

FALL 2019, OCT. 10-12
SPOKANE, WA

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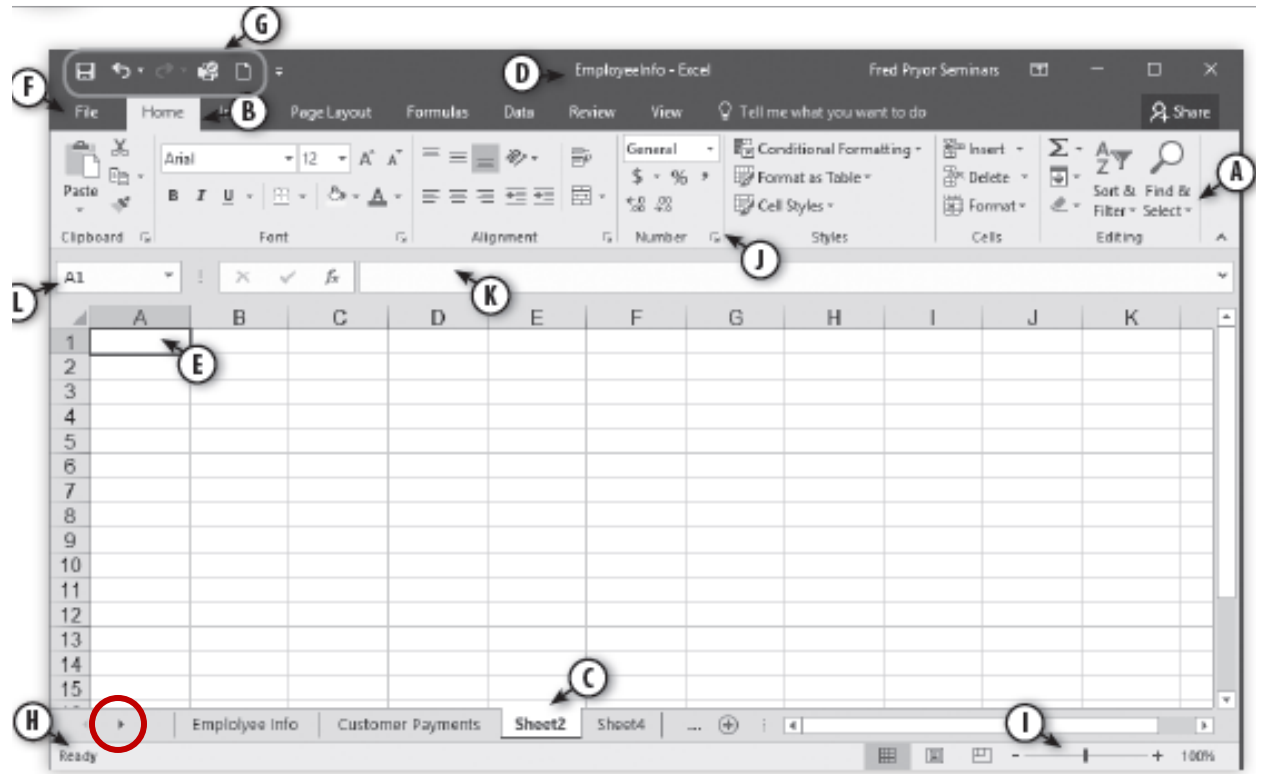
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1 – Build a Workbook from Scratch

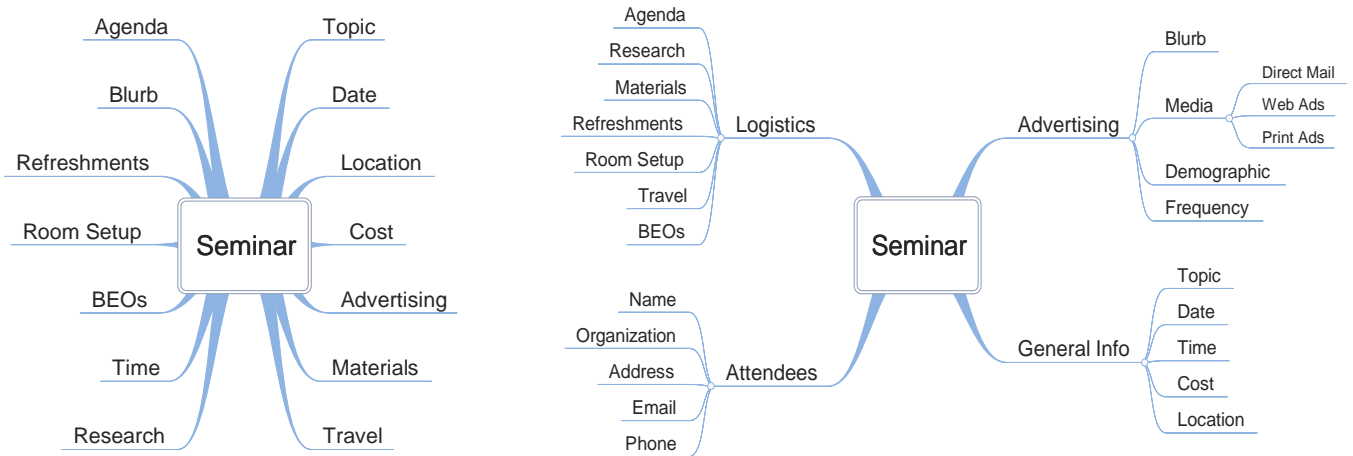
Worksheet Elements



A		The strip of buttons and icons above the work area.
B		A collection of functionally- related controls and menus.
C		An individual spreadsheet with rows & columns or a chart.
D		A file containing multiple worksheets.
E		Marks the currently active cell or range.
F		Provides access to options such as open, save, print, etc.
G		Stores shortcuts to frequently used features.
H		Hosts specific shortcuts and information about a workbook.
I		Controls the magnification of the screen.
J		Launches the associated dialog box.
K		Displays the contents of the currently active cell.
L		Displays the name of the currently active cell.

Design a Spreadsheet

Mind map the content, then sketch the layout. Start by dumping out everything you would want to include in the spreadsheet, the sub-group



Each main topic is a separate workbook or sheet. Branches are column headings. One of the branches is the variable by which to divide sheets

Sketch out a spreadsheet to track 5 products across 12 months:

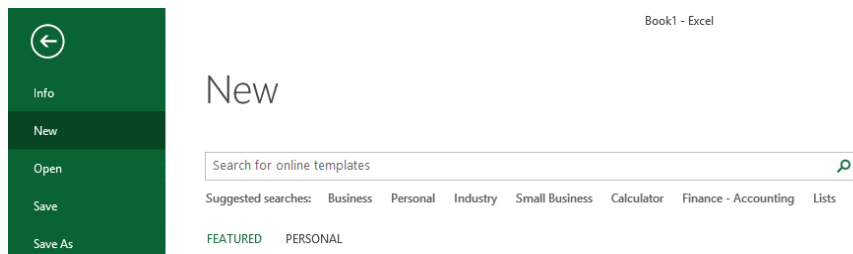
Design your spreadsheets to grow downward. Also remember you can only sort and filter vertically, so put the items you would likely want to manipulate into the rows

Find, Create, and Use Templates

Locate a Template:

Rather than starting with a blank workbook, get started with something that gives you a start on content, formatting, and layout

1. Click the File Tab
2. Select New
3. Search for Online Templates
3. Single-click to preview or double-click to open the desired template
4. Pin Favorite Templates [A]
5. Edit and save as a Workbook or Template



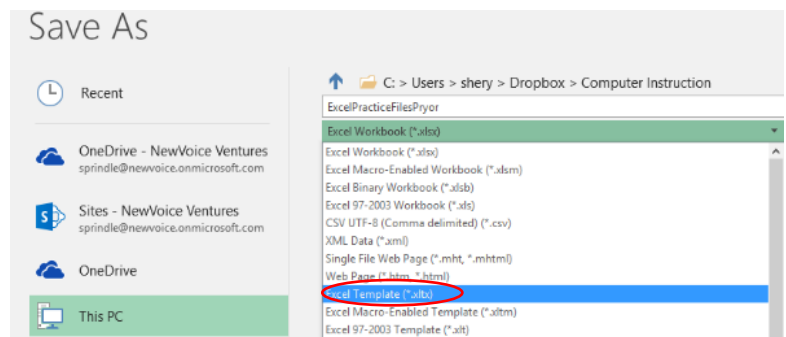
Create a Template:

1. Create the workbook you want to save as a template
2. Click File > Save As...
3. Name the file
3. In the Save as Type drop-down, choose Excel Template

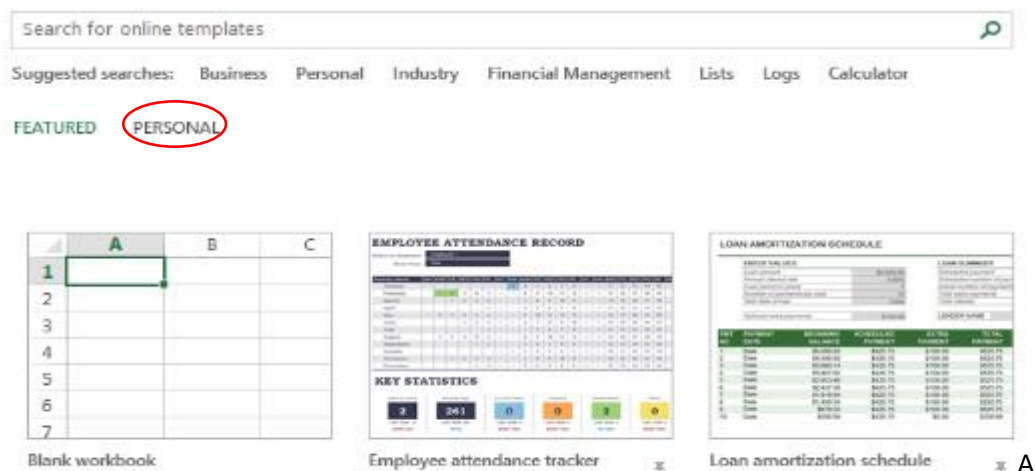
Open a Saved Template:

1. Click the File Tab
2. Select New
3. Click Personal
4. Double-click the desired template

What makes saving a workbook as a template different than just saving it?



What can you use templates for?



Automate Date Entry with AutoFill

Type data into a cell:

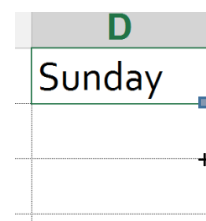
1. Select an empty cell
2. Type the information
3. Leave the cell (Press ENTER or TAB on the keyboard, or click into another cell)

Edit data in a cell:

1. Select the data in the cell containing the information to be edited. This can be done three ways:
 - a. Double-click the cell
 - b. Click the cell, and edit in the Formula Bar
 - c. Press the F2 key on the keyboard
2. Make any needed changes
4. Press ENTER or TAB on the keyboard

Replace information in a cell:

1. Select the cell containing the information to be replaced
2. Type the new information
3. Press ENTER or TAB on the keyboard



Copy Data or Fill a Series with AutoFill:

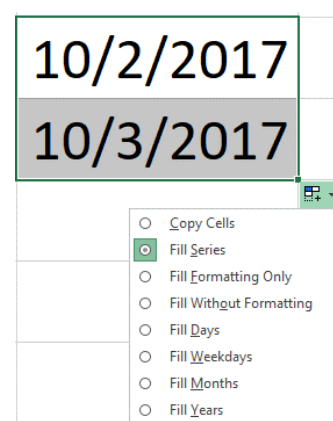
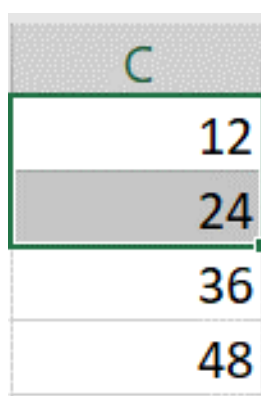
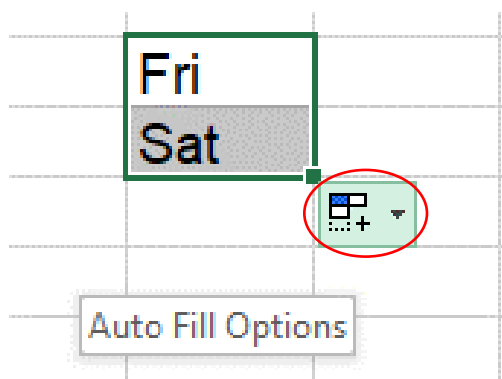
You can use AutoFill to complete a series of numbers, months, days, dates, or other sequential data. The fill handle is a small square in the lower-right corner of a selected cell or range of cells. When you point to the fill handle, the pointer changes to a plus sign (+). Click and drag the pointer in any direction to fill a range with data.

To use AutoFill:

1. Select the cell containing the value that will start the series
2. Point to the fill handle until the pointer changes to a + symbol
3. Click and drag the fill handle over the adjacent cells that you want to fill

To teach Excel a pattern, select multiple cells with a desired range, and AutoFill will continue with the same increments. For example, fill a range by 10s or fill a range with dates a week apart

Click the Options Icon that appears when you release the Fill Handle to take advantage of variations



Insert, Delete, Move, and Manipulate Cells, Rows, and Columns

Insert Rows:

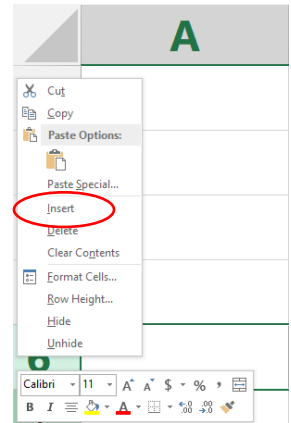
1. Right-click the number to the left of the row you want to insert rows above
2. From the right-click menu, click Insert

To insert multiple rows, select the number of rows you want to insert before right-clicking

Insert Columns:

1. Right-click the letter above the column you want to insert columns in front of
2. From the right-click menu, click Insert

To insert multiple columns, select the number of columns you want to insert before right-clicking



Delete rows or columns:

1. Select the rows or columns you want to delete
2. From the right-click menu, click Delete

Select cells, rows, and columns:

Select rows or columns by clicking row and column headers. Click and drag across several column or row headers to select multiple rows and columns

Select an entire worksheet by clicking the upper-leftmost button

Use the SHIFT Key to select adjacent items:

1. Click the first cell (or row or column)
2. Press and hold the SHIFT key on the keyboard while selecting a second cell (or row or column)

All cells between the two places you clicked will be selected

Use the CTRL Key to select non-adjacent items:

1. Click the first cell (or row or column)
2. Press and hold the CTRL key on the keyboard while selecting additional cells (or rows or columns)

All clicked items will be selected

Selection Shortcuts

CTRL+A: Selects All

CTRL+ARROW: Jumps from the active cell to the last non-blank cell in the direction of the arrow

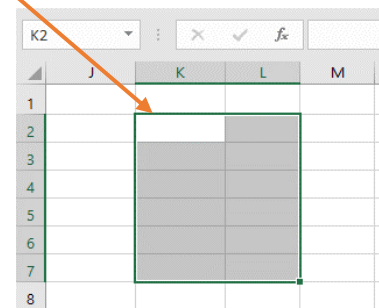
SHIFT+ARROW: Highlights one cell at a time in the direction of the arrow

CTRL+SHIFT+ARROW: Selects all cells from the active cell to the last non-blank cell the direction of the arrow

Move the contents of cells, rows, or columns by clicking and dragging the highlight that surrounds the selection

Press and hold the CTRL key and drag to copy

Press and hold the SHIFT key and drag rows and columns to move them



Insert, Copy, and Move Worksheets

Insert a Worksheet:

1. Click the tab of the worksheet you want to insert a worksheet after
2. Click the plus sign (+) to the right of the sheet tabs

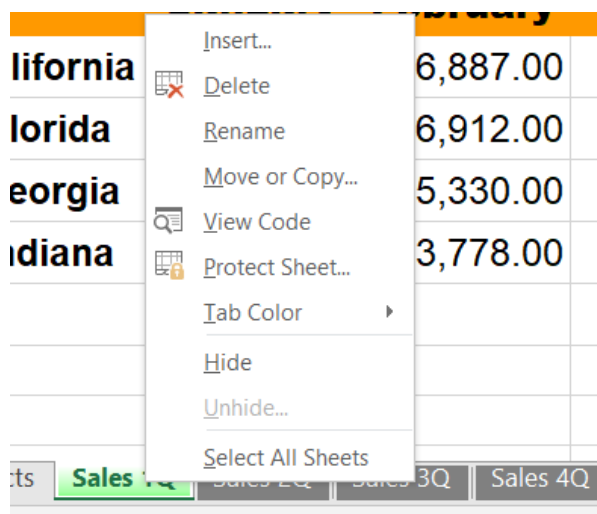
Move or copy a worksheet:

1. Right-click the tab for the worksheet to be moved or copied
2. Select Move or Copy
3. Select the destination workbook from the To Book dropdown menu (the current workbook is selected by default)
4. Select the worksheet position in the destination workbook in the Before Sheet panel
5. Leave the Create a Copy checkbox unchecked to move the sheet or Click the Create a Copy checkbox to copy the sheet
6. Click OK

You can also drag a sheet to move it. To copy a sheet quickly, press and hold the CTRL key on the keyboard while clicking and dragging the sheet tab to new location

Rename a worksheet:

1. Double-click the tab for the sheet to be renamed
2. Type the new sheet name
3. Press Enter

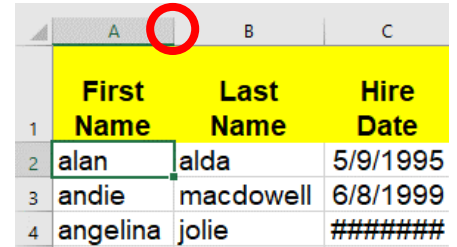


2 – Customize, Maneuver, and Modify

Format Cells, Rows, and Columns

Resize Rows and Columns

Sometimes number formatting will make the data too wide to be displayed at the current column width. When this happens, Excel displays a series of number signs (#) instead of a truncated number. (This is done because the visible part of a truncated number might be mistaken for the complete number.) If number signs are displayed, either increase the column width or change the formatting of the number



	First Name	Last Name	Hire Date
1			
2	alan	alda	5/9/1995
3	andie	macdowell	6/8/1999
4	angelina	jolie	#####

Excel automatically adjusts row height to accommodate the size of data in a row, while column widths need to be adjusted manually. There are several ways you can change column widths:

*You cannot change the height or width of an individual cell without it changing the entire row or column

Drag the Right Column Border

When you point to the border between two column headings, the pointer changes to a two-headed arrow. You can then drag the border to the left or right to decrease or increase the column width.

Double-click the Right Column Border

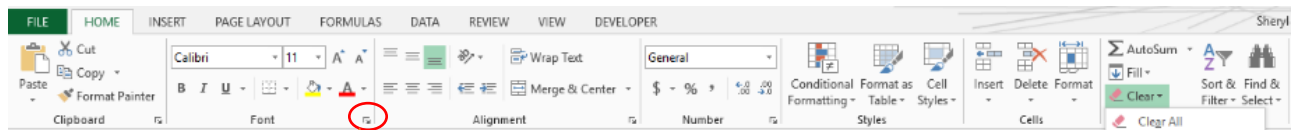
This automatically sizes the column to fit the widest data it contains.

Set a Specific Numeric Column Size

To do this, right-click a column label (or select multiple columns and then right-click) and choose Column Width. Then enter a width value and click OK. The same options work for customizing row height.

Setting Consistent Width of Multiple Columns

To set several contiguous columns to the same width, select the columns and then use one of the methods above to change the width. This method also works for setting row height (do this instead of alternating blank rows).



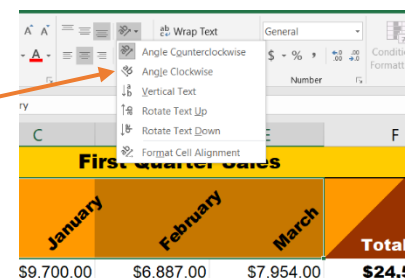
Format Cells

The Styles and Cells groups on the Home tab allow you to adjust multiple aspects of cell formatting. For more options, click the Dialog Box Launcher in the lower right corner of a group.

Number tab in the Format Cells dialog box offers a variety of number formats, including dates, times, fractions, and scientific notation.

Cell Alignment

Cells in Excel can be aligned both vertically and horizontally in the Alignment Group on the Home tab. You can also change cell Orientation and indent.

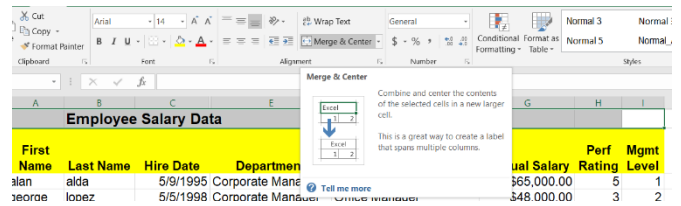


First quarter sales			
January	February	March	Total
\$9,700.00	\$6,887.00	\$7,954.00	\$24,541.00

Merge Cells

The Merge & Center button centers data over a range of cells (instead of within a single column)

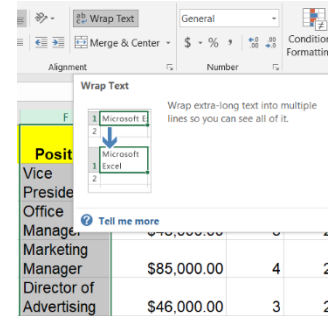
1. Select the cell containing the data you want to merge and center (If you have not yet typed the data, move to step 2)
 2. Select the rest of the cells over which you want to center the data
 3. On the Home tab in the Alignment group, click Merge & Center (You can enter data into the merged cells)
- To unmerge, select the merged cell and click Merge & Center again



Wrap Text

Click the cell or range of cells where you want the text wrapping to take place.

On the Home tab, click Wrap Text. Adjust the row height as needed

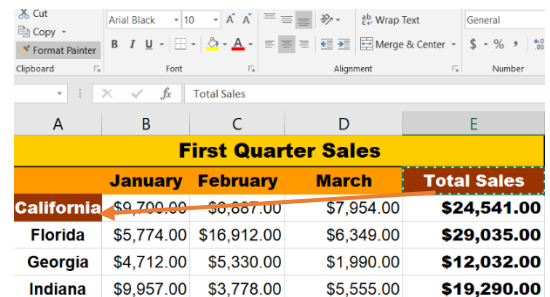


Format Painter

Once a desired look has been achieved, it is easy to apply that same formatting to additional cells using a tool called the Format Painter

Copy or paste formatting from one cell to another

1. Select the cell with the formatting to be copied
 2. Click the Format Painter button in the Clipboard group on the Home tab
 3. Select the cells to which the formatting should be applied
- When you release the mouse, the Format Painter automatically turns off

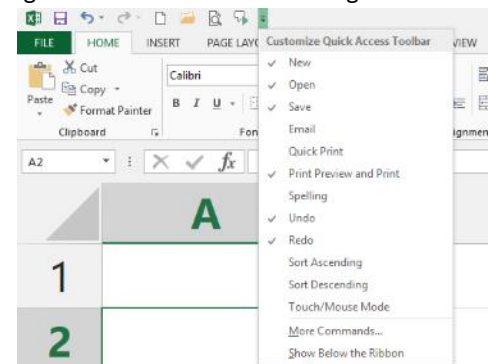


Copy or paste formatting several times:

1. Select the cells with the formatting to be copied
2. Double-click the Format Painter button in the Clipboard group of the Home tab
3. Select the cells to which the formatting should be applied
4. Repeat as many times as necessary
5. Turn off the Format Painter by pressing the ESC on the keyboard or Paste clicking the Format Painter button again

Customize the Quick Access Toolbar

1. Click the Customize Quick Access Toolbar dropdown arrow
2. Take one of three actions:
 - a. Select an unchecked item to add
 - b. Select a checked item to remove
 - c. Select the More Commands option to view additional options



Customize the Ribbon

1. Click the File tab
2. Choose Options
3. In the Options dialog box, select Customize Ribbon
4. Add or remove items (like the Developer tab)

Customize the Status Bar

1. Right-click the Status Bar
2. Select an unchecked item to add or a checked item to remove

Work with Multiple or Large Worksheets and Workbooks

Group Sheets

1. Click the first sheet to be grouped
2. Select additional sheets to include in the group
 - Hold the SHIFT key on the keyboard while clicking a non-adjacent sheet to select both of the clicked sheets and all sheets between them
 - Hold the CTRL key on the keyboard while clicking to add individual sheets to the selection
3. Verify the grouped sheets are the ones intended
 - Grouped sheets are highlighted
 - The term [Group] appears in the Title Bar
4. Make changes to any grouped sheet to apply those modifications to all grouped sheets
5. Ungroup sheets to stop sharing changes
 - Click any ungrouped sheet
 - Right-click any grouped sheet and select Ungroup Sheets

	February	March	Total
Insert...	6,887.00	\$7,954.00	\$2
Delete			
Rename	6,912.00	\$6,349.00	\$2
Move or Copy...	5,330.00	\$1,990.00	\$1
View Code	3,778.00	\$5,555.00	\$1
Protect Sheet...			
Tab Color			
Hide			
Unhide...			
Select All Sheets			
Ungroup Sheets			

Window Workbooks and Worksheets

Hide Rows, Columns, and Sheets

To hide rows or columns:

1. Select a column heading or row heading, or drag across multiple column headings or row headings to make your selection
2. Right-click the selection and choose Hide

You can also select an individual cell or range and, on the Home tab, click Format (in the Cells group), choose Hide & Unhide, and then choose an option

When you want to use or view hidden rows or columns again, you can unhide them:

1. Select the rows or columns on both sides of the hidden row(s) or column(s)
2. On the Home tab, in the Cells group, click Format and choose Hide & Unhide; then choose Unhide Rows or Unhide Columns

Hide and Unhide Worksheets

You can also hide and unhide entire worksheets. Simply right-click a worksheet tab and choose Hide. To unhide a worksheet, right-click the active worksheet tab and choose Unhide. Select the name of the hidden tab you want to show, and click OK

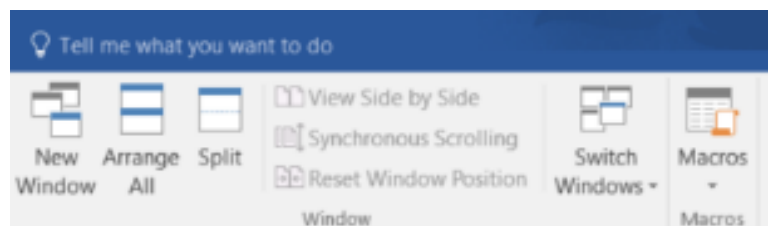
Split a Worksheet:

Click the View tab

Click Split in the Window group

Drag the split bar(s) to where you want to split the worksheet

To remove a split, double-click the split bar. You can remove both horizontal and vertical splits by clicking the Split button again



View Multiple Workbooks in the Same Window:

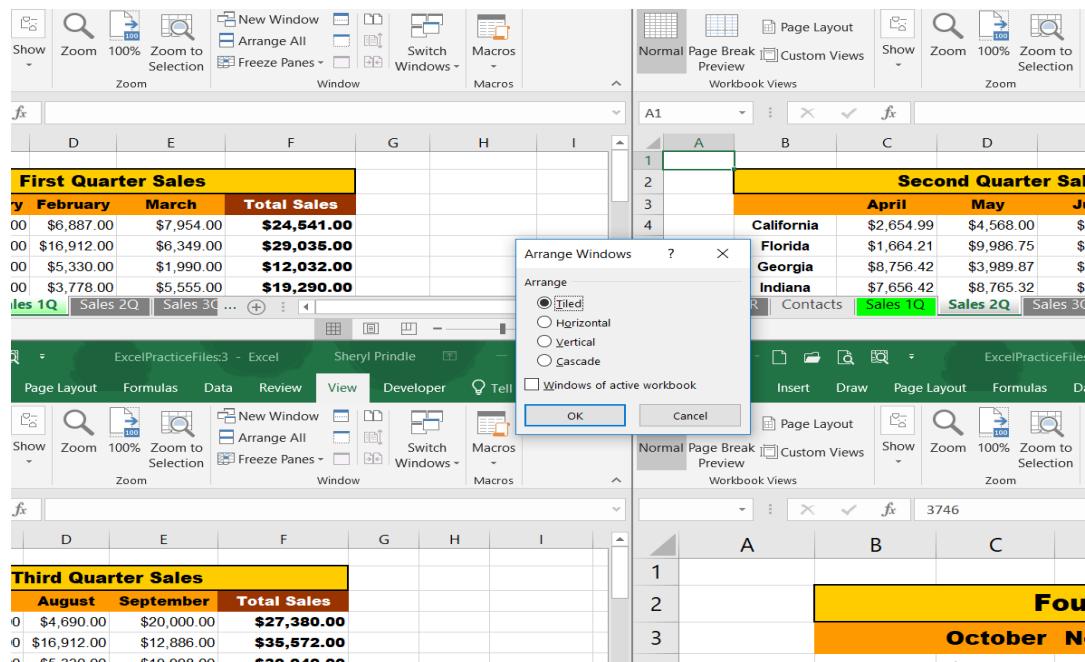
1. Open the workbooks you want to view
2. In the View tab, in the Window group, choose View Side-by-Side or Arrange
3. View Side by Side allows you to choose from open workbooks and use synchronous scrolling. Click it again to turn it off
4. Arrange automatically arranges all open workbooks and lets you choose the layout. Maximize the workbooks to turn it off

View Multiple Sheets in the Same Window:

1. Open the workbook that contains the sheets you want to view
2. In the View tab, in the Window group, click New Window to open another view of the same workbook. You can click it multiple times to get multiple views
3. Use View Side by Side or Arrange All to view the worksheets as explained above
4. You can edit in any window and, as long as you save changes, it will update the worksheets in the workbook

View Side by Side allows you to choose from open workbooks and use synchronous scrolling. Click it again to turn it off

Arrange automatically arranges all open workbooks and lets you choose the layout. Maximize the workbooks to turn it off

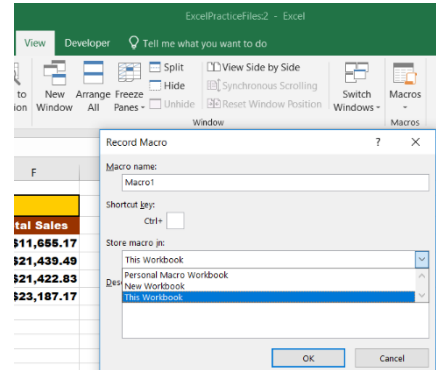


Macros

A macro is a recording of keystrokes and mouse clicks that can be played back. Any set of tasks performed exactly the same way every time is a good candidate for a macro

Create a Macro:

1. On the View tab, in the Macros group, click the Macros dropdown arrow and select Record Macro
2. Name the macro
3. Assign a shortcut key (optional)
3. Choose where the macro should be stored (the workbook where the macro is stored must be open for the macro to run)
 - a. Personal Macro Workbook (always available when you are logged in)
 - b. New Workbook
 - c. This Workbook (travels with the workbook)
4. Provide description (optional)
5. Click OK
6. Perform the commands you want to record
7. Go back to the Macros group on the View tab, and choose Stop Recording from the drop-down menu



Run a Macro:

1. Select the View tab
2. Click the Macros button above the drop-down arrow
3. Select the macro you want from the Macro name list
4. Click Run

Edit a Macro:

1. Go to the View tab
2. Click the Macros drop-down
3. Select View Macros
4. Select the macro you want to edit. (if the Macro is stored in the Personal Macro Workbook, you will need to unhide it from the Window group of the View tab)
5. Click Edit
6. Make text edits to the code
7. Close, and Return to Microsoft Excel

What kinds of things would recording a Macro work well for?

3 – Create and Manipulate Reports

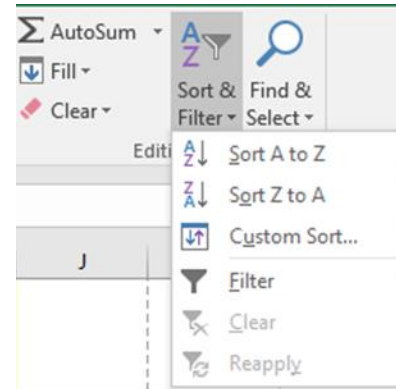
Sort - You can sort data alphabetically, chronologically, or numerically

Quick Sort

1. Click a cell in the column by which the data should be sorted
2. Click the Sort & Filter drop-down in the Editing group on the Home tab
3. Select a sort method

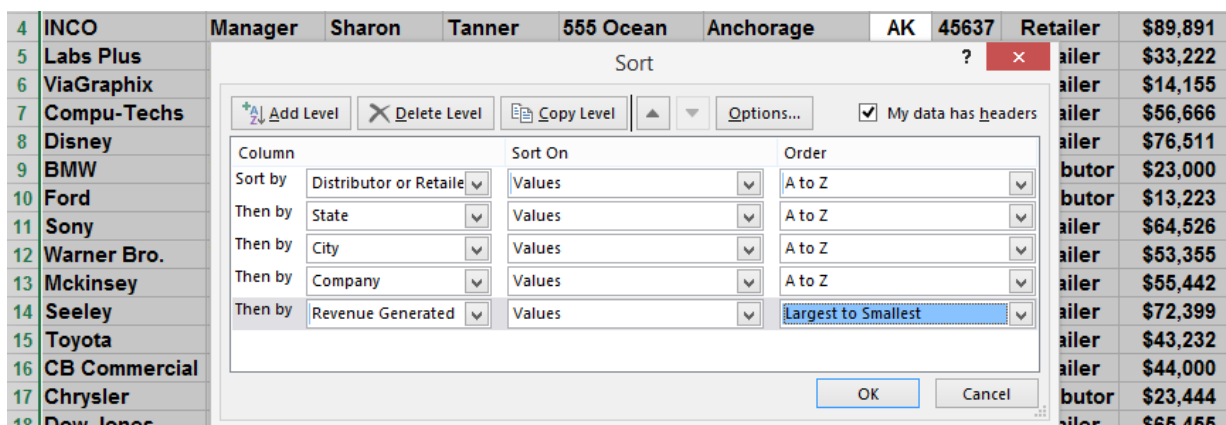
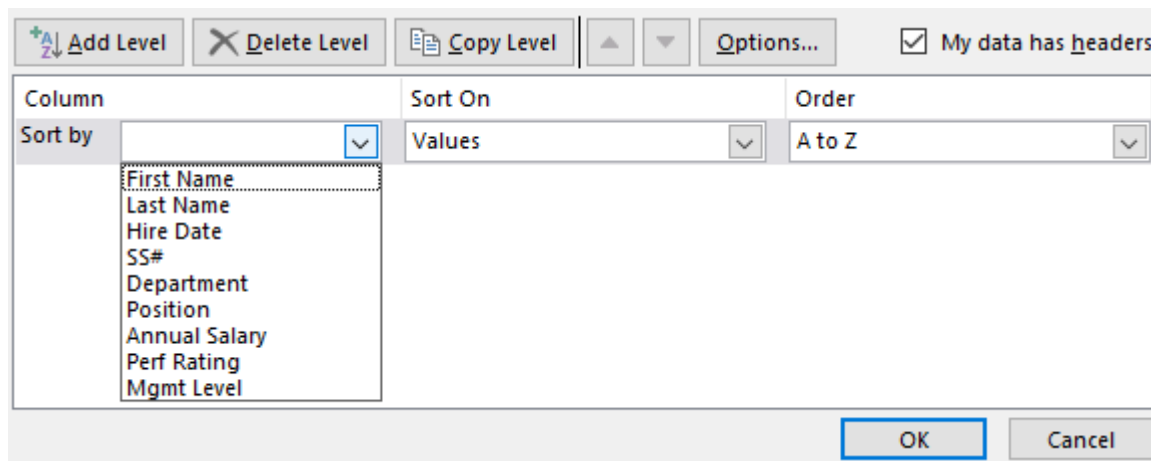
Or

1. Right-click any cell in the column by which the data should be sorted
2. Select Sort
3. Select a sort method



Multi-Level Sort

1. Click anywhere in the data to be sorted
2. Choose Custom Sort in the Sort & Filter drop-down in the Editing group on the Home tab
3. Choose the column and aspect you want to sort based on as well as the order
4. Repeat step 3 for multiple levels



Filter – Query and Clean up

AutoFilter:

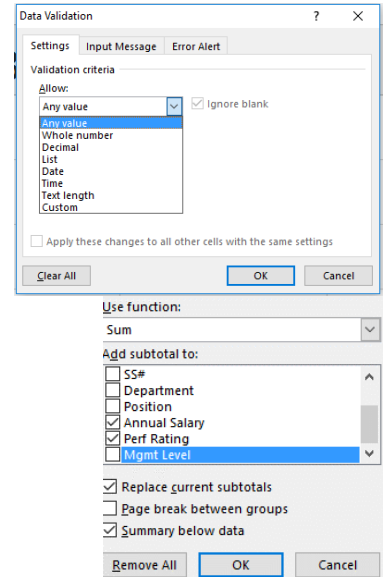
1. Click any cell in the data
2. Click the Filter button in the Sort & Filter group on the Data tab of the Ribbon
3. Click the dropdown button at the top of the column to be filtered
4. Uncheck all but the desired range(s) from the Filters window
5. Click OK

You can also use Text Filters and Number Filters to select data to sort

Subtotals

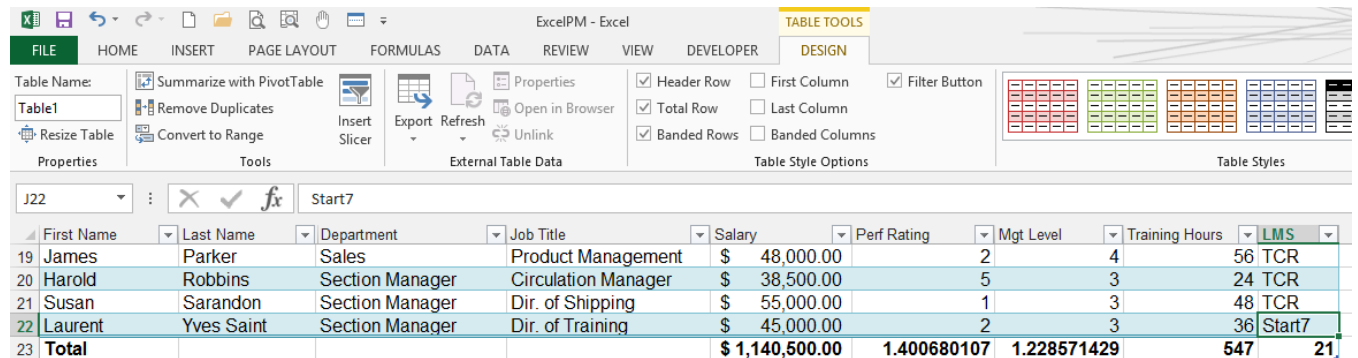
Excel can automatically calculate subtotals at every change of data in a key column

1. Sort a list by a key column
2. On the Data tab, in the Outline group, click Subtotal
3. Use dropdown arrows to configure desired settings
4. Click OK



Format as Table

On the Home ribbon, *Format as Table* automates alternate row shading, freeze panes, the filter, and adding a total row. Tab from the last data cell to add rows



1. Click any cell in the data to be converted to a list
2. On the Home tab, in the Styles group, click Format As Table
3. Select a formatting option
4. Click OK to confirm the data range
5. Review your completed table

Flash Fill

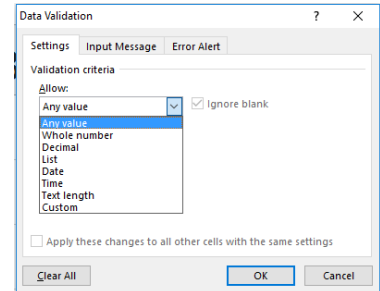
You can format, combine, parse, and clean up data by just typing the desired outcome into a blank cell in the same row as the data, hitting enter, and starting to type it again the next cell down

City	State	Zip Code	ID#	Revenue Generated	
Miami	FL	78688	123-23-1232	\$72,399	123 @ Miami, FL 78688
Los Angeles	CA	45637	436-36-5435	\$64,526	436 @ Los Angeles, CA 45637
Dallas	TX	56466	534-83-4872	\$13,245	534 @ Dallas, TX 56466
Seattle	WA	90000	004-36-3264	\$32,211	004 @ Sea
Miami	FL	78688	687-43-4535	\$43,232	687 @ Mia
Mobile	AL	88890	047-46-3245	\$14,155	047 @ Mo
Denver	CO	34255	747-22-5343	\$53,355	747 @ Den
Miami	FL	78688	124-34-5435	\$72,399	124 @ Mia
Dallas	TX	56466	643-24-3364	\$81,122	643 @ Dal
Tucson	AZ	98099	063-47-4553	\$32,331	063 @ Tuc
Newport Beach	CA	67859	123-23-1232	\$23,000	123 @ Nev
Los Angeles	CA	45637	123-23-1232	\$64,526	123 @ Los

Data Validation

To ensure the proper type of data is being entered, Excel can validate it upon entry

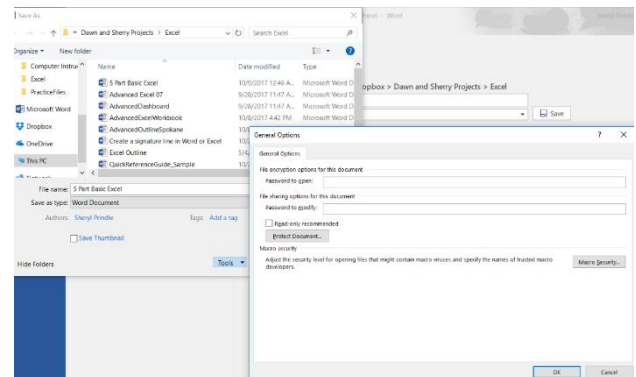
1. Highlight the cells where data validation will be applied
2. On the Data tab, in the Data Tools group, click Data Validation
3. Select the validation criteria
4. Provide any additional parameters
5. Create optional Input and/or Error Messages
6. Click OK



Securing Data

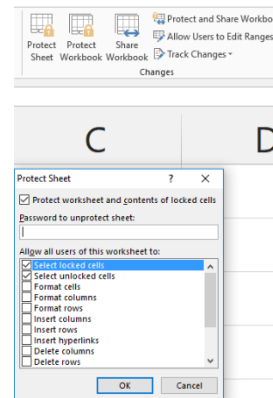
File Protection:

1. Click File
2. Click Save As
3. Click Excel Workbook
4. Click the Tools dropdown arrow
5. Select General Options
6. Enter a Password to open and/or edit the workbook
7. Click OK



Cell Protection:

1. Right-click the cells to remain editable
2. Select Format Cells
3. Click the Protection tab
4. Uncheck the Locked box
5. Click OK
6. Click the Review tab
7. Click Protect Sheet
8. Create and confirm a Password
9. Click OK



Lock all cells by performing only steps 6 through 9

Print – Total Control of How It Shows Up on Paper

Set a Print Area

- 1 Select the range to be printed
- 2 On the Page Layout tab, in the Page Setup group, click Print Area and choose Set Print Area
- 3 Click the File tab and click Print to preview and verify that only the print area will be printed

Print Scaling and Orientation

On the File tab, click Print to display your print options, which include page orientation, collation, paper size, margins, and scaling

You can also change these settings from the Page Layout tab

On the Page Layout tab, in the Scale to Fit group, you can fit spreadsheets to the desired width and number of pages. You can also adjust the percent of scaling

Margins

On the Page Layout tab, in the Page Setup group, adjust margins to Normal, Wide, Narrow, or Custom

Print Titles

If your data headings appear on only the first page, the data on the other pages will be hard to interpret. You can set Print Titles to specify which text should print as headings on all pages:

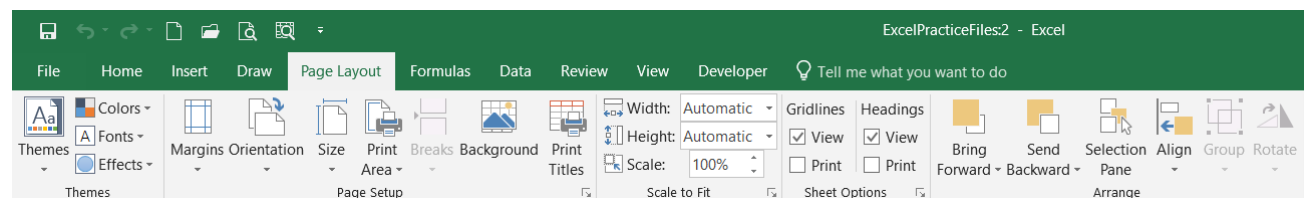
1. Click the Page Layout tab
2. In the Page Setup group, click Print Titles. The Page Setup dialog box opens with the Sheet tab active
3. Under Print titles, enter the range containing the titles that you want to print on each page. You can select the rows to repeat at the top of all pages, columns to repeat on the left side of all pages, or both
4. Click OK

Add Headers and Footers

1. Click the Insert tab
2. In the Text group, click Header & Footer. Page Layout view is activated, with the Header & Footer Tools Design tab displayed. An empty header box appears in the top center of the first page
3. Add text and any other elements you want to include, or you can add items from the Header & Footer Elements group or use preset headers and footers

When you finish with the header or don't want one, click Go to Footer in the Navigation group, and follow the above steps to insert a footer

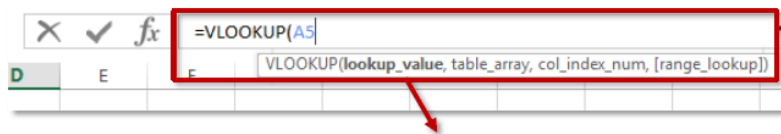
Edit or delete headers and footers manually by clicking into the header and footer area



4 –Formulas and Functions

Formula Syntax and Order of Operations

$$=9 + 3 * 4$$

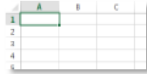


All Excel formulas start with a "=" and can either be selected from the formula library or typed directly into the formula bar

As you begin to type a formula, a pop-up will appear to guide you through each step, shown in **bold**

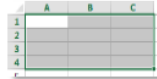
A1

Single-cell references describe a cell's location within a worksheet, in terms of the intersection between a column (A through XFD), and a row (1 through 1,048,576)



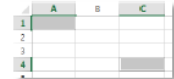
A1:C4

Array references describe a contiguous group of cells based on the location of the top-left (A1) and the bottom-right (C4) cells, separated by a ":"



A1,C4

Non-contiguous references describe selections of individual cells that do not share a common border, separated by a ","



Calculations are carried out according to the mathematical "Order of Operations"

1. Parentheses
2. Exponents
3. Multiplication and Division
4. Addition and Subtraction

P
E
M
D
A
S

If there is more than one instance of a type of calculation, Excel calculates from left to right

Reference Cells

Reference cells in formulas by typing the cell reference or clicking on the cell to enter it into the formula

Compose a formula:

1. Type and equal sign (=)
2. Click the first cell
3. Type an operator (+ to add, - to subtract, * to multiply, / to divide)
4. Click the next cell
5. Continue until the formula is complete, then press Enter to calculate and move the cursor down or Tab to calculate and move the cursor to the right

	A	B	C
1	Item 1	Item 2	Total
2	12	6	subtract
3	9	14	multiply
4	18	2	divide

AutoFill Formulas - Relative Reference

1. Select the cell containing the formula
2. Point to the fill handle until the pointer changes to a + symbol
3. Click and drag the fill handle over the adjacent cells that you want to fill the formula into

Excel adjusts the cell references in the formula relative to where you move it. If you fill down, the row reference adjusts, if you move across, the column reference changes. If you copy and paste a formula, both the row and column reference change relative to the distance the formula has been moved

AutoFill Formulas - Absolute Reference

If you do not want the reference to a cell to change when you copy it to a new location, you can lock in the reference by making it absolute. The way to do this is to put a dollar sign in front of the reference you want to lock in. If you are referring to a single cell and do not want the reference to change no matter what direction it moves, lock it in by putting a dollar sign before BOTH the column and the row reference \$C\$4

You can also lock in just the row C\$4 or just the column \$C4

You can type the dollar signs or use F4 to toggle through the 4 types of reference: \$C\$4 C\$4 \$C4 C4

	A	B	C
1	Tax Rate	8.25%	
2			
3	Prices	Shipping	Total
4	\$12.00	\$2.00	
5	\$15.00	\$3.00	
6	\$18.00	\$4.00	
7	\$25.00	\$5.00	

Pulling Data from Other Sheets and Books

You can reference cells in other worksheets or workbooks just by clicking on them. Excel makes a notation in the formula that indicates where to find the cell using the following syntax:

Location	How it Appears	Example
Same worksheet as the formula	Row and Column Cell Reference	F7
Same workbook, different worksheet	Sheetname! CellReference	'Sales Total!' F7
Different workbook	[WorkbookName] SheetName! CellReference	'[Practice Files] Sales Total!' F7

*Single quotes are needed if the name of the worksheet or workbook contains a space

Excel Functions

A function is a pre-written formula. There are over 300 functions in Excel, and you can access them in the Formulas tab or by clicking Fx to the left of the Formula Bar

The most popular functions in Excel are SUM, AVERAGE, MAX, and MIN. You can access these on the Home tab by clicking the symbol for the Greek letter Sigma Σ

To sum, average, find the highest number, or find the lowest number in a range:

1. Click the cell where you want the answer to appear (it doesn't have to be at the bottom or right of the range)
2. Click the Sum button (or one of the other functions from the drop-down arrow to the right of the Sum button)
3. Highlight the range you want to sum (Excel guesses for you, so make sure the selection is correct)
4. Press Enter

Function Arguments ? X

IF

Logical_test = logical

Value_if_true = any

Value_if_false = any

=

Checks whether a condition is met, and returns one value if TRUE, and another value if FALSE.

Logical_test is any value or expression that can be evaluated to TRUE or FALSE.

Formula result =

[Help on this function](#) **OK** **Cancel**

Other Functions

Search functions by category in the Formulas tab or use the search box in the Insert Function dialog box, found by clicking Fx

You can compose a function inside the Insert Function dialog box. This is handy because Excel explains all the arguments in the formula and also inserts the proper punctuation for you

greater than	less than	does not equal
greater than or equal to		is blank

Calculate Dates

Excel sees dates as numbers of days since January 1, 1900. Excel sees times as fractions of dates. This means you can easily calculate numbers of days between dates and number of hours or minutes between times

	A	B	C	D	E
1	Accounts Receivable				
2	Current Date:		Term:		
3	Invoice Date	Amount	Invoice Due Date	Age	No. of Days Overdue
4	10/18/2012	\$577.82			
5	1/31/2015	\$264.67			
6	7/6/2015	\$810.21			
7	11/5/2012	\$577.82			
8	12/20/2014	\$86.50			
9	8/16/2015	\$2,595.00			
10	9/6/2012	\$95.15			

The IF Function

The IF function is the function that allows many other functions to work correctly. How many times do you have everything set, then you realize there is a caveat or exception?

Let's say I ask the class, "If you have never used Excel before, raise your hand. Those who have used Excel, use the distance between your finger and thumb to indicate the level of knowledge you feel you have." That is an IF function where the Logical Test = Have Never Used Excel before, the Value if True = Raise Your Hand, and the Value if False = Use the distance between your finger and thumb to indicate your level of knowledge

The IF Function =IF (Logical Test, Value if True, Value if False)

	F	G	H	I	J	K
1	Position	Annual Salary	Perf Rating	Mgmt Level	New Salary	%
2	Vice President	\$65,000.00	5	4		
3	Office Manager	\$88,000.00	2	3		
4	General Sales Manager	\$72,000.00	2	3		
5	Director of Advertising	\$66,000.00	2	3		
6	Marketing Manager	\$85,000.00	1	4		
7	Copy Writer	\$58,000.00	5	4		
8	Circulation Manager	\$70,000.00	4	3		
9	Accounting Staff	\$55,000.00	4	2		
10	Division Manager	\$53,500.00	4	4		
11	Division Manager	\$62,000.00	3	3		
12	Cashier Management	\$38,000.00	4	1		

VLOOKUP Function

The VLOOKUP function searches for a value in the leftmost column of a table and returns a value in the same row from a specified column in the table.

=VLOOKUP (WHAT, WHERE, WHICH)

What = What are you looking up based on?

Where = Where are you looking it up? (Highlight [and name] the table)

Which = Which column number (in your table) do you want to return data from?

An optional fourth argument allows you to input, "FALSE": if an exact match is required.

	A	B	C	D	E	F
1	Student	Score	Grade		Score	Grade
2	Adams	36			0	F
3	Baker	68	D		40	D
4	Camden	50	D		70	C
5	Dailey	77	C		80	B
6	Gomez	92	A		90	A
7	Hernandez	100	A			
8	Jackson	74	C			
9	Maplethorpe	45	D			
10	Paulson	60	D			
11	Ramirez	89	B			
12	Sosa	99	A			
13	Thompson	91	A			
14	Wilson	59	D			

Sparklines

Sparklines are word-sized charts you can add into specific cells in this way:

1. Select the data range you want the small chart to be based on
 2. In the Insert tab in the Sparklines group, select the Line, Column, or Win/Loss style
 3. In Location Range, indicate the cell where you want the Sparkline to be placed
- To remove a Sparkline, right-click the cell, and in the Sparklines arrow, choose Clear

Create Sparklines

Choose the data that you want

Data Range:

Choose where you want the sparklines to be placed

Location Range:

OK Cancel

Insert Comments

1. Select the cell you want to add a comment to
 2. In the Review tab or right-click menu, click Insert Comment
 3. Type the comment
 4. Leave the cell
 5. A red triangle indicates the cell contains a comment
- Hover over the cell to view the comment. Right click to edit or delete the comment

	E	F	G	H
3	r Sales			
4	March	Total Sales		
5	\$4,567.00	\$8,257.00		
6	\$6,443.00	\$13,232.00		
7	\$9,999.00	\$20,020.00		
8	\$5,555.00	\$13,999.00		

5 – Shortcuts, Tips, and Tricks

24 Popular Keyboard Shortcuts

Cut – Ctrl X	Insert Row(s) – Alt IR	Create Chart – F11	Scroll Sheets – Ctrl PgUp
Copy – Ctrl C	Insert Column(s) – Alt IC	Filter – Ctrl Shift L	Save – Ctrl S
Paste – Ctrl V	AutoSum – Alt =	Paste Special – Alt H V	Open – Ctrl O
Undo – Ctrl Z	Print Preview – Ctrl F2	Switch Windows – Alt Tab	Save As – F12
Redo – Ctrl Y	Select All – Ctrl A	In-Cell Return – Alt Enter	Spell Check – F7
Repeat – Ctrl F4	Show Formulas – Ctrl ~	B, I, U – Ctrl B, I, U	Help – F1

Freeze panes:

1. Click in the cell beneath the row and/or to the right of the column to be frozen
2. On the View tab, in the Window group, click the Freeze Panes drop-down arrow and select Freeze Panes

To unfreeze panes:

1. Click in the cell beneath the row and/or to the right of the column to be frozen
2. On the View tab, in the Window group, click the Freeze Panes drop-down arrow and select Unfreeze Panes

Use Paste Special:

One of Excel's most useful editing tools is Paste Special. This function provides access to a variety of options regarding how and what is pasted after data is cut or copied

1. Select and copy a range of cells
 2. Right-click the destination cell, and choose Paste Special
- Caution: Be sure to select an empty area of a worksheet to paste into, or that the appropriate cells will be pasted over. By default, copied ranges will paste over the same number of cells starting with the selected cell and moving to the right and down
3. Select Paste Special
 4. In the Paste Special dialog box, choose the desired options
 5. Click OK

Transpose Data

1. Copy the data to be transposed (without merged title cells)
 2. Click the target location
 3. Right Click > Paste Special > Transpose
 4. Delete the old rows
- If the formatting is not right, use *Paste Special* again and choose *Formats* or . . .

First Quarter Sales				
	January	February	March	Total Sales
California	\$9,700.00	\$6,887.00	\$7,954.00	\$24,541.00
Florida	\$5,774.00	\$16,912.00	\$6,349.00	\$29,035.00
Georgia	\$4,712.00	\$5,330.00	\$1,990.00	\$12,032.00
Indiana	\$9,957.00	\$3,778.00	\$5,555.00	\$19,290.00
	California	Florida	Georgia	Indiana
January	\$9,700.00	\$5,774.00	\$4,712.00	\$9,957.00
February	\$6,887.00	\$16,912.00	\$5,330.00	\$3,778.00
March	\$7,954.00	\$6,349.00	\$1,990.00	\$5,555.00
Total Sales	\$24,541.00	\$29,035.00	\$12,032.00	\$19,290.00

Pivot Tables

You can take your spreadsheet apart column by column and put it back together in any configuration you want. Pivot Tables allow you to analyze and recombine data into reports and charts.

1. Select one cell within the data
2. Click Insert > Pivot Table > OK
3. Check or drag items in the *Field List* to the *Row*, *Filter*, *Column*, or *Values* areas

Excel - Excel

PivotTable Fields

Choose fields to add to report:

First Name
Last Name
Hire Date
Department
Job Title
Salary
Perf Rating
Mgt Level
Training Hours

Drag fields between areas below:

FILTERS
COLUMNS
ROWS
VALUES

Department
Job Title
Sum of Salary

Grouping

Auto
Starting at: 1
Ending at: 5
By: 1

OK Cancel

Row Labels	1	2	3	4	5	Grand Total
Corporate Mgt	55000	46000	133000	106000		340000
Dir. of Advertising					46000	
Office Manager					42000	
Vice President					197000	
Web Designer					55000	
Corporate Staff	194000	51000				328000
Accountant					94000	
Division Manager					42000	
Graphic Designer					49000	
Marketing Manager	85000				85000	
Technical Writer	58000				58000	
Management Staff	62000	47000	42000	41000		192000
Accountant			42000			42000
General Sales Manager		47000				47000
HR Manager	62000					62000
Payroll Manager				41000		41000
Sales	95500	46500				142000
Product Management	95500	46500				142000
Section Manager	55000	45000		38500		138500
Circulation Manager				38500		38500

Right click *Values* column headers to change the operation

Right click row and column headers to see Group options

Explore the *Pivot Table Tools Analyze and Design* ribbons for options such as:

Create Pivot Chart

Hide Field List

Insert Slicer

Adjust Layout

Create a Chart

1. Select the data you want to chart
2. Click Insert > Chart
3. Choose the chart type
4. Adjust settings on the Design and Format Ribbons

Home Insert Page Layout Formulas Data Review View Developer Tell me what you want to do

Recommended Charts

2-D Column 3-D Column 2-D Bar 3-D Bar

More Column Charts...

	October	November	Total Sales
California	\$546.00	\$7,642.00	\$40,444.00
Florida	\$7,542.00	\$653.00	\$8,624.00
Georgia	\$2,356.00	\$6,422.00	\$9,635.00
Indiana	\$12,345.00	\$5,732.00	\$8,532.00

Row Labels

Sum of Salary

Copy
Format Cells...
Number Format...
Refresh
Sort
Remove "Sum of Salary"
Summarize Values By
Show Values As
Value Field Settings...
PivotTable Options...
Hide Field List

Sum
Count
Average
Max
Min
Product
More Options...

PivotTable Fields

Choose fields to add to report:

First Name
Last Name
Hire Date
Department
Job Title
Salary
Perf Rating
Mgt Level
Training Hours

Drag fields between areas below:

FILTERS
COLUMNS
ROWS
VALUES

Department
Job Title
Sum of Salary