Office of Instructional Technology

Microsoft Excel 2016

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Contents

Introduction to Excel 2016 3
- **Opening Excel 2016** 3
- **Office 2016 "Ribbon"** 3
- **The "Quick Access" toolbar** 4
- **File Tab** 5
- **New** 5
- **Save As** 5
- **Print** 6

EXCEL Worksheets 7
- **Worksheet** 7
- **Title Bar** 7
- **Adding and Renaming Worksheets** 7
- **Cell Reference** 7
- **Copying/Pasting** 7
- **Mini Toolbar** 8
- **AutoFill** 8
- **Cell Reference when copying Formulas or Functions** 8
- **Auto Complete** 9
- **Setting Up a Spreadsheet with Data** 9

Home Tab 11
- **Sorting Information** 11
- **Filtering information** 11

Number Formatting 12

Example #1: Changing the format of the date: 11/21/2014 to show the day of the week and the month spelled out. 12

Insert Tab 13

Inserting a Header and Footer 13

Using Tables to Sort Information 13

Creating Charts 14

Page Layout Tab 16

Formula Tab 17

Date & Time 17

Adding Values 17

Simple subtraction 18

Complex Subtraction 18

Data Tab 20

Review Tab 22

Adding comments 22

Showing All Comments 22

Protecting information in a Sheet 22

Spell Check 22

View Tab 23

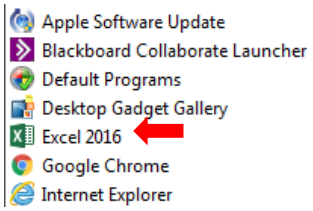
Workbook Views Group 23

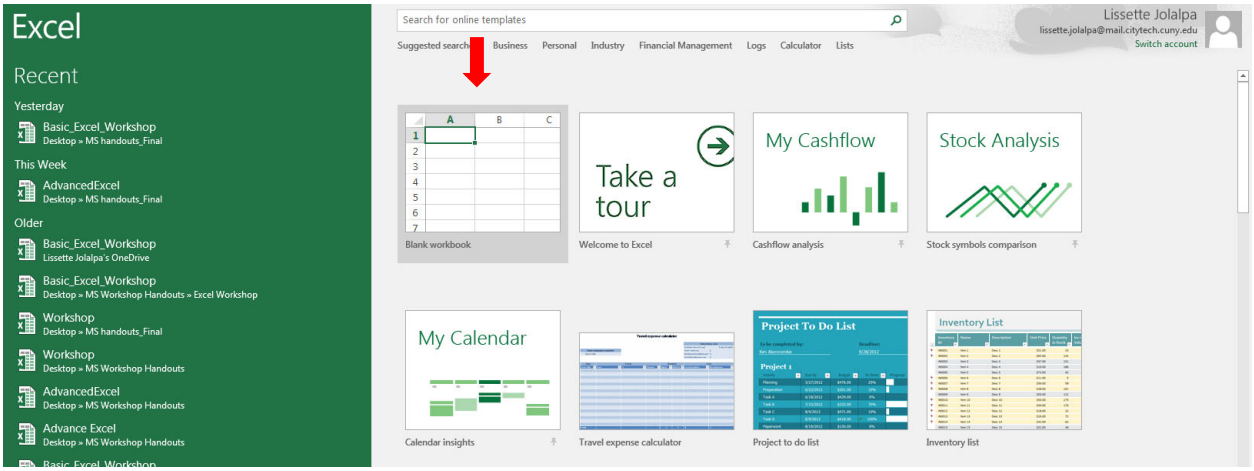
New Features: Microsoft Excel 2016 24

Introduction to Excel 2016

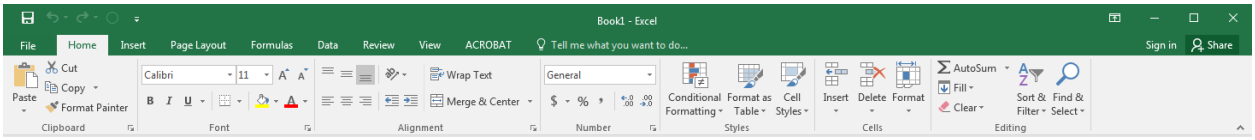
Opening Excel 2016

- Begin by clicking on the bottom left corner icon on the desktop.
- From All Programs, click on Excel 2016
- You have the option of selecting a blank workbook, opening a recent workbook, or choosing a template.
- Blank Workbook is generally selected.





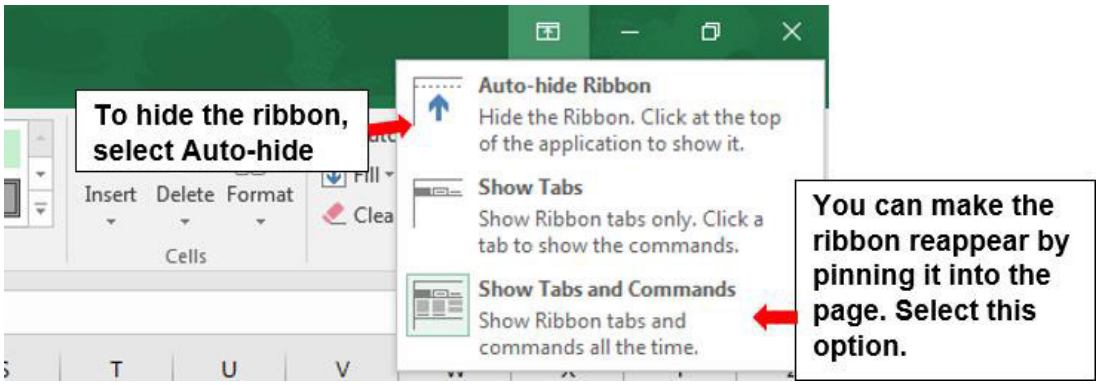
Office 2016 "Ribbon"



- Ribbon: The work bar at the top of the Excel workbook, contains several tabs and commands.
- The tabs located within the ribbon are the following:

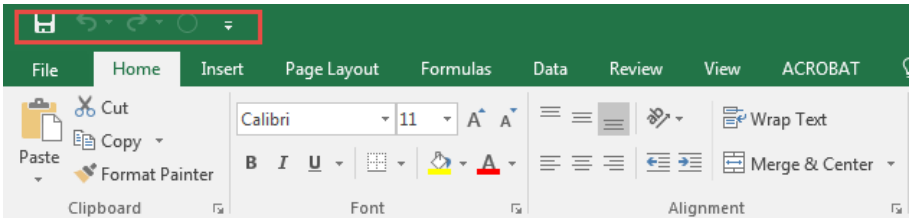
- There are various features allocated inside the ribbon such as style formatting, paragraphs, formatting numbers, formula insertion, and setting up pages before printing them out.

- Hiding and unhiding the ribbon from the page is possible by going to the upper right hand corner of the page.

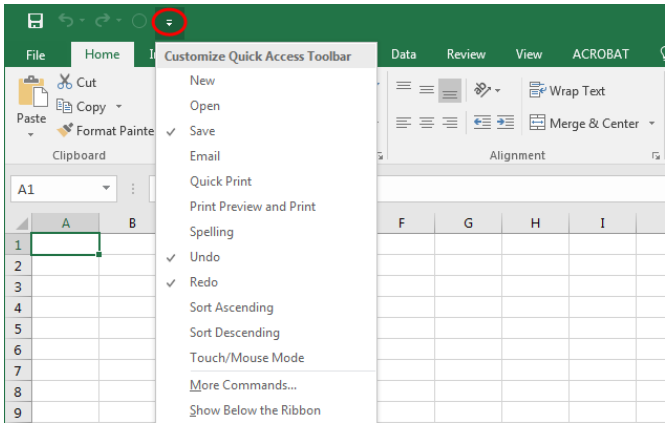


The "Quick Access" toolbar

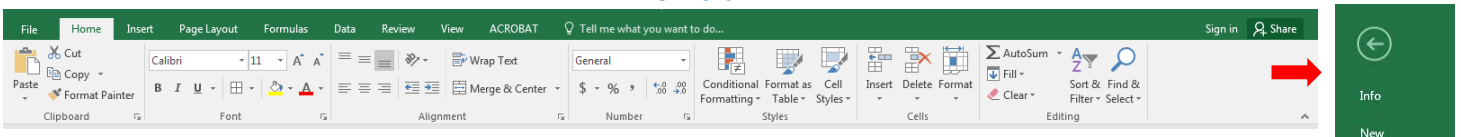
- Located on the upper left hand corner of the Excel workbook.
- Used to save a file, undo or redo any changes made to the worksheet.



- Can be customized to add or remove buttons from the quick access toolbar.

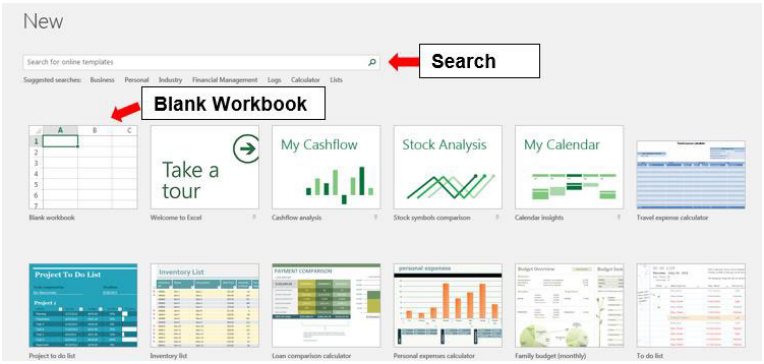


File Tab



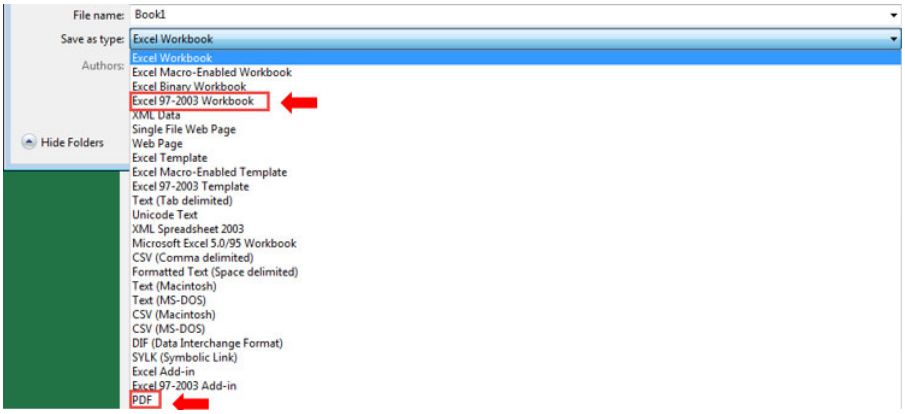
New

- Templates are ready made documents with different styles offered by Excel which can be modified to suit your needs.
- To open a new template, click on FILE → New
- Select any template installed on your computer or download templates by searching for them.
- A Blank Workbook can also be created by selecting it.



Save As

- **Save As** is used to save your workbook into a specific location. You can save it on your desktop or anywhere within your computer.
- Workbooks can be saved to have a backwards compatibility with previous versions of Microsoft Office, such as Office 2003 and /or PDF formats.

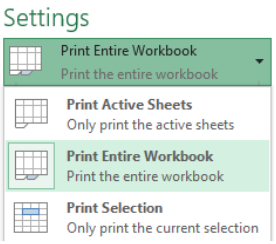


Print

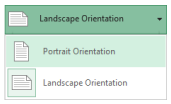
- You can preview the document before printing. There are multiple options offered to print out your workbook or individual worksheets.

- To print you can go into FILE → Print

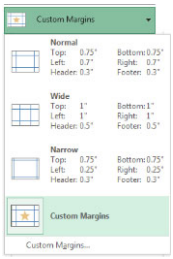
- Print Entire Workbook Drop-Down:
  - Print the worksheet you are currently in. (Active Sheets)
  - Print the entire Workbook. (Entire Workbook)
  - Specifically selecting a section from the worksheet to print. (Selection)



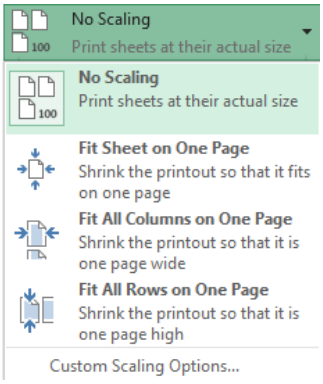
- Landscape Orientation Drop-Down: By default the orientation of the page is set to landscape (horizontal) but can be changed to print in a portrait (vertical) layout.



- Custom Margins Drop-Down: The margins on the printed page are set to an inch but can be changed to wide or narrow, customization is also available.



- No Scaling Drop-Down:
  - Worksheets do not have a scaling by default.(No Scaling)
  - They can be set to fit the entire worksheet on one page, **recommended**. (Fit Sheet on One Page)
  - Worksheets can be reduce to fit all columns in which data exist (represented by letters) A B C on one page. (Fit all Columns on One Page)
  - Worksheets can be reduce to fit all rows in which data exist (represented by numbers) on one page (Fit all Rows on One Page). 1 2 3



EXCEL Worksheets

Worksheet

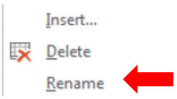
- The name of the first Excel file will be Book1 by default and contains one worksheet labeled sheet1,

Title Bar

- The title of the workbook is located on the top middle section of the workbook :

Adding and Renaming Worksheets

- At the bottom of the workbook you will see your current sheet. To add more worksheets to the workbook, click on the + option.

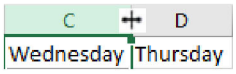
- To give your worksheet a new name, you need to double-click on the sheet name or right-click on the sheet for options on this particular worksheet: 

Cell Reference

- Formatting information: Columns are vertical and are represented by letters. Rows are horizontal and are represented by numbers. The corner of your worksheet will be a "Cell" with a reference address of A1:

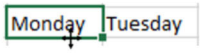
Auto Fit

The green areas selected are called headers. You can expand the header of **Column D** by first clicking on the column itself, make sure the pointer becomes a double pointed arrow ✢, double-click between headers "D" and "E" to make the header automatically adjust the width.

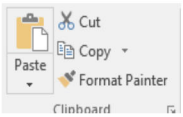
- Another way to make text fit within a given cell is to single click on the column, find the double pointed arrow, click and drag to the right for the desired width. 

Copying/Pasting

- To copy information over to another cell, make sure your cursor looks like a white cross. ✚ Hold the mouse down, drag and select the desired information you need to copy, when you are finish selecting, release the mouse.

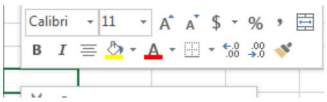
- To move information to another cell, select the information you want to move and make sure the pointer looks like a four arrow cross. ✢ Drag the cell until you reach the desired destination to paste it to. 

- Another method of copying information over to another cell is by selecting the data to be copied over into another cell, click on **COPY** from the **HOME Tab**, select the cell to place the data in, and click on **PASTE**.



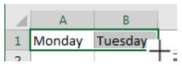
Mini Toolbar

- Allows you to format your information as you go by simply right-clicking on the cell where the desired information to be formatted is located:



AutoFill

- Information can be completed for you automatically through the creation of a pattern.
- To auto fill (complete) the remaining cells, select the range of cells where the information to be filled is located, make sure to see the plus sign arrow on the bottom right corner of the cell.
- Left click, hold and drag the plus sign across the cells.



	A	B	C	D	E
1	Monday	Tuesday	Wednesday	Thursday	Friday

Cell Reference when copying Formulas or Functions

- When copying information such as equations or formulas across several cells, there are two types of referencing that can be made: Relative reference and absolute reference.
- **Relative reference** is used by default in Excel when auto filling information to other cells. Whenever formulas or functions are copied to other cells, the reference of the formula will change to match the location where it is currently located.
- Example:

	A	B	C
1	5	10	=SUM(A1:B1)
2	10	20	=SUM(A2:B2)
3	20	30	=SUM(A3:B3)
4	30	40	=SUM(A4:B4)

When adding two cells, the formulas adjust to the location of both cells to perform the calculation.

- **Absolute reference** makes the location of the cell used in a formula remain constant through the use of the **$**. Place it in front of the cell reference when typing it into the formula, and your data to be calculated does not adjust automatically to its location.
- For example:

	A	B	C
1		40%	Storewide
2	Price	Item	Final Price
3	100	Jeans	60
4	150	Jacket	90
5	50	Shirt	30

→

	A	B	C
1		0.4	Storewide
2	Price	Item	Final Price
3	100	Jeans	=A3-(A3*B1)
4	150	Jacket	=A4-(A4*B1)
5	50	Shirt	=A5-(A5*B1)

The data located in B1 is used throughout the rest of cells.

The cell B1 contains the value 40% that will be used throughout the cells in order to calculate the final price after the 40% has been deducted. Formulas without a $ positioned in front of it changes in order to adjust to a new location when auto filling. A $ placed in front of B and 1 to keep the value constant when auto filling.

Auto Complete

- Automatically completes information for you when it has been repeated by filling in the data within the cell. If it is not what you wanted to type, simply continue to type and the suggested entry will disappear.

	A	B
1	Professor	Department
2	Dr.Pagano	Psychology
3	W.Ross	
4	J. Twani	Chemistry
5	W.Ross	

Professor's names have been entered within the cells. Once the letter "W" is typed, Excel will autocomplete the remaining characters based on the previous information entered.

Setting Up a Spreadsheet with Data

- For the most general part, headers are entered in the first column to describe the information which will be typed into the cells, followed by data within the rows.

	A	B	C	D
1	**Course**	**Professor**	**Time**	**Credits**
2	CST1101	B. Ross	M,W: 10:00 -11:40 am	3
3	Physics 1101	K. Doe	T, Th: 3:00 -4:30 pm	3
4	English 1101	L. Abramowitz	F: 10:00 -11:40 am	3

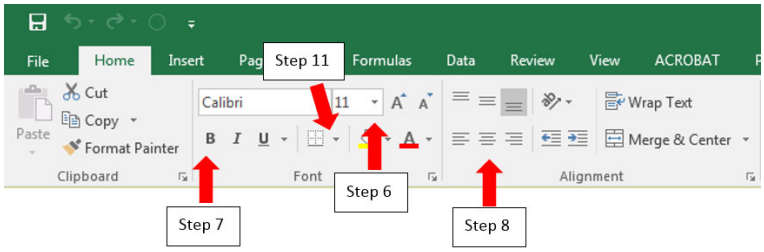
Headers

Activity 1

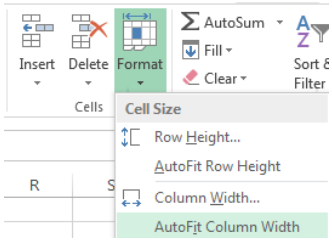
1. Open up a blank Excel 2016 workbook.
2. Type **Monday** into cell A1.
3. Type **Tuesday** into cell B1.
4. Type **Wednesday** into cell C1.

	A	B	C
1	Monday	Tuesday	Wednesday

5. Select cells A1-C1.

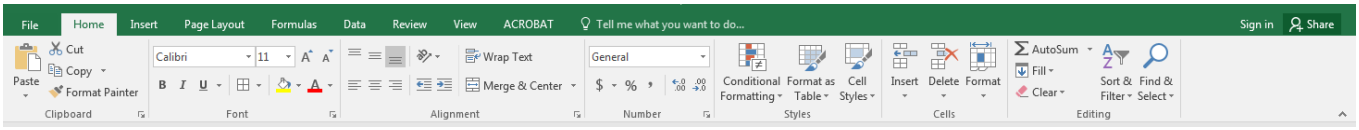


6. Change Font Size to 16.
7. Click the Bold button to change text to bold.
8. Click the Center button to center text.
9. Adjust cell widths by using the auto fit feature.
   a. Select the cell containing **Wednesday**.
   b. From the **Home Tab** under **Cells** group, click on **Format** →**AutoFit Column Width**



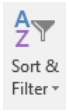
10. Fill out the remaining days of the week in cells D1-G1 by using the auto fill feature.
11. Select cells A1-G1 and add borders around it (All Borders).

Home Tab



Sorting Information

- Sort & filter utility

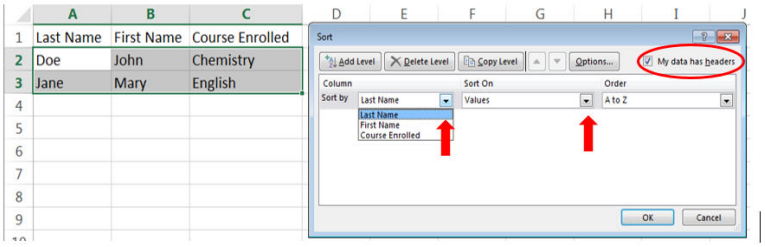


- Tool used to quickly organize data.
  - Click on any cell where the information needs to be sorted.

	A	B	C
1	Last Name	First Name	Course Enrolled
2	Doe	John	Chemistry
3	Jane	Mary	English

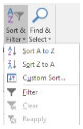
  - From the home tab, go to the **Editing** group, click on **Sort & Filter**
  - Click on **Custom Sort**

  - You will also need to check the box that reads: **My data has headers,** if you have any titles in the first row.



Sorting by columns is available. In addition to values, cell color, font color, and cell icon which are located under **Sort On**. The information can also be ordered from A to Z or Z to A.

Filtering information

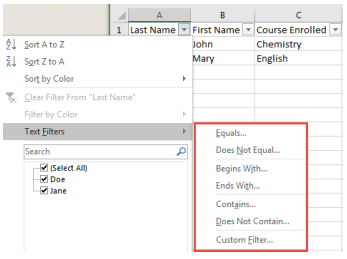


Feature use to obtain specific information from a worksheet.

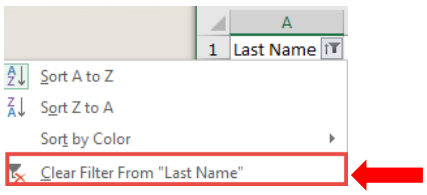
- Select desired information to be filtered:
- Use the Sort & Filter utility.
- Select Filter.
- A drop-down menu will be placed at the end of every heading:

	A	B	C
1	Last Name	First Name	Course Enrolled
2	Doe	John	Chemistry
3	Jane	Mary	English

- Several options for filtering information are available in the drop-down menu on every header.



- To clear the filter, click on the drop-down menu heading.

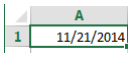


Number Formatting

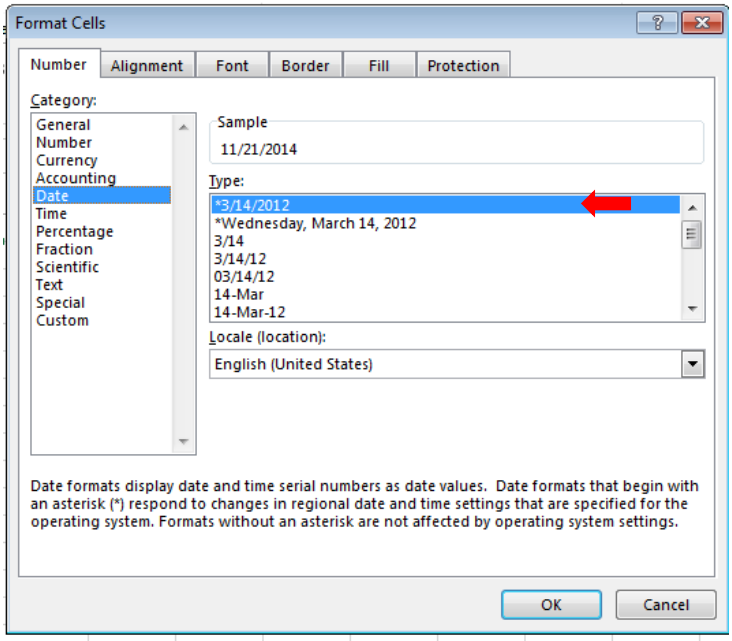
- Numbers can be formatted into various formats:
  - **Number:** Provides an option to add or remove decimal places to a number.
  - **Currency:** Adds a **$** symbol to number values, as well as 2 decimal places.
  - **Accounting:** Formats number values to fit the entire column while adding a **$** symbol and 2 decimal places.
  - **Date:** Formats the visual display of date values.
  - **Time:** Formats the visual display of time and date values.
  - **Percentage:** Multiplies the value by 100 while adding 2 decimal places along with a **%** symbol at the end of the value.

Example #1: Changing the format of the date: 11/21/2014 to show the day of the week and the month spelled out.

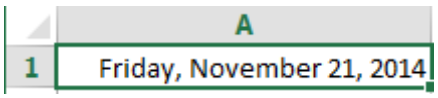
- Select the cell where the value exists:



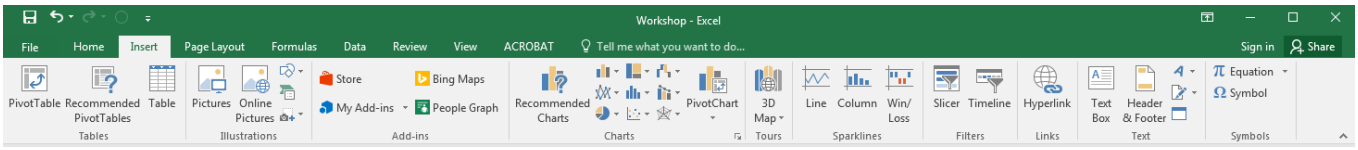
- Select the number icon



- Choose which format you would like the date to be formatted into and select **OK**.



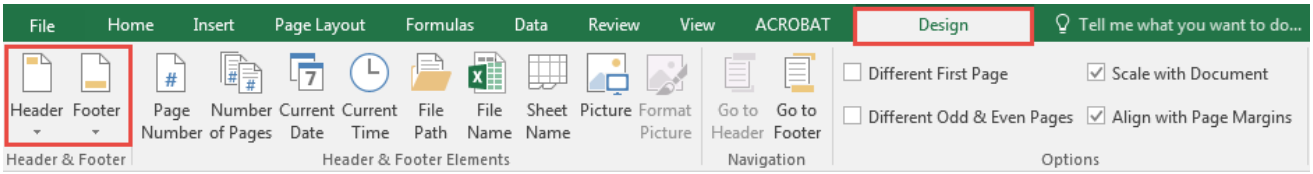
Insert Tab



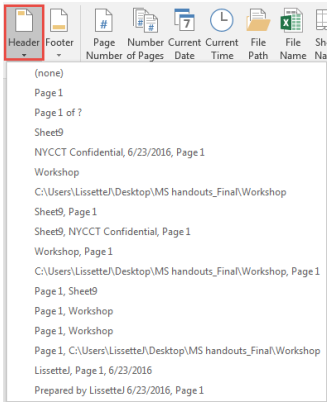
Inserting a Header and Footer

- Click on the Header & Footer button.

When the header is selected you get a new formatting tab called “Design” tab:



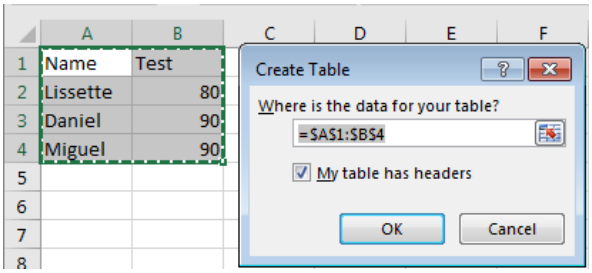
- Click on the header to add a header. Various options are offered from which you can choose from.
- When you are done, click on the Design tab to add a footer.
- Excel will keep you in the Design tab until you click on another cell.



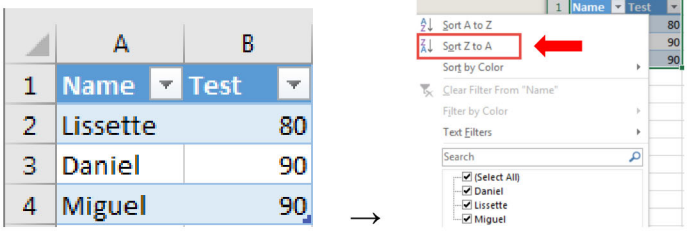
Using Tables to Sort Information

- Click on the Table button.

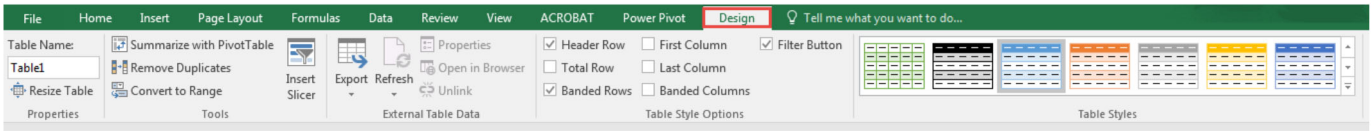
- Tell the table where your data is located. You can select the data with your mouse or enter the cells into the prompt.



- Tables have filter and sorting capabilities:

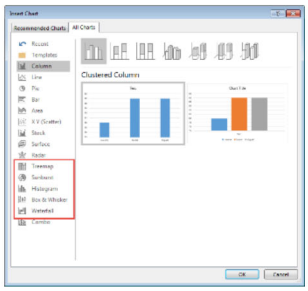


When the table is selected you get a new formatting tab called “Design” tab:

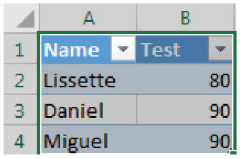


Creating Charts

- The following charts are now offered in Excel 2016:

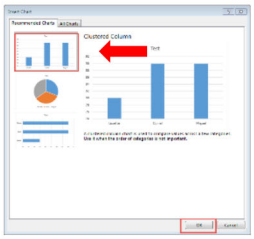


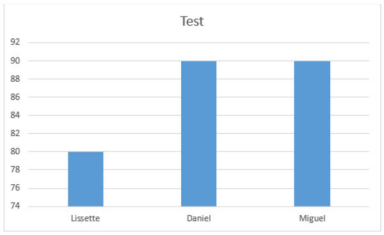
- Select the information to be included:



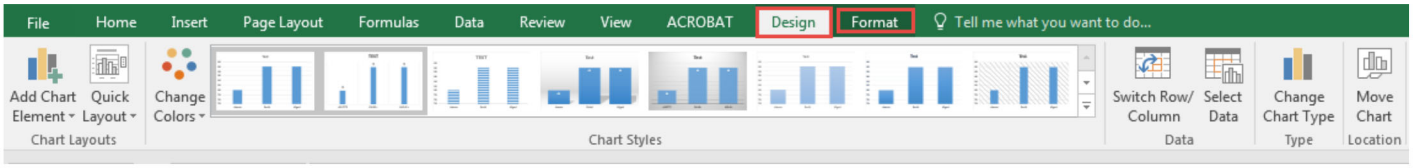
Go to

→ Select type →





When the chart is selected a new formatting tab pertaining to charts is displayed - Chart tools:



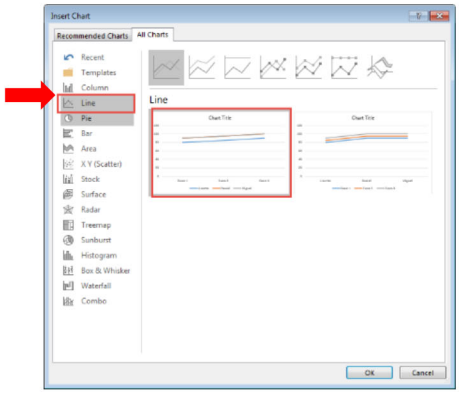
Activity 2: Creating a Line Chart

1. Open a new worksheet.
2. Enter the following information:

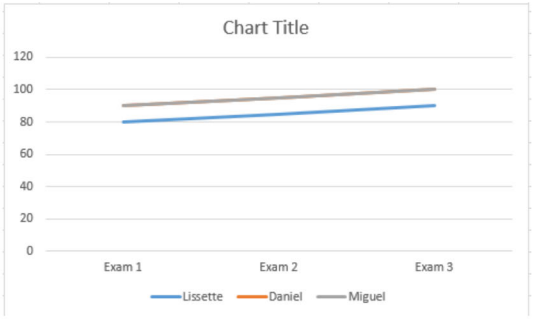
	A	B	C	D
1	Name	Exam 1	Exam 2	Exam 3
2	Lissette	80	85	90
3	Daniel	90	95	100
4	Miguel	90	95	100

3. Select cells A1 to D4.
4. From the **Insert Tab**, click on the **Recommended Charts** icon:

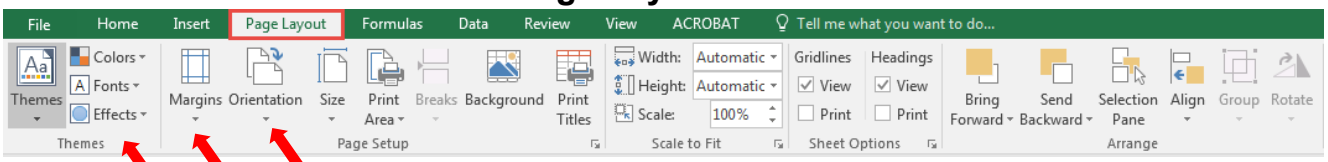
.
5. Go to the **All Charts Tab**.
6. Select the **Line** option.



7. Click on **OK**.

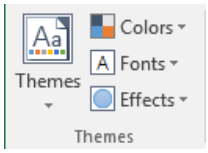


Page Layout Tab

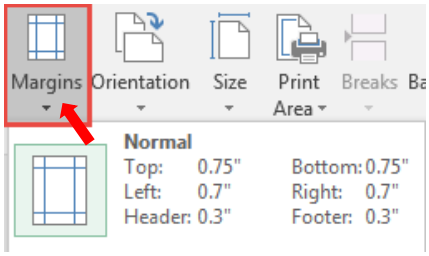


Add effects to your information:

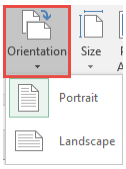
- Selecting the Themes, Colors, Fonts and Effects group:



- Margins are customizable according to your needs:

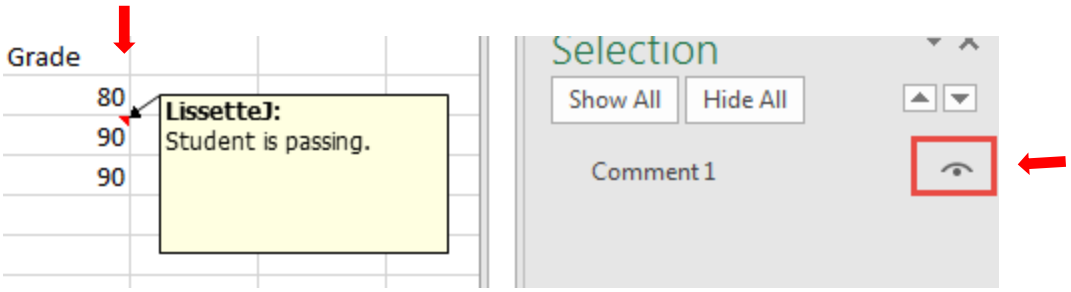


- Page Orientation – Landscape or Portrait:

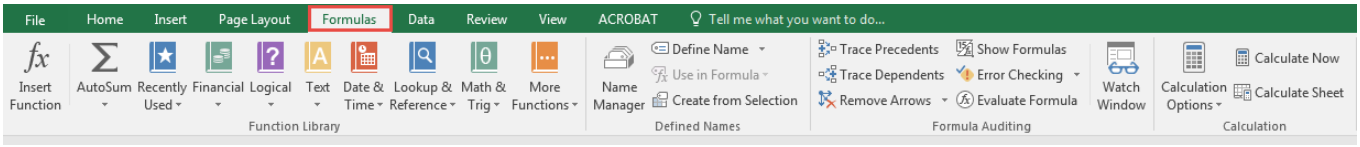


- Selection Pane allows you to see existing format located within the **Page Layout Tab** under the **Arrange Group**:

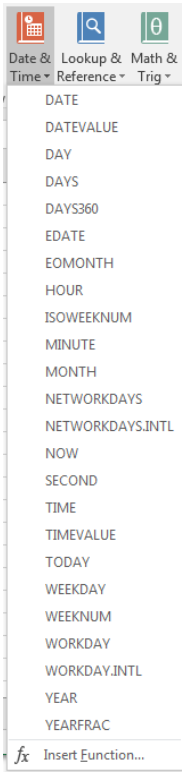
- Click on the “Eye” icon on the right hand side panel to view formats or items of your data.



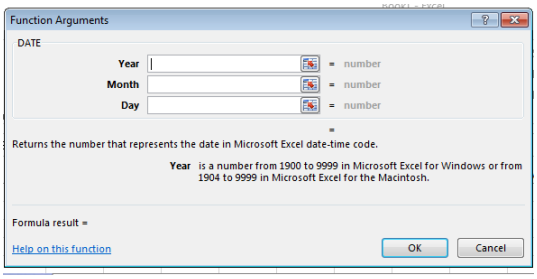
Formula Tab



Date & Time



- There are several ways to input date & time into an Excel worksheet.
- Select **Date & Time** → DATE and enter the year, month and day.



- Select **Date & Time** → TODAY a function argument prompt appears, select **OK**, today's date will be display.

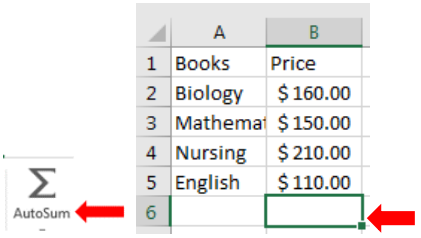
	A
1	6/27/2016

- Select **Date & Time** → NOW . A function argument prompt appears, select **OK**, today's date and time will be display.

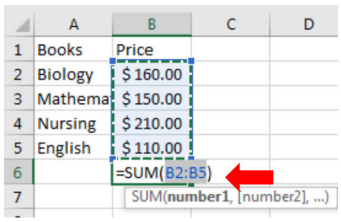
	A
1	6/27/2016 15:08

Adding Values

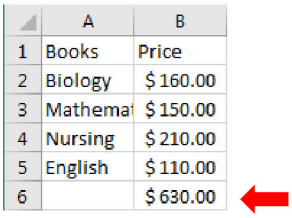
- Simple summation can be done by using the AutoSum feature.
  - Begin by typing numbers into the cells you would like to add.
  - Choose a cell where the final summation will appear.
  - Go into the **Formulas tab** and select the **AutoSum** feature.
  - Select cells to be added. The sum will appear in the bottom blank cell along with the cell references of the cells added:
  - You can also add values manually by beginning to type **=** into the cell and click on each cell you want to add. Add a + sign in between the cells.



	A	B
1	Books	Price
2	Biology	$ 160.00
3	Mathema	$ 150.00
4	Nursing	$ 210.00
5	English	$ 110.00
6		

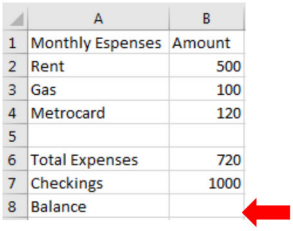


→



Simple subtraction

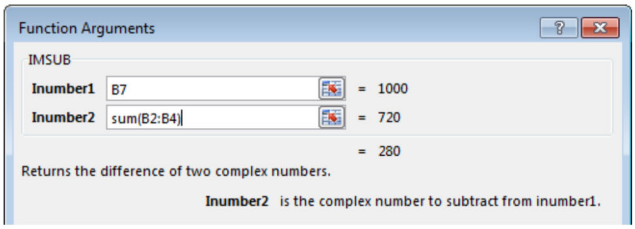
- Select a cell where the subtraction operation will be performed.
- Simply type = within the cell where the final subtraction will appear (B8). Click on cell B7, type the minus sign – and then click on cell B6 (=B7-B6) = 280, an = sign is used at the beginning to initiate the operation.



Complex Subtraction

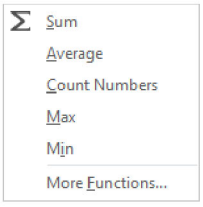
- Click on the insert function button:

- Search for IMSUB (sum – another sum)
- Identify the information to be subtracted from another.
- Subtract B7-SUM(B2:B4) = 280



- Other functions included in the AutoSum button menu are the following:

→



Activity 3 : Performing Complex Subtraction

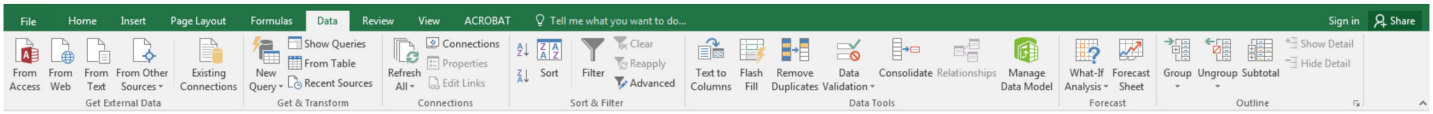
1. Open a blank worksheet and Save As Activity4.
2. Type Name in cell A1.
3. Type Monday in cell B1.
4. Type Tuesday in cell C1.
5. Type Wednesday in cell D1.
6. Type 3 names in cells A2-A4.
7. Type 3 amounts in cells B2-B4, C2-C4, and D2-D4.
8. Type Savings in cell A6.
9. Type 200 in cells B6-D6.
10. Type Total Spent in cell A8.
11. Type Amount Remaining in cell A10.
12. Select cell B8 and click on the AutoSum button.

13. Select cells B2-B4 and hit Enter.
14. Select cell C8 and click on AutoSum.
15. Select cells C2-C4 and hit Enter.
16. Select cell D8 and click on Autosum.
17. Select cells D2-D4 and hit Enter.
18. Select cell B10 and click the Fx button.

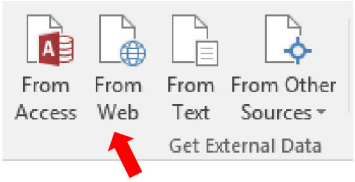
19. Search and Select IMSUB command.

20. Select B6 for Inumber1.
21. Select B8 for Inumber2.
22. Click OK.
23. Repeat Steps 15-18 for cells C10 and D10.
24. Save and close.

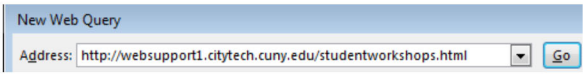
Data Tab



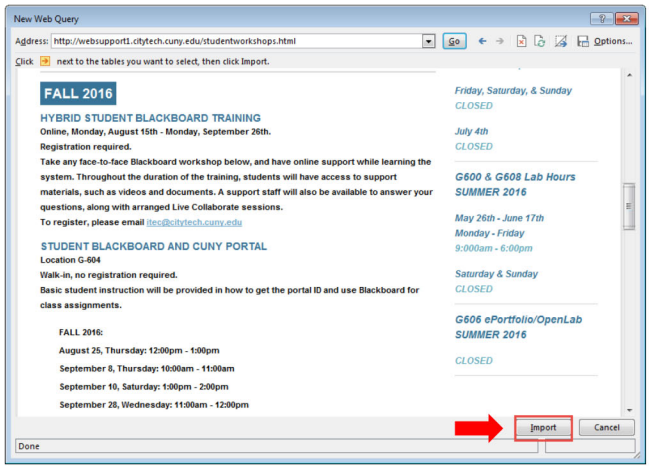
- Sorting and Filtering can also be found in the Data tab as well as copying information from access, the web, text or other sources.
  - Select the **Data Tab** from the Ribbon
  - Add information from the Web by selecting the location where the information should go. Click on **From Web** icon:



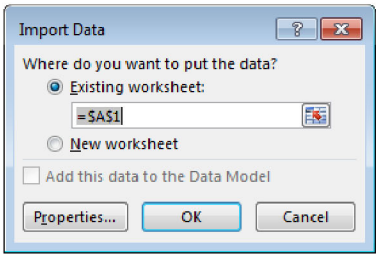
  - Type in the address that you want to import from:



  - Click on Import:

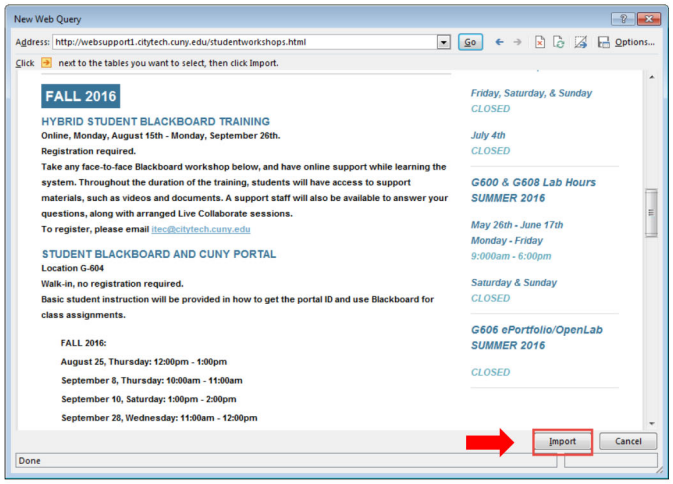


  - Always select the top left corner so that all of your information is visible:

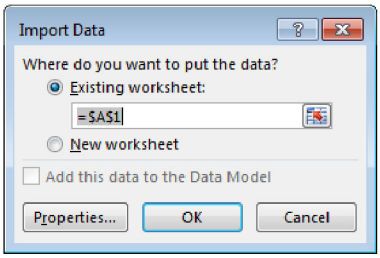


Activity 4: Importing Data From the Web

1. Open a blank document and Save As **DataImport**.
2. Click on From Web button.
3. Type http://websupport1.citytech.cuny.edu/studentworkshops.html in address bar.



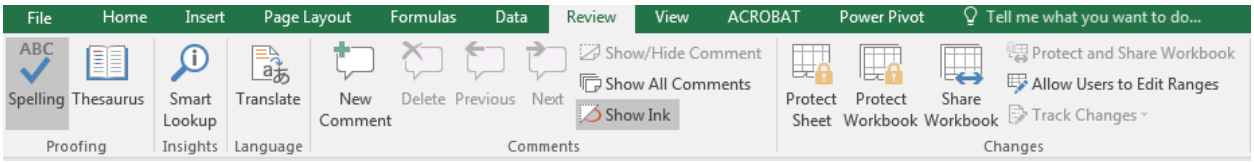
4. Click on the arrow next to the table.
5. Click Import.
6. Select cell A1 and click **OK**.



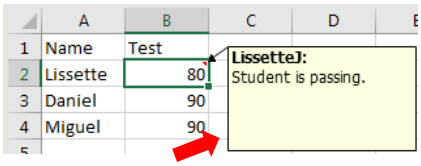
Review Tab

Adding comments

- Comments can be added for each individual cell.
  - Go to the **Review tab** on the ribbon, and select the cell where a comment is needed,



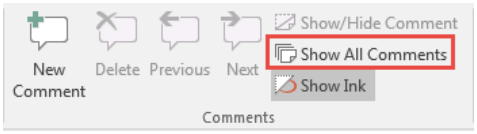
  - Click on New Comment – a new comment box appears:



  - Type your comment into the comment box.

Showing All Comments

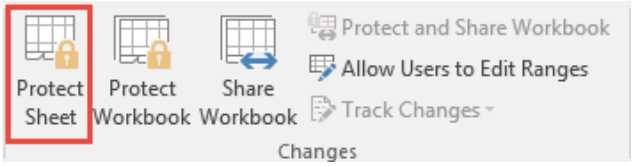
- All comments are hidden by default unless you ask Excel to show all of them.
  - From the **Review tab**, select on the **Show All Comments**.



  - The comment box can be deleted by selecting the cell containing a comment and pressing on the delete icon.

Protecting information in a Sheet

- Workbooks and individual spreadsheets can be protected with a password.
  - Select the spreadsheet to be protected.
  - From the Review tab, click on Protect Sheet and assign a desired password.

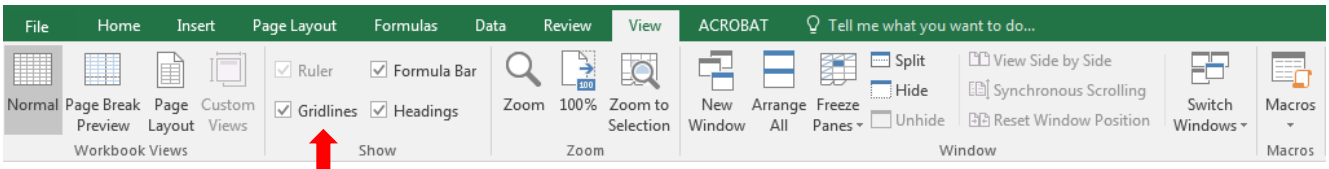


- Remember your password or else you will not be able to access your workbook in the future.

Spell Check

- Also found under Review.

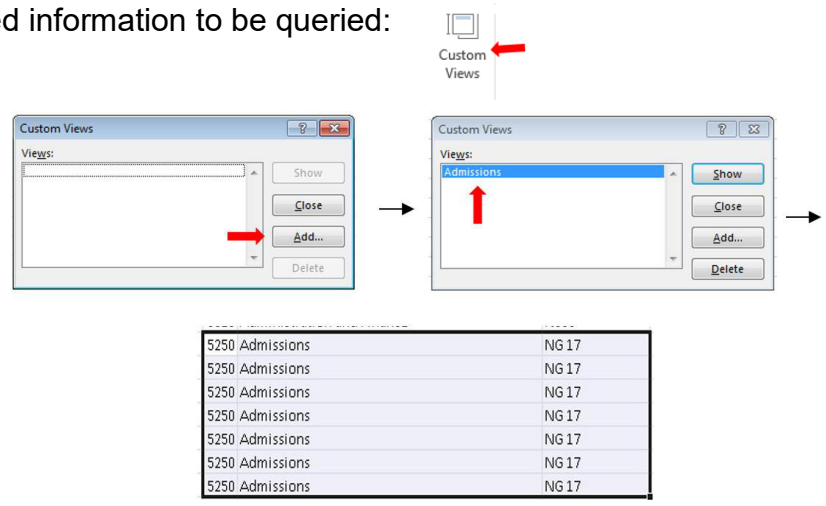
View Tab



Creates the lines around the cells.

Workbook Views Group

- There are several ways a spreadsheet can be viewed while working with Excel:
- Normal: By default, Excel is viewed in this mode which adjusts to the size of the window.
- Page Break Preview: Allow sheet markers to be viewed when data is placed on different spread sheets.
- Page Layout: Allow all pages to be laid out on the screen.
- Custom Views: Allows queries of information on a worksheet to be saved by selecting on the desired information to be queried:

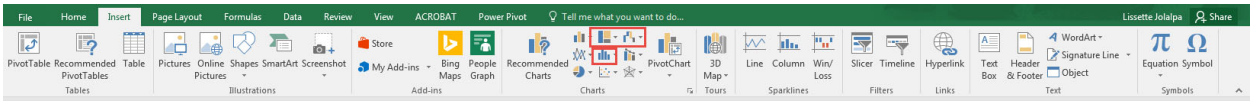


- The “Zoom to Selection” button will allow you to zoom into the location of your cursor or cell. Click on the “100%” zoom button to restore normal size and view.

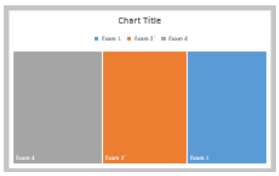
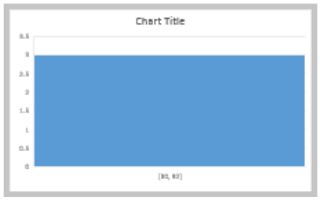
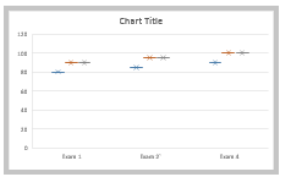
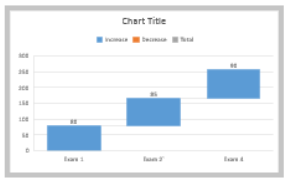
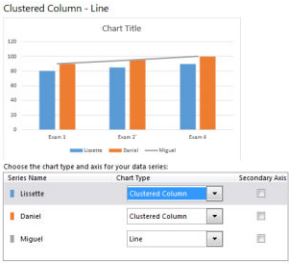
New Features: Microsoft Excel 2016

Microsoft Excel 2013 has been optimized to function on more devices such as tablets and phones. There have been some enhancements made to Excel 2013 which are listed below.

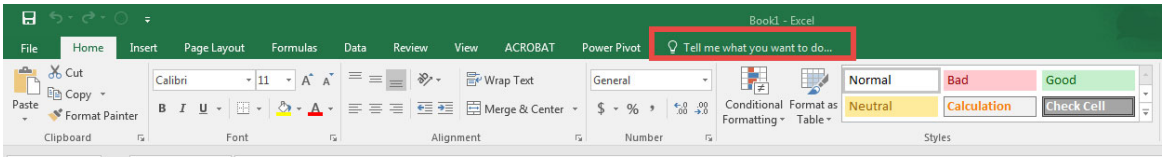
New Charts



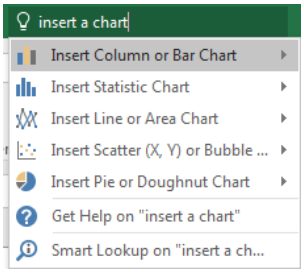
- New charts have been added to 2016 such as:

Treemap Treemap 	**Sunburst** Sunburst 	**Histogram** Histogram 
Box & Whisker Box and Whisker 	**Waterfall** Waterfall 	**Combo** Clustered Column - Line 

Tell me what you want to do….

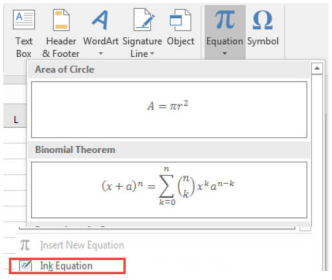


- You can now type into the textbox what you want to do to the worksheet.
- Type **insert a chart** into the search box. Options for various charts appear to choose from.

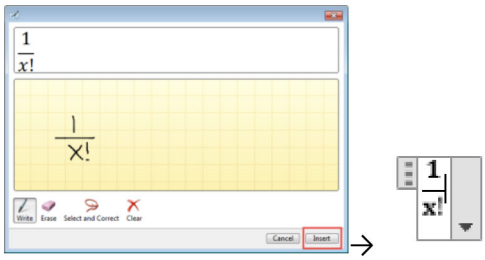


Ink Equation

- Ink equation converts handwritten equations into text. You can write an equation using your mouse, stylus, or pen.
- From the **Insert** select **Equation→ Ink Equation**.

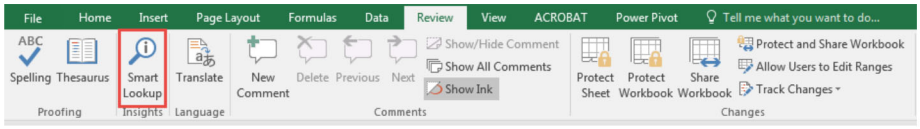
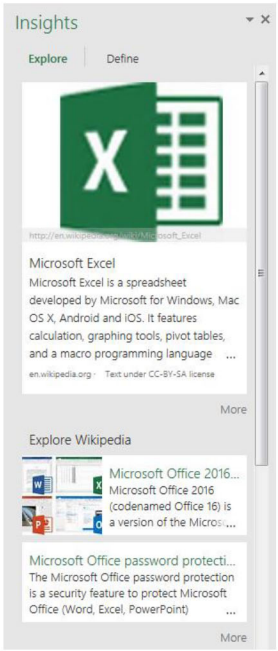


- Write an equation using the mouse if you do not have a touch screen. Insert when done.



Smart Lookup

- Enables text written in Excel 2016 to be searched through Bing providing insights related to the text.
- Type **Microsoft Office 2016**. Highlight the cell.
- From the **Review** tab select **Smart Lookup**.



- Insights will appear on the right hand side.