infections Memo Done

HW09-1 HWID 3A Quantitative Technology Done Page 4

Foster 4

Works Cited

Glaser, John P. and Claudia Salzberg. *The Strategic Application of Information Technology in Health Care Organizations*. San Francisco: Jossey-Bass, 2011. Print.

Ogden, Cynthia L. *NCHS Data Brief Number 82*. 15 January 2012. Web. 17 January 2021.

Topol, Eric J. *The Creative Destruction of Medicine*. New York: Basic Books, 2012. Print.

HW09-1 HWID 3A Quantitative Technology Done

HW09-2 HWID 3B Environment Newsletter Done



University Medical Center Goes Green

Volume 1, Number 1

January 2021

University Medical Center continues its commitment to implementing environmentally friendly practices and fostering ecologically sustainable communities. This newsletter focuses on practices being implemented at the Center in accordance with government guidelines.



RECYCLING TRASH

More than 300 recycling bins have been placed beside trash bins throughout the hospital. That means that for every two to four trash or hazardous waste receptacles, there is now a bin to collect and process recyclable materials. Plastic and aluminum cups, bottles, and cans are the main articles that will be recycled in these bins, which are clearly marked with the recycling sign to differentiate them from other types of waste. In addition to these bins, two extra cardboard balers have been installed to help with our increase of cardboard box recycling.

HARVESTING DAYLIGHT

Low-watt energy-efficient light bulbs have replaced traditional lights throughout the center and energy-efficient lamps and daylight controls have been installed. This move will conserve energy and cut down on the hospital's use of electricity.

GREENER LANDSCAPING

New landscaping incorporates the use of regionally-native plants and a reduction in turf, thus reducing the need for extensive use of power equipment. Water-saving devices and a system that uses 100% recycled water have been installed outside the center, replacing the previous watering system. Plants and fauna stay green in an environmentally conscious manner.

GREENER GROCER

The hospital cafeteria has eliminated non-compostable materials and is using recyclable paper goods. In addition, a vegetable and herb garden outside the southeast corner of the Palomar Pavilion supplements fruits and vegetables purchased at local farmers markets.

GREENER RECORDS

Electronic medical records and consent forms have replaced a paper system, conserving not only paper, but also reclaiming valuable working and storage space.

"Everything we can do here at University Medical Center to protect our environment and conserve resources sets the example for others to do the same."
Emily Lynn—Facilities Director



HW09-2 HWID 3B Environment Newsletter Done

HW09-3 HWID Address Labels Done

FirstName LastName HWID
Room 203 Bailey Hall, St. Paul Campus
Campus mail code: 6017
651-555-1234
name1234@umn.edu

FirstName LastName HWID
Room 203 Bailey Hall, St. Paul Campus
Campus mail code: 6017
651-555-1234
name1234@umn.edu

FirstName LastName HWID
Room 203 Bailey Hall, St. Paul Campus
Campus mail code: 6017
651-555-1234
name1234@umn.edu

FirstName LastName HWID
Room 203 Bailey Hall, St. Paul Campus
Campus mail code: 6017
651-555-1234
name1234@umn.edu

FirstName LastName HWID
Room 203 Bailey Hall, St. Paul Campus
Campus mail code: 6017
651-555-1234
name1234@umn.edu

FirstName LastName HWID
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Campus mail code: 6017
651-555-1234
name1234@umn.edu

HW09-4 HWID Name Tag PRN Done

Hello, my name is Jill
My major is English
My interests are
Flute
Walking
Gardening

I live in Bailey Hall on the St. Paul Campus



Hello, my name is Sue
My major is Biology
My interests are
Band
Jogging

I live in Territorial Hall on the Minneapolis Campus



Hello, my name is Bill
My major is Computer Science
My interests are
Money
Money
Money



Hello, my name is Barak
My major is Political Science
My interests are
Community Service
Sports
Golf



Hello, my name is Albert
My major is Physics
My interests are
Special Relativity
General Relativity
Photons



Hello, my name is Will
My major is English
My interests are
Poetry
Plays
Art

I live in Bailey Hall on the St. Paul Campus



Hello, my name is
My major is
My interests are



Hello, my name is
My major is
My interests are



HW09-5 HWID IF Merge MAIN Done (Codes Showing)

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{ SKIPIF { MERGEFIELD Sex } = "Unknown" } { MERGEFIELD Title } {  
MERGEFIELD FirstName } { MERGEFIELD LastName }  
{ MERGEFIELD Address }  
{ MERGEFIELD City }, { MERGEFIELD State } { MERGEFIELD Zip }
```

Dear { MERGEFIELD Title } { MERGEFIELD LastName }:

Thank you for your interest in our magazines. As a new customer I would like to offer you a special deal on { IF { MERGEFIELD Sex } = "Male" "Sports Illustrated"} { IF { MERGEFIELD Sex } = "Female" "Ms. Magazine" }. Your special yearly rate is { IF { MERGEFIELD Sex } = "Male" "\$15.99" "13.99" }. The shipping and handling charge would be { IF { MERGEFIELD Zip } > 50000 "\$6.95" "4.95" }.

Sincerely,

Keisha Rollings

```
{ FILENAME \* MERGEFORMAT }
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HW10-1 HWID Character Styles Done Page 1



Declaration of Independence

IN CONGRESS, July 4, 1776

The unanimous Declaration of the thirteen United States of America,

When in the Course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume among the powers of the earth, the separate and equal station to which the Laws of Nature and of Nature's God entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation.

We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness.—That to secure these rights, Governments are instituted among Men, deriving their just powers from the

consent of the governed, —That whenever any Form of **Government** becomes destructive of these ends, it is the Right of the People to alter or to abolish it, and to institute new **Government**, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their Safety and Happiness. Prudence, indeed, will dictate that Governments long established should not be changed for light and transient causes; and accordingly all experience hath shown, that mankind are more disposed to suffer, while evils are sufferable, than to right themselves by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations, pursuing invariably the same Object evinces a design to reduce them under absolute Despotism, it is their right, it is their duty, to throw off

such **Government** and to provide new Guards for their future security.—Such has been the patient sufferance of these Colonies; and such is now the necessity which constrains them to alter their former Systems of

Government. The history of the present King of Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute Tyranny over these States. To prove this, let Facts be submitted to a candid world.

He has refused his Assent to Laws, the most wholesome and necessary for the public good.

HW10-1 HWID Character Styles Done

HW10-2c HWID Paragraph Styles Done Page 1

Problem Solving in Developmental Mathematics

In 1988 the **mathematics** faculty began to experiment with the way in which we teach our developmental **mathematics** courses. We were disappointed with the number of students who could not successfully complete our arithmetic and algebra courses and with the number of the students who successfully completed our intermediate algebra course but who could not successfully complete college algebra offered through the Mathematics Department. We felt that developing a new sequence of courses, based on the ideas of problem solving, was needed.

Courses

The courses we developed are based on the notions that students who are specifically trained in general problem solving will do better at solving **mathematics** problems than students who have received no such instruction, and that students who construct their own knowledge, rather than acquire it from the teacher, will exhibit a better understanding of **mathematics** and, hence, will perform better. These notions are in concert with Professional Standards for Teaching Mathematics statement that

Los resultados de la investigación educativa de la psicología cognitiva y la educación **matemática** indican que el aprendizaje ocurre a medida que los estudiantes asimilan activamente nueva información y experiencias y construyen sus propios significados.

Basically, we believe that the purpose of education is to transform novices into experts and that knowledge is something that cannot be transferred from one individual to another but rather a personalized version of it must be constructed by the individual learner. We believe that we do not teach **mathematics** to students but that we stimulate the students to construct mathematical concepts and ideas by arranging experiences for them where they are actively involved in the learning process. Under this paradigm, the students are active participants in the teaching process rather than passive recipients of lecture material. Our philosophical approach to the learning process can be thought of as an underlying principle that guides us as we conduct our classes. We can implement the philosophy using a number of activities that include group work, writing, reading, discussing, skill building, problem solving, and discovery learning.

Implementation

Our implementation of problem solving involves students working in groups on various topics with the course instructor taking on the role as a facilitator and question poser rather than as a source of new information or as the

HW10-2c HWID Paragraph Styles Done

HW10-3c HWID Census Done Page 1

HW10-3c HWID Census Done

Sec 1 Page 1

U.S. Department of Commerce Economics and Statistics Administration BUREAU OF THE CENSUS

Introduction

The U.S. population census records contain a wealth of information. They are useful in learning about one's family and local social and economic conditions at various times in history. For more recent years especially, they are official documents for persons who need to prove their age (in the absence of a birth certificate), relationship, citizenship, residence, and other facts in order to qualify for pensions; get jobs, naturalization papers, passports, or insurance policies; establish an inheritance; or trace ancestry.

There was a population census taken in 1790 and every 10th year after that. The Bureau of the Census publication, 200 Years of U.S. Census Taking: Population and Housing Questions, 1790-1990 (Washington, DC, 1989), shows the specific questions and the way they appear on the records. It also reproduces instructions given to the enumerators for taking each census.

The Document

This document explains what census materials are available and how to obtain them, and also lists the sources for some other useful information including:

1. Citizen Archivists such as those people who have some background in history but who are no professional historians.
2. Federal Employees whose job might include gathering, analyzing, or publicizing information on the history of the United States of America.
3. Genealogists
4. Members of Congress many of whom waste their time and the taxpayers money in slowing the progress of the business of the People.
5. Preservation
6. Records Managers
7. The Press
8. Attend an Event
9. Donate to the Archives so that we can continue our work in making accessible many of the artifacts of the country.
10. Work at the Archives

HW10-3c HWID Census Done Page 2

HW10-3c HWID Census Done

Sec 1 Page 2

Census Schedules Available to the Public

Individual records from the national population censuses are confidential for 72 years, by law (Title 44, U.S. Code). Thus, April 2002 is the scheduled date for the **National** Archives to open the 1930 records to public use.

Microfilm copies of the original population schedules, from 1790 through 1920 (virtually all of the 1890 records were destroyed in a 1921 fire), are available at the **National** Archives in Washington (<http://www.archives.gov/index.html>) and its 13 regional archives, and many libraries in various parts of the United States. Most have facilities for making paper copies from the microfilm.

There are sound of the surname rather than its spelling indexes on microfilm for the 1880, 1900, and 1920 censuses for each State, and for 1910 for 21 States, principally in the South. Alphabetic indexes to the 1790-1860 and most of the 1870 censuses are available in genealogical libraries.

Researchers may find two Bureau of the Census publications useful; most major libraries have copies: Heads of Families at the First Census of the United States Taken in the Year 1790 (12 vols., Washington, DC, 1907-08, reprinted 1965-75), contains specific names. A Century of Population Growth—1790-1900 (Washington, DC, 1909, reprinted 1967-1970), includes the incidence of surnames in 1790, and a variety of summary tables from colonial censuses and from 1790 to 1900.

A number of State and territorial censuses were Nationalized in the intra-decennial years, particularly in the 19th century. See Henry J. Dubester, An Annotated Bibliography of Censuses Taken After the Year 1790, by States and Territories of the United States (Washington, DC, 1948, reprinted 1969 and 1975) and State Census Records, Ann S. Lainhart, Genealogical Publishing Co., Inc., 1992. An appendix to the Dubester book tells where the existing records (some including names) were located; copies of many can be obtained commercially on microfiche.

Some 19th century economic, agriculture, and mortality census schedules have survived, mainly in State archives but generally available on microfilm. These records frequently can be related to individuals listed in the population censuses.

HW10-3c HWID Census Done Page 100

Census HW10-3c HWID Census Done

Sec 5 Page 100

HW10-4b HWID Track Changes Done Page 1

Algebraic Investigations into International Health and Economic Development

Douglas Robertson and Susan Staats
University of Minnesota

We live in a world in which, on average, people's standard of living is increasing slightly, even for many poor people, yet inequalities between the rich and poor are also increasing. In the 1990's, poverty rates declined slightly in Sub-Saharan Africa, but the number of poor people increased by 140 million (Millennium Development Goals Report 2006, p. 4). Globalization is responsible for desperate working conditions in many parts of the world, and the rich nations are responsible for the problems in the poor nations. We need to cooperate and collaborate. Global development issues are complex, interdisciplinary, and frequently, they are conveyed through mathematical data. Unfortunately, many people try to avoid using mathematics because they perceive it to be beyond their capabilities.

Yet *relatively few* math educators—nor their colleagues in other disciplines—receive the training in global issues to let them guide students *in becoming* critical users of international data. Michael Vern, a multicultural education scholar, writes that “(t)he near absence of a critical global perspective in teacher education programs is unfortunate because we are situated in the most financially and politically privileged and influential nation in the world. (Vern 2002 101-102). Furthermore, learning to access and evaluate international situations through data is in line with the National Council of Teachers of Mathematics connections standard, which recommends that students learn to use math in interdisciplinary contexts ranging from science to social science and medicine, and to use mathematics to examine social issues. This means that students must have opportunities for using mathematics that they have learned to analyze and assess significant social issues like problems in international development.

Insert Figure 1 About Here

Figure 1: Millennium Development Goals. The assessment targets are available at <http://www.un.org/millenniumgoals/>.

In this paper, we describe international issues that can be taught alongside standard algebra topics. We identify sources of data that teachers need to be able to implement the topics along with the specific learning outcomes for international development that teachers can convey to their students.

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Commented [HWID2]: Should we use the word "complicated" instead?

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HW10-5 HWIDf Large Document Done TOC in section 3

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Structure of Computer-mediated Courses	4
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The page numbers on these four pages may be different from yours due to computer and printer setups.

Print pages that contain:
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Index

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HWID

7

Exams and Quizzes

The exams are given to students on paper rather than on the computer. Students may use a calculator on the exams and quizzes. Five exams are given per semester plus a comprehensive final exam. By giving a fairly large number of exams, students are able to study smaller chunks of the course for each exam. This is especially helpful for students who struggle with math. Six quizzes are also given during the semester according to a set schedule, and students are informed about the contents of the quizzes.

Checkpoint Questions

Checkpoint questions consist of one or two questions, that may include **graphics**, over recently covered concepts or skills. They are given to students typically early in the class period and are due by the end of class. Students are encouraged to work together, compare strategies, and determine if their solutions make sense. Students may use any available resource. When students believe that they have answered the question correctly and have provided a sufficient written explanation of how they arrived at the answer, the instructor checks their work. If it is correct and complete, the instructor informs the student of this and collects it so that the score can be recorded. Here is an example of a checkpoint question:

"Use the Quadratic Formula, $x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ to solve $5x^2 - 3x + 1 = 0$.¹

Checkpoint questions also promote student-student interaction, which makes a computer-mediated course feel more like a regular class rather than an open lab. If a student is having difficulty, the instructor provides feedback to point the student in the

¹ Here, quad refers to the number of sides of a square, which has 2 dimensions.

HW10-5 HWIDf Large Document Done Table 1 on Page 14

14 HW10-5 HWIDf Large Document Done

mediated classes were significantly more satisfied than students in lecture classes, $t(334)$

$= 3.39, p = 0.001$.

Course	N	Mean	SD	SEM
Introductory Algebra				
Computer-mediated	65	3.52	0.48	0.06
Lecture	166	3.23	0.63	0.05
Intermediate Algebra				
Computer-mediated	120	3.51	0.46	0.04
Lecture	216	3.33	0.48	0.03

Table 1: Course Satisfaction

The end-of-the-semester survey also asked students about their perceptions of the activities that contributed most to their learning. Computer-mediated students were asked the following question: Which of the following activities resulted in your learning the most mathematics? Students selected from the following choices: (a) using software, (b) doing homework, (c) using the math center, and (d) reviewing for exams. For students in lecture classes, the first choice was changed to "listening to lectures."

The choices "using software" and "listening to lecture" are the primary methods of delivering the instruction in the computer-mediated and lecture formats, respectively.

The results, shown in Table 2, indicated significant differences in the activities that contributed most to student learning according to a chi-square test, $(3, N = 580) = 51.1, p < .001$. Computer-mediated students indicated that using the software was the primary

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BREAK UP THIS PARAGRAPH	2
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Key for Sample-b Exam Questions Page 1

Sample-b Exam Questions Done oldPage 1Sunday, August 2, 2020

Part 1

This study analyzes the citation patterns in an algebra writing assignment completed by students in two sections of college algebra, one that used iPads throughout the semester and one that did not. Students in the iPad section did not prefer to use apps as an information source more than students in the non-iPad section, even though available apps were closely linked to course content. Open-ended assignments are a useful tool in iPad initiatives to gauge student interest in new learning technologies.

The Apple iPad tablet computer has received equal measures of excitement and criticism as an educational tool. The format of a mobile application seems well-suited to educational endeavors because they focus students' attention on specific sets of knowledge and experiences. This is just what students do as they develop knowledge in a class—they reduce disciplinary analysis into smaller skills and bits of knowledge. Like any new technology, however, students must decide whether it is useful to them to spend time learning to use it. In a recent algebra class, students had the opportunity to use iPads as a research tool for a writing assignment on mathematical and social perspectives on HIV epidemics. This article reports on students' citation patterns as a means of judging the extent to which they chose to use iPads as a research tool.

Part 4 is on page 2 of this document.

Part 2

- This is the first lettered item. It contains the word Diskette, which should NOT have the style e1 applied to it.
- This is the second lettered item. It contains the word disk, which should NOT have the style e1 applied to it.
- This is the third lettered item. It contains the word Disk, which should have the style e1 applied to it.

A few universities have introduced iPads, which do not have a Disk, within a wide range of undergraduate classes. Pepperdine University, for example, conducted a three term experimental Disk comparison of iPad- and non-iPad-using classes use across discipline including calculus, business, nutrition, and religion.

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Key for Sample-b Exam Questions Page 2

Page 2Sec 2

Part 3

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Part 3a

SIDE HEAD ONE

Part 3b

SIDE HEAD TWO

Part 3c

Vertex form of the quadratic function: $f(x) = a(x - h_1)^2 + k_1$

Part 4

BREAK UP THIS PARAGRAPH

(a) SKINNY!0.0025
(b) REALLY PORTLY82.1
(c) SOMEWHERE IN BETWEEN177

Part 5

Name	Title	Phone
Melissa	Ms.	555-0000
Doug	Boss	555-9999

¹ By skinny, we mean really thin.

Do NOT hand in these pages for grading.

Key for Sample-b Exam Questions Page 3

HWIDPage 3

Part 6

1) Colors
a) Black
b) Red
i) Light
ii) Dark
c) Green
d) Blue
2) Sizes
a) Six
b) Eight
c) Ten
d) Twelve
i) Medium width
ii) Wide width
iii) Extra wide width
e) Fifteen

More colors are available on our Web site.

Do NOT hand in these pages for grading.

Key for Sample-b Exam Questions Page 101

Sample-b Exam Questions Done old Page 101 Sunday, August 2, 2020

Index

D

disk - 1

Q

quadratic function - 2

R

REALLY PORTLY - 2

Do NOT hand in this page for grading.

Key for Sample-c Graphics and Other Stuff

Practice Questions for Word Exam.

This file provides practice with graphics and columns.

With a permanent position as my ultimate goal, I hope to use the Florida Port Community College Career Center to secure a temporary job.

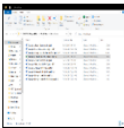
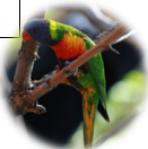
I can be accessible for a flexible number of days or hours and am willing to work in a diversity of businesses or organizations.

As my resume illustrates, I have exceptional computer skills. I am a honor student at FPCC and have outstanding references.

In addition, I have part-time work experience as a software tester, where I perform the following computer activities:

I am available for the purpose of an interview at your convenience. You can contact me by email at jgarcia@alcona.net or by telephone at (727) 555-0347.

Education	Weekly earnings	Yearly Earnings	Lifetime Earnings	Unemployment rate
Doctoral degree	1,743	90,636	4,531,800	1.5%
Professional degree	1,836	95,472	4,773,600	1.5%
Master's degree	1,401	72,852	3,642,600	2.2%
Bachelor's degree	1,173	60,996	3,049,800	2.5%
Associate degree	836	43,472	2,173,600	3.4%
Some college, no degree	774	40,248	2,012,400	4.0%
High school diploma, no college	712	37,024	1,851,200	4.6%
Less than a high school diploma	520	27,040	1,352,000	6.5%

Key for Sample-f Table Sort

Num	BirthDate	LastName	FirstName	State	Weight	Height
21	Oct 5, 1829	Arthur	Chester	VT	231	66
30	Jul 4, 1872	Coolidge	Calvin	VT	211	71
9	Feb 9, 1773	Harrison	William	VA	191	
3	Apr 13, 1743	Jefferson	Thomas	VA	240	
4	Mar 16, 1751	Madison	James	VA	176	64
5	Apr 28, 1758	Monroe	James	VA	192	66
12	Nov 24, 1784	Taylor	Zachary	VA	212	61
10	Mar 29, 1790	Tyler	John	VA	213	66
1	Feb 22, 1732	Washington	George	VA	185	60
28	Dec 28, 1856	Wilson	Woodrow	VA	205	62
34	Oct 14, 1890	Eisenhower	Dwight	TX	189	74
36	Jan 4, 1916	Johnson	Lyndon	TX	233	73
15	Apr 23, 1791	Buchanan	James	PA	214	68
20	Nov 19, 1831	Garfield	James	OH	161	71
18	Apr 27, 1822	Grant	Ulysses	OH	205	61
29	Nov 2, 1865	Harding	Warren	OH	210	68
23	Aug 20, 1833	Harrison	Benjamin	OH	202	68
19	Oct 4, 1822	Hayes	Rutherford	OH	160	63
25	Jan 29, 1843	McKinley	William	OH	250	66
27	Sep 15, 1857	Taft	William	OH	171	73
8	Dec 5, 1782	Buren	Martin	NY	201	68
13	Jan 7, 1800	Fillmore	Millard	NY	236	67
26	Oct 27, 1858	Roosevelt	Theodore	NY	151	60
32	Jan 30, 1882	Roosevelt	Franklin	NY	247	71
22	Mar 18, 1837	Cleveland	Grover	NJ	166	61
14	Nov 23, 1804	Pierce	Franklin	NH	207	69
7	Mar 15, 1767	Jackson	Andrew	NC	207	69
17	Dec 29, 1808	Johnson	Andrew	NC	160	61
11	Nov 2, 1795	Polk	James	NC	211	60
38	Jun 6, 1923	Ford	Gerald	NB	176	65
33	May 8, 1884	Truman	Harry	MO	152	67
2	Oct 30, 1735	Adams	John	MA	173	73
6	Jul 11, 1767	Adams	John	MA	173	60
41	Jun 12, 1924	Bush	George	MA	223	73
35	May 9, 1917	Kennedy	John	MA	191	61
16	Feb 12, 1809	Lincoln	Abraham	KY	152	64
40	Feb 6, 1911	Reagan	Ronald	IL	222	71
31	Aug 10, 1874	Hoover	Herbert	IA	165	70
44	Aug 2, 1956	Obama	Barack	HI	238	74
39	Oct 1, 1924	Carter	Jimmy	GA	244	73
43	May 1, 1946	Bush	George	CT	240	70
37	Sep 5, 1932	Nixon	Richard	CA	171	65
42	Aug 19, 1946	Clinton	Bill	AR	162	70

Do NOT hand in these pages for grading.

Key for Sample-g Merge MAIN Codes Showing

«Skip Record If...»Dear President «LastName»:
We have analyzed your data and find that your height of
«Height» and weight of «Weight» indicates that you
need to LOSE a few poundsyou are in good shape.
Sincerely,
Dr. Watson

Key for Sample-h Merge PRINTED Page 1 of 41

Dear President Arthur:
We have analyzed your data and find that your height of
66 and weight of 231 indicates that you need to lose a
few pounds
Sincerely,
Dr. Watson

Do NOT hand in these pages for grading.

Key for Sample-I Merge Labels Main

Key for Sample-j Merge Labels PRINTED Page 1

«FirstName»	«Next Record»«FirstName»	«Next Record»«FirstName»
«LastName»	«LastName»	«LastName»
«BirthDate»	«BirthDate»	«BirthDate»
«Next Record»«FirstName»	«Next Record»«FirstName»	«Next Record»«FirstName»
«LastName»	«LastName»	«LastName»
«BirthDate»	«BirthDate»	«BirthDate»
«Next Record»«FirstName»	«Next Record»«FirstName»	«Next Record»«FirstName»
«LastName»	«LastName»	«LastName»
«BirthDate»	«BirthDate»	«BirthDate»
«Next Record»«FirstName»	«Next Record»«FirstName»	«Next Record»«FirstName»
«LastName»	«LastName»	«LastName»
«BirthDate»	«BirthDate»	«BirthDate»
«Next Record»«FirstName»	«Next Record»«FirstName»	«Next Record»«FirstName»
«LastName»	«LastName»	«LastName»
«BirthDate»	«BirthDate»	«BirthDate»
«Next Record»«FirstName»	«Next Record»«FirstName»	«Next Record»«FirstName»
«LastName»	«LastName»	«LastName»
«BirthDate»	«BirthDate»	«BirthDate»
«Next Record»«FirstName»	«Next Record»«FirstName»	«Next Record»«FirstName»
«LastName»	«LastName»	«LastName»
«BirthDate»	«BirthDate»	«BirthDate»
«Next Record»«FirstName»	«Next Record»«FirstName»	«Next Record»«FirstName»
«LastName»	«LastName»	«LastName»
«BirthDate»	«BirthDate»	«BirthDate»

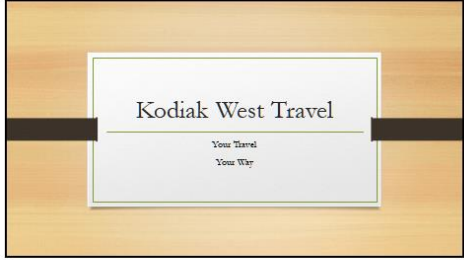
Chester Arthur Oct 5, 1829	Calvin Coolidge Jul 4, 1872	William Harrison Feb 9, 1773
Thomas Jefferson Apr 13, 1743	James Madison Mar 16, 1751	James Monroe Apr 28, 1758
Zachary Taylor Nov 24, 1784	John Tyler Mar 29, 1790	George Washington Feb 22, 1732
Woodrow Wilson Dec 28, 1856	Dwight Eisenhower Oct 14, 1890	Lyndon Johnson Jan 4, 1916
James Buchanan Apr 23, 1791	James Garfield Nov 19, 1831	Ulysses Grant Apr 27, 1822
Warren Harding Nov 2, 1865	Benjamin Harrison Aug 20, 1833	Rutherford Hayes Oct 4, 1822
William	William	William

Do NOT hand in this page for grading.


Millard Fillmore Jan 7, 1800	Theodore Roosevelt Oct 27, 1858	Franklin Roosevelt Jan 30, 1882
Grover Cleveland Mar 18, 1837	Franklin Pierce Nov 23, 1804	Andrew Jackson Mar 15, 1767
Andrew Johnson Dec 29, 1808	James Polk Nov 2, 1795	Gerald Ford Jun 6, 1923

HW11-1 HWID 1A KWT Overview Done (Handout of slides 1,3,4,5)


Sunday, July 24, 2022




1



3



4




5


HW11-1 HWID 1A KWT Overview Done 1

HW11-2 HWID 1B Seattle Done (Handout of slides 1,3,4,5,6,7)


Sunday, July 24, 2022




1




3




4



5



6




7


HW11-2 HWID 1B Seattle Done 1

HW11-3 HWID Bird Done (Handout)

Tuesday, August 4, 2020



1




2


HW11-3 HWID Bird Done 1

HW12-1 HWID 2A Safety Done (Handout) HW12-2 HWID 2B Celebrations Done (Handout of slides 3, 4, 5)


Sunday, July 24, 2022




1




2




3



4




5




6

HW12-1 HWID 2A Safety Done 1

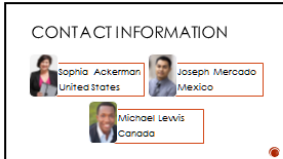
Sunday, July 24, 2022



3



4

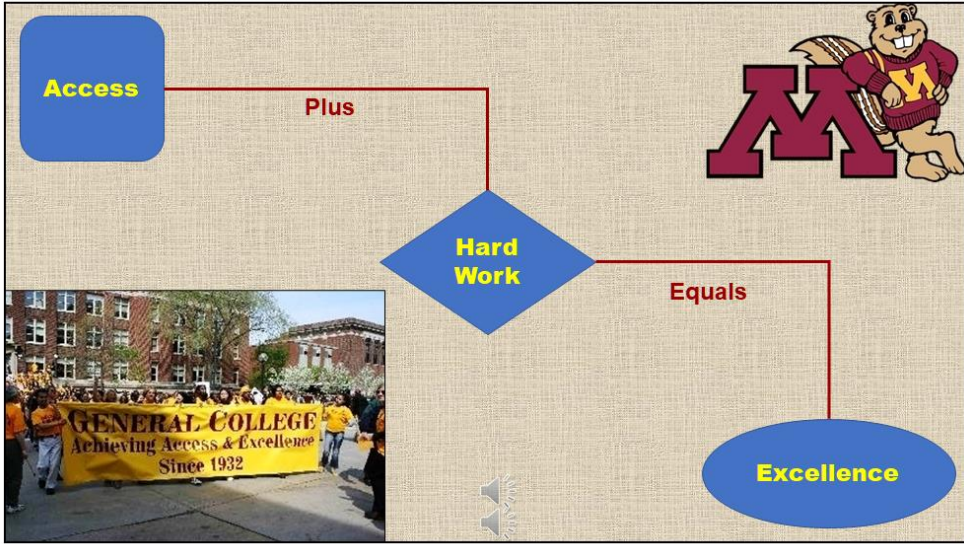


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HW12-2 HWID 2B Celebrations Done 1

HW12-3a HWID Graphics and Sound Done (Handout)

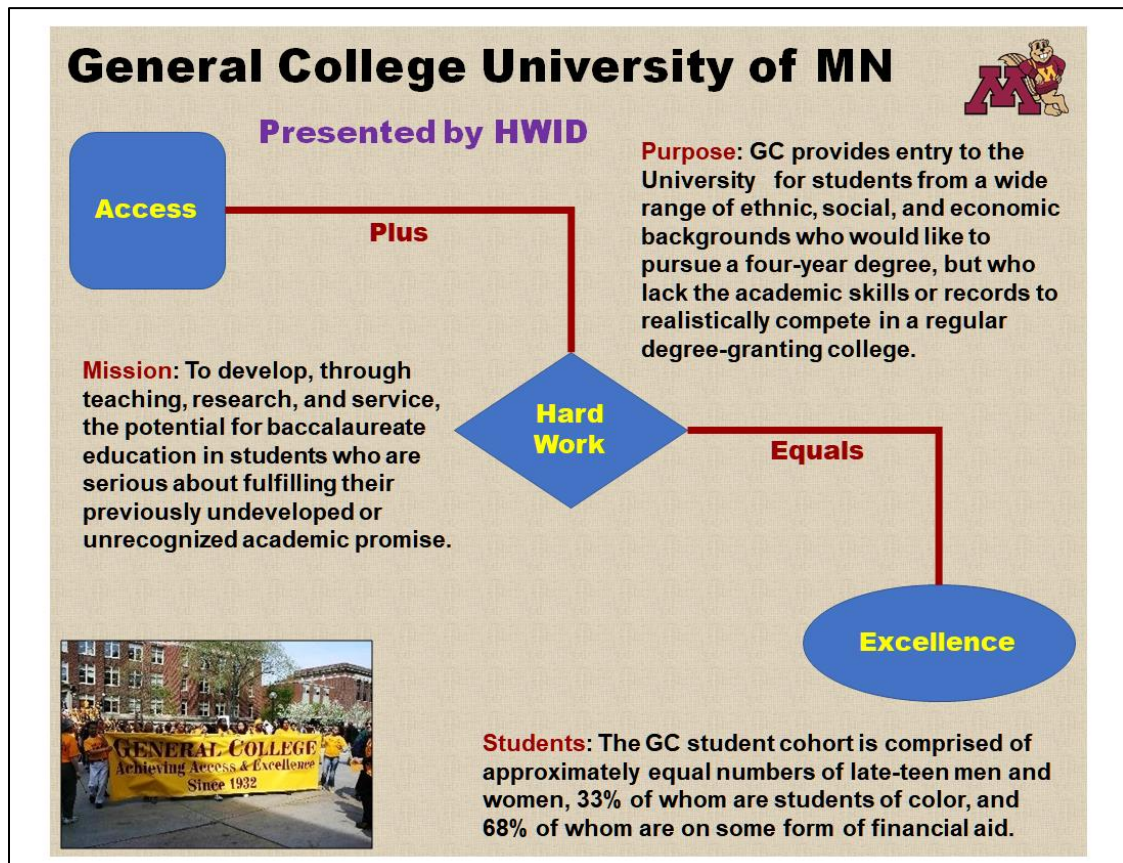
Sunday, July 24, 2022



This is a handout, NOT a slide.

HW12-3a Graphics and Sound Done 1

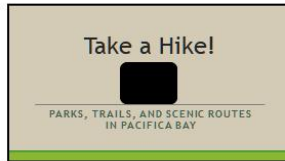
HW12-4 HWID Poster Done (Slide)



This is a slide, NOT a handout.

HW13-1 HWID 3A Trails Done (Handout)

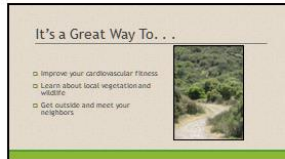
Sunday, July 24, 2022



1



2



3



4



5



6

HW13-1 HWID 3A Trails Done

1

HW13-2d HWID Import from Word and Excel Done (Handout)

Sunday, July 24, 2022

School Attendance

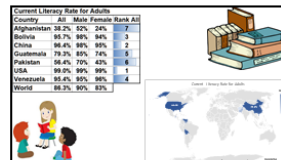
	Attended	Did Not Attend	% Attended
1880	6	35	35
1876	101	103	50
1880	444	452	50
1900	1000	1019	50

1

Education Rates by State

State	High School Rank	HS Rank	Grad Rank	Grad Rank
Alabama	32%	31	32%	31
Alaska	92%	9	28%	34
Arizona	82%	18	32%	34
Arkansas	82%	18	32%	34
California	82%	18	32%	34
Colorado	82%	18	32%	34
Connecticut	82%	18	32%	34
Delaware	82%	18	32%	34
District of Columbia	82%	18	32%	34
Florida	82%	18	32%	34
Georgia	82%	18	32%	34
Hawaii	82%	18	32%	34
Idaho	82%	18	32%	34
Illinois	82%	18	32%	34
Indiana	82%	18	32%	34
Iowa	82%	18	32%	34
Kansas	82%	18	32%	34
Kentucky	82%	18	32%	34
Louisiana	82%	18	32%	34
Maine	82%	18	32%	34
Maryland	82%	18	32%	34
Massachusetts	82%	18	32%	34
Michigan	82%	18	32%	34
Minnesota	82%	18	32%	34
Mississippi	82%	18	32%	34
Missouri	82%	18	32%	34
Montana	82%	18	32%	34
Nebraska	82%	18	32%	34
Nevada	82%	18	32%	34
New Hampshire	82%	18	32%	34
New Jersey	82%	18	32%	34
New Mexico	82%	18	32%	34
New York	82%	18	32%	34
North Carolina	82%	18	32%	34
North Dakota	82%	18	32%	34
Ohio	82%	18	32%	34
Oklahoma	82%	18	32%	34
Oregon	82%	18	32%	34
Pennsylvania	82%	18	32%	34
Rhode Island	82%	18	32%	34
South Carolina	82%	18	32%	34
South Dakota	82%	18	32%	34
Tennessee	82%	18	32%	34
Texas	82%	18	32%	34
Utah	82%	18	32%	34
Vermont	82%	18	32%	34
Virginia	82%	18	32%	34
Washington	82%	18	32%	34
West Virginia	82%	18	32%	34
Wisconsin	82%	18	32%	34
Wyoming	82%	18	32%	34
United States	82%	18	32%	34

2



3

HW13-2d HWID Import from Word and Excel Done

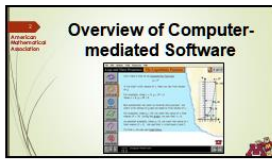
1

HW13-3b HWID Integration Done (Handout)

Thursday, August 6, 2020



1



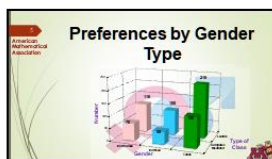
2



3



4

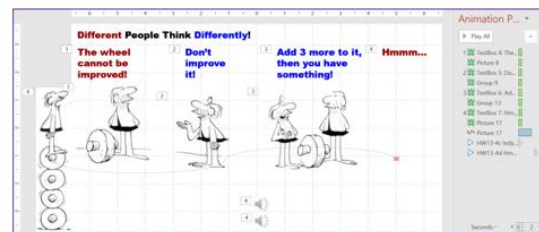


5

HW13-3b HWID Integration Done

1

HW13-4e HWID Communication Word Done (from a Word File)



HW13-4e HWID Communication Word Done

HW13-5 HWID Course Evaluation Done (from a Word File)

HWID

Today's date

HW13-5 Course Evaluation

I accessed the course evaluation web site.

Slide 1 Screenshot for PowerPoint Sample Exam Questions – Do NOT hand in for grading

0 **PowerPoint Sample Exam Questions**

1 **FirstName**

2 **LastName**

3 **HWID**

Type	Small	Medium	Large
Premium Cost	\$1,000	\$1,500	\$2,000
OEM Incentives	\$500	\$800	\$900
Tax Deductions	\$800	\$900	\$1,100
Clean Grants	\$200	\$500	\$800

Slide 2 Screenshot for PowerPoint Sample Exam Questions – Do NOT hand in for grading

0 **Natural Gas Safety**

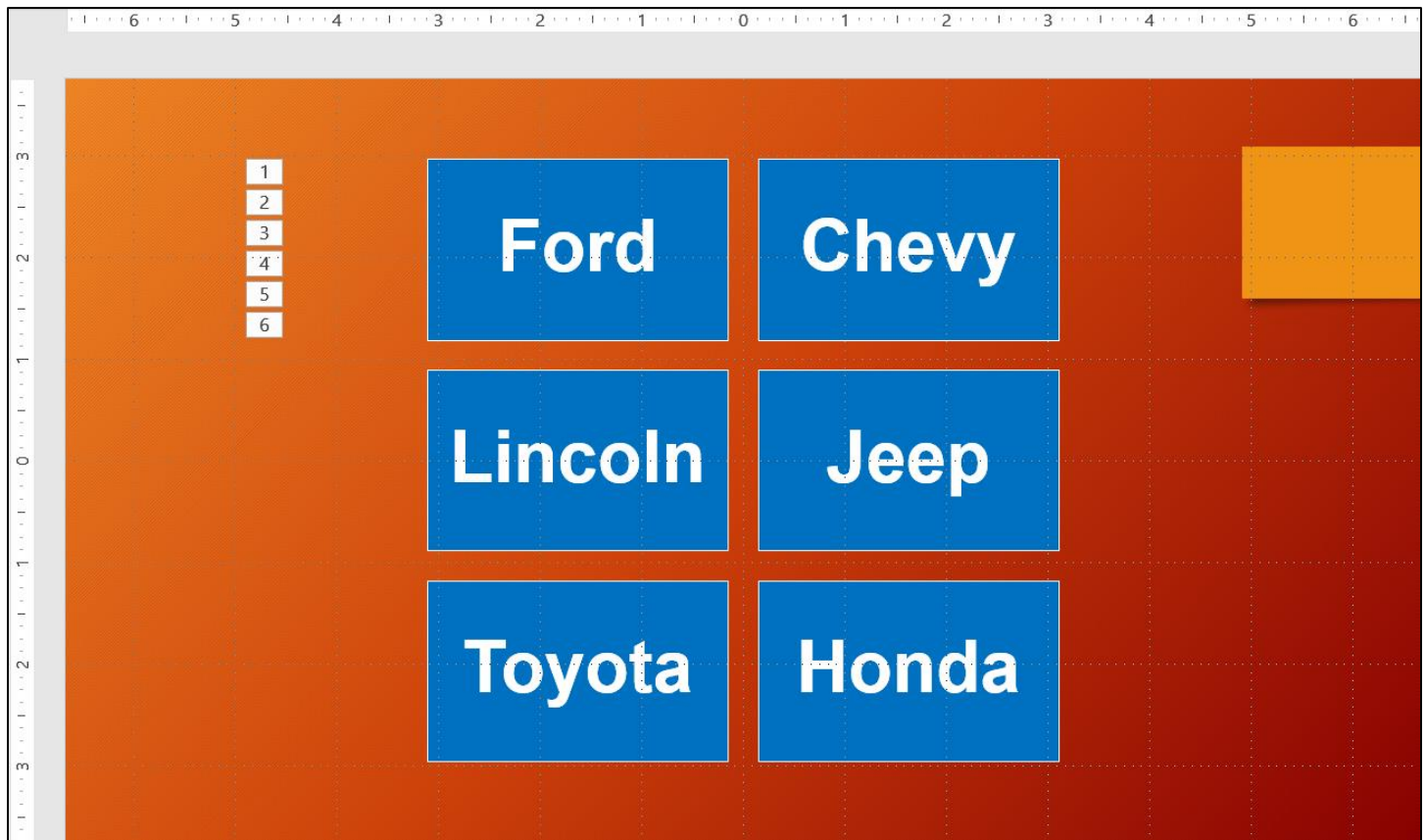
- 1 As a Fuel
- 2 • Light
- 3 • High Temperature
- 4 • Narrow Range
- 5 • Low Toxicity

6 When used correctly, natural gas is a **safe, efficient** source of power.

Burning natural gas does produce some greenhouse gases.

But it is still a **greener solution** than other fossil fuels.

Slide 3 Screenshot for PowerPoint Sample Exam Questions – Do NOT hand in for grading



HW14-1b HWID 1A Faculty Advisors Table Page 1

Lastname Firstname 1A Faculty Advisors

8/11/2020

Faculty ID	Rank	Campus	Last Name	First Name
FAC-0393	Professor	Northeast	Betancourt	Charles
FAC-0767	Professor	Southeast	Soja	Binit
FAC-1133	Professor	Northwest	Bell	Dora
FAC-1283	Professor	Northwest	Hart-Rodriguez	Melanie
FAC-1772	Professor	Southeast	Haq	Mark
FAC-2234	Associate Professor	Southwest	Sweeney	Megan
FAC-2245	Professor	Northwest	Szulkin	Martin
FAC-2289	Assistant Professor	Southeast	Sideris	Dana
FAC-2322	Professor	Southwest	Briggs	Luis
FAC-2375	Associate Professor	Northeast	Torres	Robert
FAC-2377	Associate Professor	Northeast	Kubzansky	Amy
FAC-2877	Professor	Southwest	Treiman	Roger
FAC-2998	Professor	Northwest	Holland	Timothy-John
FAC-3433	Professor	Southeast	Hackett	Jessica
FAC-3567	Associate Professor	Southwest	Michaels	Payne
FAC-3991	Professor	Southeast	Capelle	Arturo
FAC-4901	Professor	Northeast	Saguy	Wilma
FAC-6534	Assistant Professor	Southeast	Lang	Phillippe
FAC-6543	Professor	Southwest	Goldani	ZsuZsa
FAC-6678	Assistant Professor	Southeast	Hasenfeld	Larthia
FAC-7223	Assistant Professor	Northwest	Ong	Joel
FAC-7342	Instructor	Northwest	Villareal	Jose Luis
FAC-8223	Assistant Professor	Southwest	Kilbride	Thea
FAC-8375	Instructor	Southwest	Friend	Gyula
FAC-8523	Associate Professor	Northwest	Abromsky	Alexandru
FAC-8662	Instructor	Southwest	Suh	Kingston
FAC-8727	Assistant Instructor	Southeast	Gilmore	Teshome
FAC-9005	Assistant Instructor	Northwest	Wazir	Paul
FAC-9119	Assistant Instructor	Northeast	Bowman	Nuzhut

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HW14-1c HWID 1A Students Table Page 1

Lastname Firstname 1A Students

8/11/2020

Student ID	Last Name	First Name	Address	City	State
1023045	Fresch	Jenna	7550 Douglas Ln	Austin	TX
2034834	Telfer	Larry	162 Rattlesnake Ln	Red Rock	TX
2345677	Ingram	Joseph	621 Hilltop Dr	Leander	TX
2349535	Vohra	Ashwin	316 Lost Cove Dr	Spicewood	TX
2583697	McElaney	Cleta	13273 Copperfield Dr	Austin	TX
3128456	Wall	WenLi	14380 Ceylon Tea Cir	Pflugerville	TX
3456689	Snyder	Amanda	4786 Bluff St	Buda	TX
3456632	Caputo	Stephanie	1731 Primrose Trl	Round Rock	TX
3569325	Thomas	Carlis	284 4th Ave	Smithville	TX
3572184	Reid	Carla	715 Pampas Ricas Dr	Leander	TX
3586943	Stavish	Joseph	660 Bayou Bend Dr	Buda	TX
3593653	Hernandez	Anna	2132 Mesquite Ln	Georgetown	TX
3768532	Alexander	Rebekah	218 Chapparral Trl	Dale	TX
3852938	Morris	Atonye	1172 Buttonwood St	Bastrop	TX
3856930	Nguyen	Cong	444 E Alamo St	Elgin	TX
4352863	Bradley	Christine	2708 Kickapoo Cavern Dr	Pflugerville	TX
4719238	DiAntonio	Avelina	1008 Sunset Canyon Dr	Dripping Springs	TX
4739502	Alvarez	Eliza	3590 Longhorn Trl	Round Rock	TX
4769304	Furfy	Jana	2107 Edenwood Dr	Austin	TX
4852384	Parkhill	James	105 E Myrtle St	Liberty Hill	TX
5820384	Rose	Edward	555 S Blanco St	Lockhart	TX
5834924	Kakaulian	Anastasia	4822 Turtle Mound Bnd	Austin	TX
5835035	Poon	Laurence	263 Caddis Cv	Kyle	TX
5849320	Soltan	Reza	5498 Wild Foxglove Rd	Spicewood	TX
5860300	Campbell	Daria	162 Rockwood Dr	Wimberley	TX

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HW14-1d HWID 1A All Students Query

HW14-1 HWID 1A All Students Query

8/11/2020

Last Name	First Name	Email	Phone	Student ID
Fresch	Jenna	jfresch@tlcc.edu	(512) 555-7550	1023045
Telfer	Larry	ltelfer@tlcc.edu	(512) 555-2017	2034834
Ingram	Joseph	jingram@tlcc.edu	(512) 555-0717	2345677
Vohra	Ashwin	avohra@tlcc.edu	(512) 555-0302	2349535
McElaney	Cleta	cmcelaney@tlcc.edu	(512) 555-0305	2583697
Wall	WenLi	wwall@tlcc.edu	(512) 555-2329	3128456
Snyder	Amanda	asnyder@tlcc.edu	(512) 555-9120	3456689
Caputo	Stephanie	scaputo@tlcc.edu	(512) 555-2330	3456632
Thomas	Carlis	cthomas@tlcc.edu	(512) 555-0301	3569325
Reid	Carla	creid@tlcc.edu	(512) 555-2026	3572184
Stavish	Joseph	jstavish@tlcc.edu	(512) 555-9360	3586943
Hernandez	Anna	ahernandez@tlcc.edu	(512) 555-0301	3593653
Alexander	Rebekah	ralexander@tlcc.edu	(512) 555-1017	3768532
Morris	Atonye	amorris@tlcc.edu	(512) 555-1018	3852938
Nguyen	Cong	cnguyen@tlcc.edu	(512) 555-1004	3856930
Bradley	Christine	cbradley@tlcc.edu	(512) 555-2013	4352863
DiAntonio	Avelina	adiantonio@tlcc.edu	(512) 555-2319	4719238
Alvarez	Eliza	ealvarez@tlcc.edu	(512) 555-2025	4739502
Furfy	Jana	jfurfy@tlcc.edu	(512) 555-2064	4769304
Parkhill	James	jparkhill@tlcc.edu	(512) 555-2323	4852384
Rose	Edward	erose@tlcc.edu	(512) 555-2019	5820384
Kakaulian	Anastasia	akakaulian@tlcc.edu	(512) 555-2031	5834924
Poon	Laurence	lpoon@tlcc.edu	(512) 555-0304	5835035
Soltan	Reza	rsoltan@tlcc.edu	(512) 555-9362	5849320
Campbell	Daria	dcampbell@tlcc.edu	(512) 555-1016	5860300

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HW14-1e HWID 1A Faculty Advisors Report



HW14-1 HWID 1A Faculty Advisors

Tuesday, August 11, 2020

1:28:00 PM

Campus	Last Name	First Name	Email
Northwest	Abromsky	Alexandru	aabromsky@tlcc.edu
Northwest	Bell	Dora	dbell@tlcc.edu
Northwest	Betancourt	Charles	cbetancourt@tlcc.edu
Northwest	Bowman	Nuzhut	nbowman@tlcc.edu
Southwest	Briggs	Luis	lbriggs@tlcc.edu
Southeast	Capelle	Arturo	acapelle@tlcc.edu
Southwest	Friend	Gyula	gfriend@tlcc.edu
Southeast	Gilmore	Teshome	tgilmore@tlcc.edu
Southwest	Goldani	ZsuZsa	zgoldani@tlcc.edu
Southeast	Hackett	Jessica	jhackett@tlcc.edu
Southeast	Haq	Mark	mhaq@tlcc.edu
Northwest	Hart-Rodriguez	Melanie	mrodriguez@tlcc.edu
Southeast	Hasenfeld	Larthia	lhasenfeld@tlcc.edu
Northwest	Holland	Timothy-John	tjholland@tlcc.edu
Southeast	Kilbride	Thea	tkilbride@tlcc.edu
Northwest	Kubzansky	Amy	akubzansky@tlcc.edu
Southeast	Lang	Phillippe	plang@tlcc.edu
Southwest	Michaels	Payne	pmichaels@tlcc.edu
Northwest	Ong	Joel	jong@tlcc.edu
Northwest	Saguy	Wilma	vsaguy@tlcc.edu
Southeast	Sideris	Dana	dsideris@tlcc.edu
Southeast	Soja	Binit	bsoja@tlcc.edu
Southwest	Suh	Kingston	ksuh@tlcc.edu
Southwest	Sweeney	Megan	msweeney1@tlcc.edu
Northwest	Szulkin	Martin	mszulkin@tlcc.edu
Northeast	Torres	Robert	rtorres@tlcc.edu
Southwest	Treiman	Roger	rtreiman@tlcc.edu
Northwest	Villareal	Jose Luis	jvillareal@tlcc.edu
Northwest	Wazir	Paul	pwazir@tlcc.edu

HW15-1b HWID 2A No Credits Query Done (Word Doc) HW15-2b HWID 2B Tennis or Swimming Queries Done (Word Doc)

HW15-1b 2A No Credits Query, HWID

HW15-1b HWID 2A No Credits Query Done saved on Sunday, July 24, 2022

HW15-2b 2B Tennis or Swimming Queries, HWID

HW15-2b HWID 2B Tennis or Swimming Queries Done saved on Sunday, July 24, 2022

HW15-2c HWID 300 or More Query Excel Done (Excel Doc) HW15-2d HWID 2B Awards May-June Query Done

Scholarship Name	Sport	Amount
Texas State Baseball Association	Baseball	\$500.00
Texas State Baseball Association	Baseball	\$300.00
Roundball Academic Achievement Award	Basketball	\$500.00
Austin Sports Fellowship Award	Basketball	\$500.00
Hoops National Winner Award	Basketball	\$400.00
Hoops Fellowship Award	Basketball	\$500.00
Hoops Sports Award	Basketball	\$500.00
Austin Sports Award	Basketball	\$500.00
Texas Sportswomen Foundation Award	Basketball	\$300.00
Austin Jump Ball Award	Basketball	\$300.00
Austin Sports Fellowship Award	Football	\$500.00
Texas Science Achievement Award	Football	\$750.00
The Touchdown Alumni Association Award	Football	\$600.00
Round Rock Country Club Award	Golf	\$300.00
Dolphin Club Award	Swimming	\$300.00
Rivers and Parks Foundation Award	Swimming	\$750.00
Bluebonnet Country Club Foundation Award	Swimming	\$400.00
Michael Fresch Foundation Award	Tennis	\$400.00
Joseph Ingram Memorial Award	Tennis	\$400.00

HW15-2c: HWID 300 or More Query Excel Done

2B \$300 or More Query

2B Awards May-June Query

8/12/2020

Scholarship Name	Sport	Amount	Award Date
Texas Sportswomen Foundation Award	Basketball	\$300	5/6/2022
Austin Sports Fellowship Award	Football	\$500	5/1/2022
Austin Country Club Award	Golf	\$200	6/25/2022
Round Rock Country Club Award	Golf	\$300	5/23/2022
Bluebonnet Country Club Foundation Award	Swimming	\$400	5/23/2022
Texas Lakes Sportsmanship Award	Swimming	\$100	5/23/2022
District Tennis Club Leadership Award	Tennis	\$200	5/6/2022
Pflugerville Academic Achievement Award	Volleyball	\$250	5/21/2022

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