



2ND EDITION

MICROSOFT EXCEL COURSE

**BEGINNER TO
ADVANCED
MODULE**

Copyright by Leadership Build, LLC ©2020

© 2020 Leadership Build. LLC. All rights reserved.

This booklet is protected by US and International copyright laws. Reproduction and distribution of this booklet, or any of its contents, without written permission by Leadership Build, LLC is prohibited.

Published 2020.

Table of Contents

<u>A MESSAGE FROM THE AUTHOR.....</u>	<u>0</u>
ABOUT THIS BOOKLET	0
HOW TO USE THIS BOOKLET	0
<u>INTRODUCTION</u>	<u>0</u>
WHY EXCEL?.....	0
HOW CAN THIS BOOKLET HELP ME PROFESSIONALLY?	0
WHAT DOES THIS BOOKLET COVER?	0
<u>BASIC TERMINOLOGY.....</u>	<u>2</u>
A WORKBOOK.....	2
A FILE	2
A SPREADSHEET	2
GRIDLINES	2
<u>THE LAYOUT OF A SPREADSHEET</u>	<u>3</u>
THE FORMULA BAR.....	3
CELLS	3
ROWS	3
COLUMNS	4
NAME BOX.....	4
SHEET NAME.....	5
THE NAVIGATION BAR	5

WORKBOOK VIEWS	5
ZOOM	5
<u>THE RIBBON</u>	<u>7</u>
QUICK ACCESS TOOLBAR	7
THE MOST COMMON COMMANDS IN THE QUICK ACCESS TOOLBAR	7
HOW TO CUSTOMIZE THE QUICK ACCESS TOOLBAR	8
TABS.....	8
FILE NAME	9
WINDOW & RIBBON OPTIONS	9
THE RIBBON DISPLAY OPTION.....	10
HOW TO AUTO-HIDE YOUR RIBBON.....	10
HOW TO REMOVE THE AUTO-HIDE RIBBON OPTION	11
MINIMIZE, RESTORE AND EXIT	12
HOW TO MINIMIZE YOUR EXCEL WINDOW.....	12
HOW TO RESTORE YOUR EXCEL WINDOW	12
THE CLOSE WINDOW OPTION	13
<u>ENTERING DATA IN A SPREADSHEET</u>	<u>14</u>
ENTERING TEXT IN A CELL	14
TEXT IN THE FORMULA BAR.....	15
EDITING TEXT IN A CELL	15
EDITING BY CLICKING ON A CELL	15
EDITING BY USING THE FORMULA BAR.....	16
OVERRIDING TEXT IN A CELL.....	16
DELETING TEXT FROM A CELL	17
DELETING PARTS OF THE CONTENTS OF A CELL	18
SELECTING A RANGE OF CELLS, COLUMNS & ROWS.....	18
HOW TO SELECT A RANGE OF CELLS.....	19

DELETING THE CONTENTS OF MULTIPLE CELLS	19
HOW TO SELECT A COLUMN.....	20
HOW TO SELECT MULTIPLE COLUMNS	21
HOW TO SELECT A ROW	22
HOW TO SELECT MULTIPLE ROWS.....	23
ADJUSTING COLUMNS & ROWS	24
HOW TO ADJUST THE WIDTH OF A COLUMN	24
HOW TO ADJUST THE HEIGHT OF A ROW	25
HOW TO ADJUST THE WIDTH OF MULTIPLE COLUMNS	26
HOW TO ADJUST THE WIDTH OF MULTIPLE ROWS	28
HOW TO AUTOFIT ROW HEIGHT & COLUMN WIDTH	29
<u>NAVIGATING THE HOME TAB.....</u>	<u>31</u>
THE CLIPBOARD GROUP	31
USING THE CUT & PASTE COMMANDS	31
USING THE COPY & PASTE OPTION.....	33
THE FORMAT PAINTER.....	35
HOW TO USE THE FORMAT PAINTER.....	35
HOW TO LOCK THE FORMAT PAINTER	37
HOW TO UNLOCK THE FORMAT PAINTER.....	39
THE FONT GROUP	40
CHANGING THE FONT STYLE	40
BORDERS & COLORS	42
THE ALIGNMENT GROUP	42
TEXT ALIGNMENT	43
TEXT ORIENTATION.....	44
INDENTATION	45
<i>How to Increase Indentation.....</i>	<i>45</i>
<i>How to Decrease Indentation.....</i>	<i>46</i>
WRAP TEXT	47
MERGE & CENTER	47
THE NUMBER GROUP.....	49
ENTERING NUMBERS IN A CELL	49

CHOOSING NUMBER FORMATS FROM COMMANDS DISPLAYED IN THE RIBBON	49
PERCENTAGES	50
FOREIGN CURRENCY	52
HOW TO INCREASE THE DECIMAL PLACES OF A NUMBER	53
HOW TO DECREASE THE DECIMAL PLACES OF A NUMBER	54
HOW TO ENTER DATES IN A CELL	55
HOW TO ENTER A DATE AS A 'DATE' FORMAT	55
HOW TO QUICKLY CUSTOMIZE YOUR 'DATE' FORMAT	56
MORE NUMBER FORMATS	57
CONDITIONAL FORMATTING	59
HIGHLIGHT CELLS RULES	60
<i>Greater Than</i>	60
<i>Less Than</i>	64
<i>Between</i>	67
<i>Equal To</i>	70
<i>Text That Contains</i>	72
<i>A Date Occurring</i>	76
<i>Duplicate Values</i>	79
TOP/BOTTOM RULES	81
<i>Top 10 Items</i>	81
<i>Top 10%</i>	84
<i>Bottom 10 Items</i>	86
<i>Bottom 10%</i>	89
<i>Above Average</i>	91
<i>Below Average</i>	93
DATA BARS	95
COLOR SCALES	98
ICON SETS	100
NEW RULES & MORE RULES	103
HOW TO CLEAR RULES	104
HOW TO MANAGE RULES	105
THE CELLS GROUP	107
INSERTING NEW CELLS	107
DELETING CELLS	109
INSERTING ROWS & COLUMNS	110
DELETING ROWS & COLUMNS	111
INSERTING NEW SHEETS	112
DELETING SHEETS	113
ADJUSTING THE CELL SIZE	114
HIDING & UNHIDING COLUMNS, ROWS AND SHEETS	115
HOW TO MOVE COLUMNS OR ROWS FROM ONE PLACE TO ANOTHER	116

ORGANIZING YOUR SHEETS..... 118

RENAMING YOUR SHEET	118
MOVING & COPYING A SHEET	119
TAB COLOR.....	121

THE EDITING GROUP 122

WHAT IS SORTING AND WHY USE IT?	122
HOW TO SORT YOUR DATA IN EXCEL.....	123
CUSTOM SORT	124
WHAT ARE FILTERS?	128
HOW TO ADD FILTERS TO YOUR TABLE.....	128
HOW TO USE FILTERS.....	129
HOW TO UNFILTER YOUR DATA	131
HOW TO REMOVE FILTERS	132
THE FIND COMMAND.....	133
FIND & REPLACE	135

CUSTOMIZING YOUR PAGE LAYOUT..... 137

PAGE SETUP 137

CHANGING THE PAGE MARGINS.....	137
HOW TO CUSTOMIZE YOUR PAGE MARGINS.....	138
CHANGING THE PAGE ORIENTATION	140
CHOOSING THE SIZE OF THE PAPER	141
USING THE PRINT AREA	142
HOW TO CLEAR THE PRINT AREA.....	143
PRINTING TITLES.....	144

PRINTING SPREADSHEETS 146

OTHER SHEET OPTIONS	147
<i>How to Remove the Gridlines.....</i>	147
<i>How to Remove the Headings.....</i>	147
SCALING TO FIT	149
<i>How to Change the Width and Height of Your Sheet to Print.....</i>	149
<i>Changing the Scale.....</i>	150

NAVIGATING THE VIEW TAB 151

WORKBOOK VIEWS 151

NORMAL VIEW.....	151
PAGE BREAK PREVIEW.....	152
PAGE LAYOUT VIEW.....	153
SHOW GROUP.....	154
HOW TO HIDE THE GRIDLINES IN A SPREADSHEET	155
HOW TO HIDE THE FORMULA BAR.....	155
HOW TO HIDE THE HEADINGS IN YOUR SPREADSHEET	156
HOW TO HIDE THE RULER IN EXCEL	156
ZOOM GROUP.....	157
THE ZOOM (MAGNIFYING GLASS) COMMAND.....	158
100% ZOOM.....	159
ZOOM TO SELECTION	159
THE WINDOW GROUP.....	161
HOW TO USE THE NEW WINDOW COMMAND	161
USING THE 'ARRANGE ALL' WINDOW VIEW.....	162
HOW TO FREEZE PANES.....	163
HOW TO UNFREEZE PANES.....	164
THE SPLIT (WINDOW) VIEW	165
HOW TO REMOVE THE SPLIT WINDOW VIEW	166
HOW TO HIDE YOUR CURRENT WORKBOOK.....	167
HOW TO UNHIDE A HIDDEN WORKBOOK.....	167
<u>ADDITIONAL EXCEL FUNCTIONS</u>	<u>169</u>
INSERTING A HEADER TO YOUR SHEET	169
INSERTING A FOOTER TO YOUR SHEET.....	170
RIGHT-CLICKING	171
HIDING & GROUPING COMMANDS	172
HIDING VS GROUPING COLUMNS AND ROWS	172
HOW TO USE THE GROUP FUNCTION	172
UNGROUPING COLUMNS OR ROWS	174
REMOVING DUPLICATES.....	175
DATA VALIDATION.....	177

THINGS TO CONSIDER WHEN USING DATA VALIDATION	177
HOW TO RESTRICT ENTRIES IN CELLS	177
HOW TO USE A MANUAL LIST FOR DATA VALIDATION	179
HOW TO USE A TABLE OR LIST FOR DATA VALIDATION	181
HOW TO CHANGE THE INPUT MESSAGE WHEN ENTERING DATA	184
HOW TO CUSTOMIZE THE ERROR ALERT IN A DATA VALIDATION LIST	186
THE CIRCLE INVALID DATA OPTION	188
CLEAR VALIDATION CIRCLES	189

PROTECTING YOUR SHEET OR WORKBOOK..... 190

HOW TO PASSWORD-PROTECT YOUR WORKBOOK.....	190
HOW TO REMOVE THE PASSWORD-PROTECTION OF YOUR WORKBOOK	192
PROTECTING YOUR SHEET SO THAT NO ONE CAN MAKE EDITS.....	193
HOW TO REMOVE THE PASSWORD-PROTECTION FROM YOUR SPREADSHEET	195
HOW TO LIMIT USERS FROM MAKING FORMAT CHANGES OR EDITS ON SPREADSHEETS	196
HOW TO UNLOCK ALL CELLS IN YOUR SPREADSHEET	198
HOW TO RESTRICT USERS FROM TOUCHING OR EDITING AREAS IN YOUR SPREADSHEET	199
HOW TO PASSWORD-PROTECT AREAS IN YOUR SPREADSHEET	202

BECOME MORE EFFICIENT IN EXCEL206

AUTO FILL 206

THE FILL BUTTON	206
THE AUTO FILL HANDLE.....	207
HOW TO USE THE AUTO FILL HANDLE	207
HOW TO USE THE AUTO FILL HANDLE WITH PATTERNS	208

CREATING AND WORKING WITH HYPERLINKS 209

WHAT IS A HYPERLINK?	209
HOW TO INSERT A HYPERLINK TO AN EXISTING FILE	210
HOW TO INSERT A HYPERLINK DIRECTED TO A WEB PAGE.....	212
HOW TO INSERT A HYPERLINK TO A LOCATION IN YOUR WORKBOOK	214
HOW TO INSERT A HYPERLINK TO AN EMAIL ADDRESS	216
HOW TO QUICKLY MODIFY HYPERLINKS	218
HOW TO MAKE CHANGES TO YOUR HYPERLINKS	219
HOW TO FORMAT A HYPERLINK.....	220
HOW TO CHANGE THE DEFAULT FORMATTING FOR ALL HYPERLINKS.....	221
HOW TO REMOVE THE HYPERLINK.....	224

WORKING WITH TABLES..... 225

LIST VS TABLES	225
<i>What Are Lists?</i>	226
<i>Why are Lists Not Considered Tables?</i>	226
<i>What is a Table?</i>	226
<i>What are the Benefits of Using A Table?</i>	227
<i>What Are Some Limitations to Using Tables?</i>	227
CONVERTING YOUR LIST INTO A TABLE	227
EDITING & CUSTOMIZING TABLES.....	229
<i>Navigating Through Your Table</i>	229
<i>How to Name/Rename Your Table</i>	229
<i>How to Update or Change the Range of Your Table</i>	230
<i>How to Change the Style of Your Table</i>	231
<i>How to Get Rid of The Table Formatting</i>	233

INTRODUCTION TO EXCEL FORMULAS 235

5 TIPS TO REMEMBER ABOUT EXCEL FORMULAS..... 235

EXCEL SPEAKS ITS OWN LANGUAGE	235
AN EXCEL FORMULA CANNOT READ WORDS	235
IF YOU'RE STUCK WITH A FORMULA, READ IT OUT LOUD.....	235
IN EXCEL, THERE ARE MULTIPLE WAYS TO DO THE SAME THING	236
WORK ON THE FIRST ENTRY OR ROW BEFORE MOVING ON	236

WRITING EXCEL FORMULAS..... 236

THE FORMULA BAR.....	237
INSERT FUNCTION OPTION	237
THE NAME BOX.....	237
WRITING FORMULAS IN CELLS	237
THE COLORS OF THE CELLS	238

BASIC OVERVIEW OF FORMULAS 238

THE EQUAL SIGN IN EXCEL FORMULAS	238
USING OPERATORS IN EXCEL FORMULAS	238
<i>Addition</i>	239
<i>Subtraction</i>	239
<i>Multiplication</i>	239
<i>Division</i>	239
<i>Power</i>	239
CELL REFERENCES VS. CONSTANTS.....	239
THE STATUS BAR	240

HOW TO WRITE FORMULAS	240
THE FORMULA FUNCTION	241
THE PARENTHESES IN EXCEL FORMULAS	241
ARGUMENTS IN EXCEL FORMULAS	241
COMPLETING A FORMULA	241
 WRITING BASIC EXCEL FORMULAS	 243
 THE AUTOSUM FUNCTION	 243
USING THE AUTOSUM BUTTON	243
OTHER AUTOSUM CALCULATIONS	245
 THE AUTO FILL HANDLE	 247
HOW TO DRAG THE AUTO FILL HANDLE WHEN USING PATTERNS	248
HOW TO USE THE AUTO FILL HANDLE TO DUPLICATE FORMULAS	249
DOUBLE-CLICKING THE AUTO FILL HANDLE TO COPY FORMULAS	250
 SUM FORMULA	 251
CELL RANGES IN FORMULAS	254
USING COMMAS IN FORMULAS	254
 AVERAGE FORMULA	 255
 COUNT FORMULA	 257
 COUNTA FORMULA	 260
 MAX FORMULA	 262
 MIN FORMULA	 264
 PROPER FORMULA	 266
 LOWER FORMULA	 267
 UPPER FORMULA	 269
 TRANSLATING EXCEL FORMULAS	 270
 QUICK EXCEL CALCULATIONS	 271

WORKING WITH DATES..... 271

FORMATTING DATES	271
CUSTOMIZING THE DATE FORMATS	272
WORKING WITH DATES AND FORMULAS.....	274
TODAY FORMULA.....	275
ADDING A DATE AND NUMBER OF DAYS TO CALCULATE A FUTURE DATE.....	275
USING FORMULAS WITH CELL REFERENCES THAT HAVE DATES	276
DAYS FORMULA	277
YEARFRAC FORMULA	278
DAY FORMULA	279
MONTH FORMULA.....	280
YEAR FORMULA	281

WORKING WITH ADVANCED EXCEL FORMULAS 283

ANCHORS IN FORMULAS 283

WHY DO I NEED TO USE ANCHORS?	283
HOW TO USE ANCHORS IN FORMULAS	283

ADVANCED TEXT FORMULAS & FUNCTIONS..... 285

LEFT FORMULA	285
RIGHT FORMULA.....	287
MID FORMULA	288
CONCATENATE FORMULA	290
<i>How to use the CONCATENATE formula</i>	<i>291</i>
<i>How to Use Characters in Your Formula That Excel Cannot Read</i>	<i>292</i>
TEXT TO COLUMNS	293

ADVANCED NUMERICAL FORMULAS 296

IFERROR FORMULA	296
SUMIF FORMULA VS. SUMIFS FORMULA	298
<i>SUMIF Formula.....</i>	<i>298</i>
<i>SUMIFS Formula.....</i>	<i>300</i>
COUNTIFS FORMULA	302
AVERAGE IFS FORMULA	304

LOGICAL FORMULAS..... 307

IF FORMULA	307
HOW TO USE AN IF FORMULA WITH ONE CONDITION.....	308

HOW TO USE THE IF FORMULA WITH MORE THAN ONE CONDITION	309
<i>An Easy way to use an IF Formula with multiple conditions</i>	310
<i>Using IF Formulas as the TRUE statement of an argument</i>	313
AND FORMULA	315
USING THE AND FORMULA WITH AN IF FORMULA.....	317
OR FORMULA	319
USING THE OR FORMULA WITH AN IF FORMULA	320
MORE ADVANCED FUNCTIONS IN EXCEL	322
NAME RANGES.....	322
<i>How to Apply Name Ranges</i>	322
<i>How to quickly name and access your tables</i>	324
<i>How to use Name Ranges in your formulas</i>	326
AUDITING FORMULAS	327
<i>The Show Formulas Command</i>	327
<i>How to remove the Show Formulas function</i>	328
<i>Introduction to Error Checking</i>	329
<i>Error Checking</i>	329
<i>Trace Error</i>	332
<i>Circular References</i>	333
<i>Trace Dependents</i>	335
<i>Trace Precedents</i>	336
<i>How to remove Arrows</i>	337
LOOKUP FORMULAS	338
VLOOKUP FORMULA	338
HLOOKUP FORMULA.....	341
LOOKUP FORMULA	344
INDEX FORMULA.....	346
MATCH FORMULA.....	348
PIVOT TABLES	350
WHAT IS A PIVOT TABLE?	351
WHY USE A PIVOT TABLE?	351
HOW TO CREATE A SIMPLE PIVOT TABLE.....	351
HOW TO MAKE CALCULATIONS IN PIVOT TABLES	354
HOW TO CHANGE THE CALCULATION TYPE OF A PIVOT TABLE	355
HOW TO CHANGE THE DATA SOURCE OF A PIVOT TABLE	357
HOW TO REFRESH THE DATA IN A PIVOT TABLE.....	359
HOW TO HIDE THE FIELD LIST OF A PIVOT TABLE	360
HOW TO HIDE THE BUTTONS IN PIVOT TABLES	361
HOW TO HIDE THE FIELD HEADERS IN PIVOT TABLES.....	362

HOW TO RENAME YOUR COLUMNS IN A PIVOT TABLE	363
HOW TO CUSTOMIZE THE STYLE OF YOUR PIVOT TABLE	364
HOW TO CUSTOMIZE THE SUBTOTALS OF YOUR PIVOT TABLE	365
HOW TO CUSTOMIZE THE GRAND TOTALS OF YOUR PIVOT TABLE	366
HOW TO CUSTOMIZE THE REPORT LAYOUT OF YOUR PIVOT TABLE	368
HOW TO INCLUDE COLUMNS IN YOUR PIVOT TABLE	369
HOW TO REPEAT ENTRIES IN PIVOT TABLES	371
HOW TO INSERT BLANK ROWS IN PIVOT TABLES	373
HOW TO REMOVE BLANK ROWS IN PIVOT TABLES	374

SLICERS..... 375

WHAT IS A SLICER?	375
HOW TO ADD SLICERS	375
HOW TO USE SLICERS	378
HOW TO REMOVE A SLICER	378

PIVOT CHARTS..... 379

THE CONNECTION BETWEEN PIVOT CHARTS & PIVOT TABLES	379
HOW TO CREATE A COLUMN BAR-GRAPH	379
HOW TO CREATE A LINE GRAPH	382
HOW TO CREATE A PIE CHART	384
HOW TO CREATE A BAR GRAPH	386
HOW TO REMOVE THE BUTTON LABELS FROM YOUR PIVOT CHARTS.....	388
HOW TO ADD AN ADDITIONAL ELEMENT TO YOUR PIVOT CHART	390
HOW TO CHANGE THE LAYOUT OF YOUR PIVOT CHART	392
HOW TO CHANGE THE CHART TYPE OF YOUR PIVOT CHART AFTER YOU ALREADY CREATED A PIVOT CHART	394
HOW TO QUICKLY CHANGE THE COLOR SCHEME OF YOUR PIVOT CHART	396
HOW TO CUSTOMIZE THE FORMAT OF YOUR PIVOT CHART	398

BASIC EXCEL SHORTCUTS 400

COMMONLY USED SHORTCUTS 400

COPY.....	400
PASTE.....	400
CUT.....	400
HIGHLIGHT ALL	400
BOLD.....	400
UNDERLINE.....	400
ITALICIZE	400
FIND TEXT	400
UNDO.....	400

SAVE A WORKBOOK	400
CLOSE A WORKBOOK	400
OPEN A WORKBOOK	400
CENTER ALIGN CELL CONTENTS.....	400
DELETE COLUMN	400
ADD BORDERS.....	400
HIDE SELECTED ROWS.....	400
HIDE SELECTED COLUMNS	400

KEYBOARD SHORTCUTS FOR RIBBONS 401

GO TO THE HOME TAB	401
GO TO THE INSERT TAB.....	401
GO TO THE DRAW TAB	401
GO TO THE PAGE LAYOUT TAB	401
GO TO THE FORMULAS TAB	401
GO TO THE DATA TAB	401
GO TO THE REVIEW TAB	401
GO TO THE VIEW TAB.....	401
GO TO THE HELP TAB	401

KEYBOARD SHORTCUTS FOR NAVIGATING THROUGH A SPREADSHEET..... 402

MOVE ONE CELL RIGHT IN A SPREADSHEET	402
MOVE ONE CELL LEFT IN A SPREADSHEET	402
MOVE ONE CELL UP IN A SPREADSHEET	402
MOVE ONE CELL DOWN IN A SPREADSHEET	402
MOVE ONE CELL RIGHT ON A SPREADSHEET (OR THE NEXT UNLOCKED CELL)	402
MOVE TO THE LAST ENTRY OF A REGION	402
MOVE TO THE LAST CELL ON A SPREADSHEET	402
MOVE TO THE LAST USED CELL ON A SPREADSHEET	402
MOVE TO THE TOP OF A SPREADSHEET	402
MOVE ONE SCREEN DOWN IN A SPREADSHEET	402
MOVE ONE SCREEN TO THE RIGHT IN A SPREADSHEET.....	402
MOVE ONE SCREEN UP IN A SPREADSHEET.....	402
MOVE ONE SCREEN TO THE LEFT IN A SPREADSHEET	402
MOVE TO THE NEXT SPREADSHEET IN A WORKBOOK	402
MOVE TO THE PREVIOUS SPREADSHEET IN A WORKBOOK	402

COMMON FORMULA ERRORS IN EXCEL403

#####	403
#DIV/0	403

#NAME?	404
#VALUE!	404
#REF!.....	404

A Message From the Author

Congratulations on taking ownership of your professional development. My name is Allen Aguilar and I am the author of this booklet. My intention with this message is to provide you with additional context about this booklet and details on how to use it.

I began to use Excel since I was about 11 years old. However, I never received formal training in Excel until college but forgot most of it because I stopped using it. It wasn't until I worked for a start-up company that Excel became the every-day software to use. This booklet is intended for the Excel user who is looking to build up their Excel skills and thinking. Although I do cover some of the Excel terminology in this booklet, I shy away from being too technical, and instead, provide a very practical approach to learning.

About This Booklet

This booklet can be used as a reference guide for any Microsoft Excel user. This booklet most likely accompanies one of my in-person trainings or online courses on the same topic. My Excel trainings are typically delivered in-person or online and includes a booklet (such as the one you're reading) with Excel files where the participants get to practice what they learned. To learn more about my trainings, please visit www.leadershipbuild.com.

How to Use This Booklet

This booklet will take you step-by-step through the journey of an Excel user starting with beginner-level concepts and gradually presenting advanced features in Excel. There are various screenshots that will help you visualize my explanations in this booklet. Additionally, there are practice exercises along with this booklet that will help you apply what you are learning. If you purchased one of my online courses, or are attending an in-person training, the practice exercises will be provided for you by your instructor.

If you have any questions or would like to get in contact with me, please feel free to send me an email at allenaguilar@leadershipbuild.com. Enjoy!



Allen Aguilar

Founder of Leadership Build

Introduction

Excel continues to be a very popular software used across different companies. Most people don't know this, but MS Excel existed since 1985, making its way to the offices of different companies throughout the world.

Why Excel?

Excel is typically used to capture information in a centralized location. However, the true power of Excel lies in its ability to make calculations by using different formulas and functions. MS Excel is one of the most powerful software that can make computations, forecasts, charts, graphs and organize data in a way that can be understood.

How can this booklet help me professionally?

Depending on the type of work that you do, a good understanding of Excel can help you become faster at your job. Excel experts are extremely efficient when it comes to projects, reports and sharing information. Those that use Excel with proficiency will save time because Excel will do the work for them. This booklet will not only help you learn more Excel features, but will also help you get better at problem solving by deciding which Excel function is the most efficient to use.

What does this booklet cover?

In this Microsoft Excel booklet, you will learn:

1. The basic layout of Excel along with the most common terminology
2. How to navigate through the Excel interface
3. How to customize the layout of an Excel sheet by using borders
4. How to easily manipulate the size of cells
5. How to change the data of the cells
6. How to sort and organize your data
7. How to filter your data appropriately
8. How to use the menu and top ribbons to access Excel functions
9. How to add, change and use Headers and Page Layouts
10. How to Freeze Panes to view data
11. How to group cells together and the difference between grouping and hiding
12. How to use Shortcuts and become faster at using Excel

13. How Excel reads formulas and how it works
14. Writing and reading Excel formulas
15. The different uses of ranges within cells and formulas
16. Create a spreadsheet from scratch
17. Manipulate a spreadsheet based on given instructions
18. Use basic Excel formulas
19. How to identify certain errors when using Excel
20. Use formulas with constants and cell references
21. More advanced techniques on using the Format Painter
22. How to use indentation and additional number formats
23. How to use different types of Conditional Formatting and how to set rules for your formatting
24. How to create data validation cells and drop-down entries
25. How to protect your workbook, sheet and restrict areas from being touched or edited
26. How to work with a list and table and how to convert a list into a table
27. How to customize your table and work with different types of formatting
28. A few tips on Excel formulas
29. How to use the Auto Fill Handle
30. How to use anchors when using the Auto Fill Handle and formulas
31. How to work with date formulas and use dates to make calculations
32. How to use more intermediate formulas
33. How to set up pages to print properly
34. How to change print settings for your printing needs
35. How to become more efficient in Excel with hyperlinks
36. How to better work with Tables, records and fields
37. How to effectively work with dates on spreadsheets
38. Formulas to help you make calculations with dates
39. How to become more efficient with Names and Ranges
40. An introduction to basic Logical Formulas such as the SUMIFS formula and others
41. How to use different types of Logical Formulas such as the OR formula, AND formula and the IF formula
42. The difference between the different types of *lookup* formulas
43. How to use the VLOOKUP, HLOOKUP and the LOOKUP formulas
44. How to work with Pivot Tables, perform Pivot tasks and more
45. How to set up pages and update settings in your sheets to print according to needs

Basic Terminology

Before you dig deep into this booklet, it is important that you know some of the terminology that we will use throughout the book. As you read through this booklet you will encounter different words that are used in Excel and you will get a chance to learn the definition of those words. Just like anything new that is worth learning, it takes some time to get used to the terminology used in Excel. This booklet can't confirm your previous Excel training so it will make the assumption that you know some terms and not others. However, we want to make sure that we speak the same language which is why we want to include four terms and its definition in this section.

A Workbook

A Workbook consists of one or many spreadsheets. You can think of a Workbook as a book with different pages (or sheets) that you are working on. Typically, when you save your work in Excel, you save it as a Workbook file.

A File

A file is the name of your workbook. Think of it as a book that you are 'filing' away. You need to give it a name so that you can easily find it later. The older versions of Excel save workbooks as .xls. Newer version of Excel saves files as .xlsx.

A Spreadsheet

The spreadsheet is the platform that allows you to do your work with cells, make calculations, enter data, store data, create graphs and display any type of information you would like to present. Spreadsheets are sometimes called 'sheets' or 'Excel sheets' as well.

Gridlines

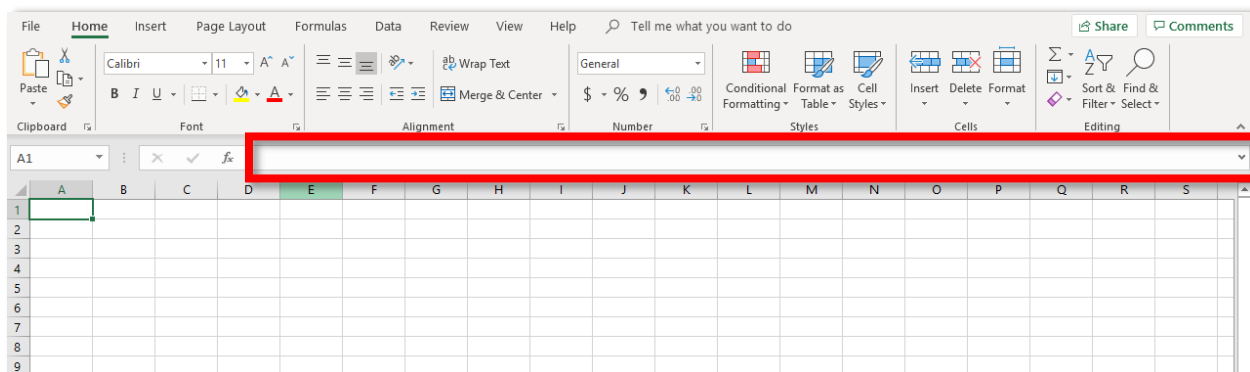
Gridlines are the 'rectangles' that you see on a spreadsheet. They help users gauge the space between each entry while neatly organizing data. The gridlines do not print unless you modify a setting in Excel.

The Layout of a Spreadsheet

Before we truly begin to use Excel let's first look at the layout of a spreadsheet, discuss how to navigate within the interface and share some common terminology. To gain a better visual of the various parts of a spreadsheet, this booklet provides numerous screenshots to help you locate and identify each part.

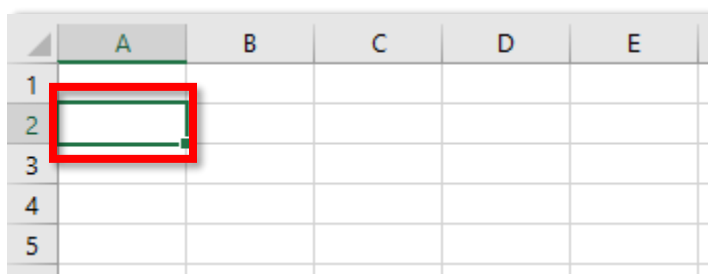
The Formula Bar

The Formula Bar is the place where you can write formulas, edit formulas and see the formulas displayed that are written in a cell. You can also write formulas directly into a cell but in our opinion writing the formulas in the formula bar is the safest way to write formulas.



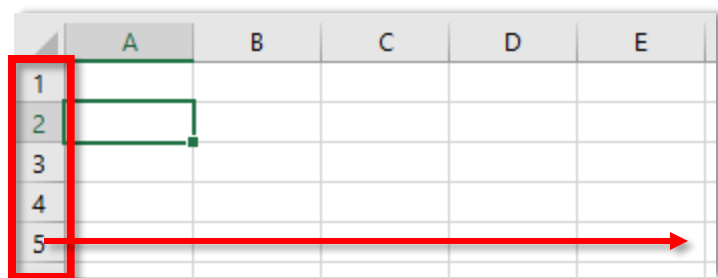
Cells

A spreadsheet consists of various cells that allow users to insert data or type formulas. Cells are named by the letter of the column followed by the number of the row. For example, Cell A2 refers to the cell in Column A and Row 2.



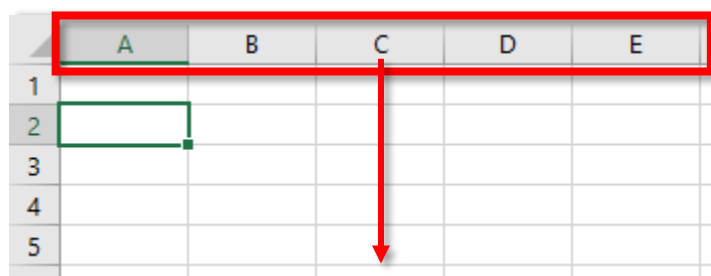
Rows

Rows are represented by a number and go across the spreadsheet from left to right. For example, Row 5, refers to the fifth row on the left side with a number '5'.



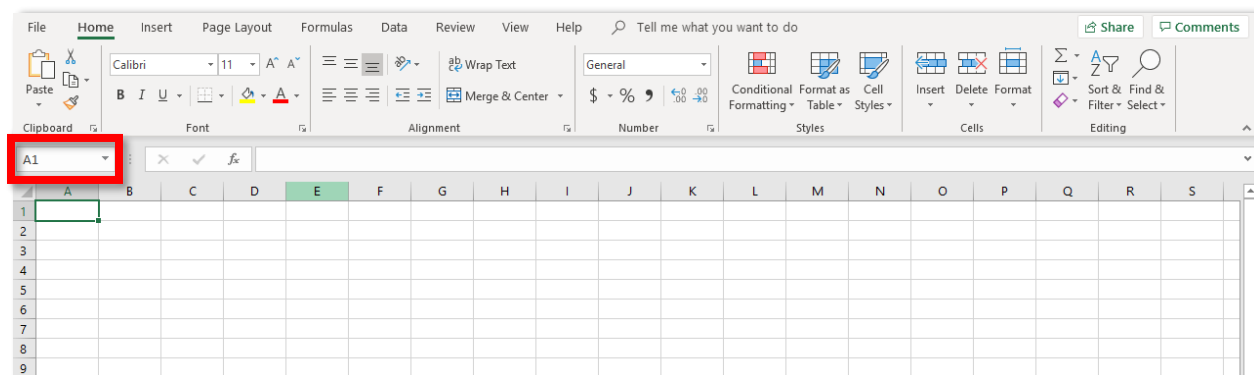
Columns

Columns are represented by a letter and run up and down on a spreadsheet. For example, Column C refers to the column at the top with the letter 'C'.



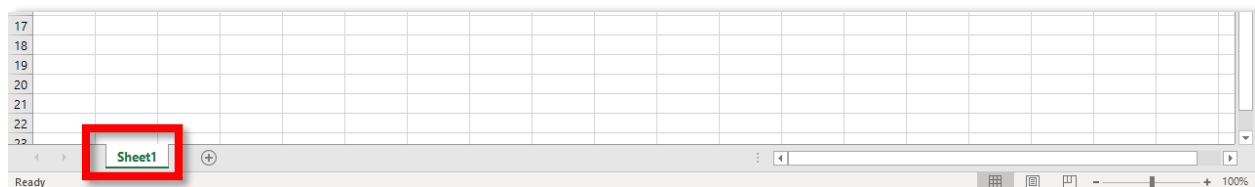
Name Box

The Name Box not only displays the name of a cell but also allows you to name ranges, spreadsheets and sections of spreadsheets for easier accessibility and navigation.



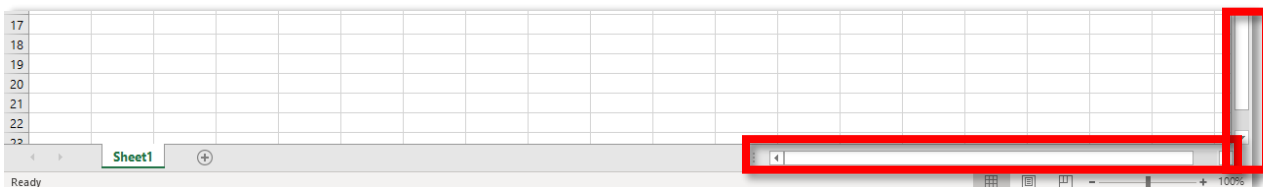
Sheet Name

The name of the spreadsheet can be found at the bottom of the spreadsheet, in the bottom tab. The spreadsheet's name defaults to 'Sheet 1' typically uses a green font color with no background. The name of the tab can be changed, and the color and style are customizable.



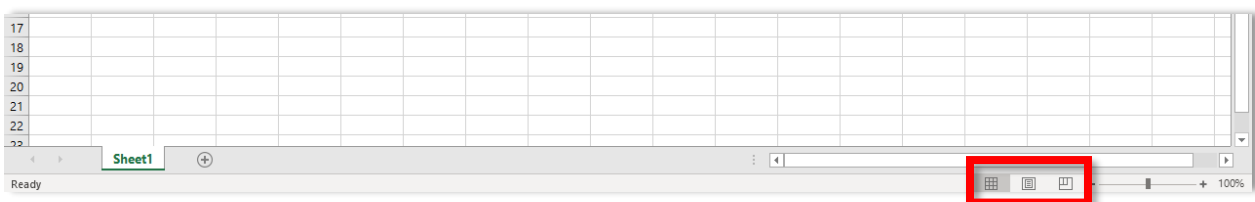
The Navigation Bar

A spreadsheet commonly has two bars to allow you to move through the spreadsheet: one is located at the bottom (lower-right hand corner) and the other is located on the right side. These navigation bars allow you to move up and down the spreadsheet (the bar on the right side) and from left to right. You can also use the arrows to move around the spreadsheet.



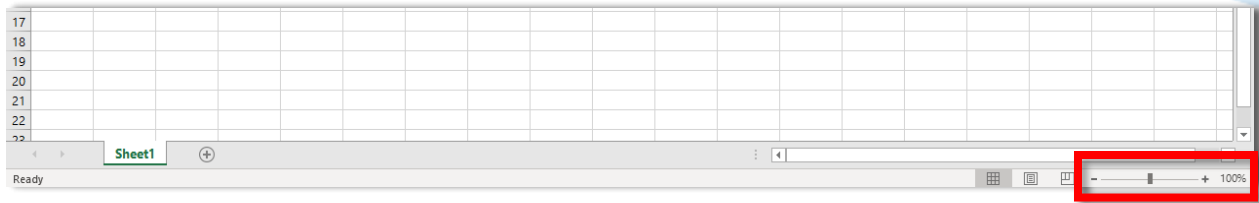
Workbook Views

At the bottom of the spreadsheet there are three icons right below the navigation bar. The three icons represent three distinct Workbook Views. By default, Excel chooses the 'Normal' Workbook view. The other two views are the **Page Break Preview** and the **Page Layout**.



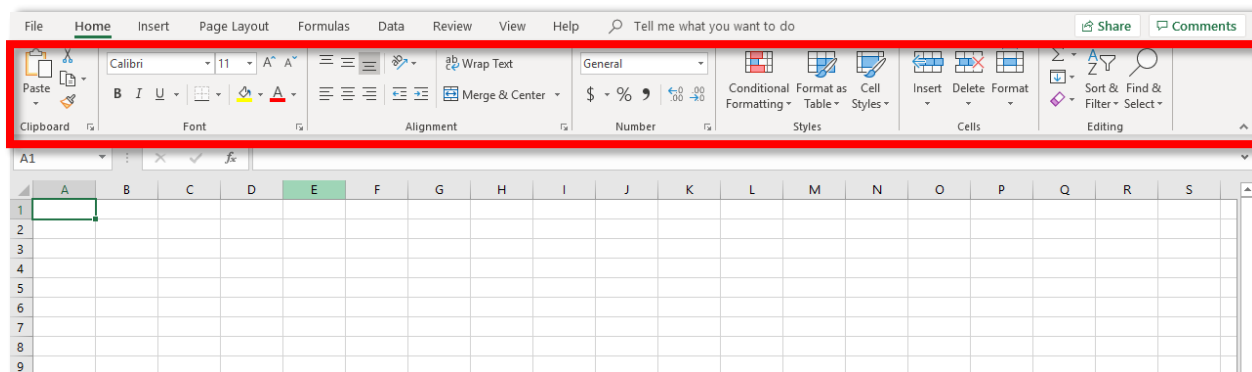
Zoom

In the lower-right hand corner of the spreadsheet, you will find a lever that allows you to zoom in and out of the spreadsheet. Excel defaults to a 100% view.



The Ribbon

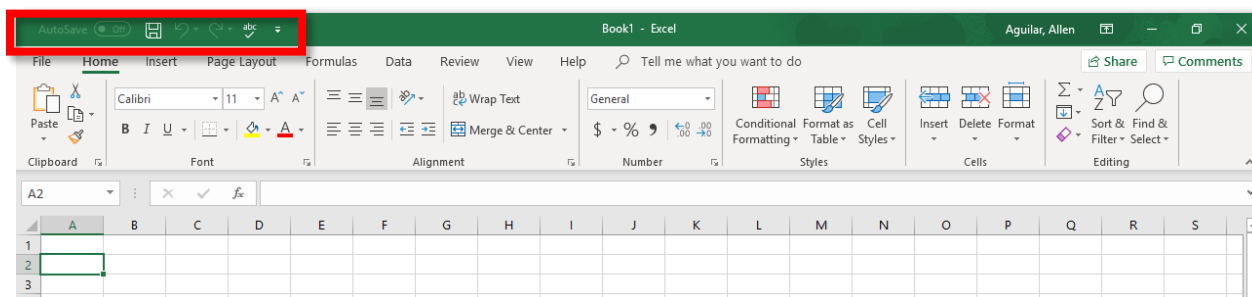
The Ribbon is a common term used to refer to the top menu of a page in any type of software. This is true for any Microsoft program or any software that has buttons, options, menu bars or selections at the top of the page. The Ribbon allows you to choose commands (or buttons) to perform a certain function in Excel.



The types of commands visible in the Ribbon will depend on the tab that you're working on. For example, the Home tab has a different Ribbon than the Insert tab.

Quick Access Toolbar

At the very top of the ribbon are different icons that are set by Excel by default. Most likely, the icons you see are the 'Save' icon and the 'Undo' icon. The Quick Access Toolbar allows you to pin icons at the top for quick and easy access. Need to save a file without having to navigate through different Tabs? Then just click on the 'Save' icon on the Quick Access Toolbar. The Quick Access Toolbar is customizable.



The Most Common Commands in The Quick Access Toolbar

Since the Quick Access Toolbar is always accessible, you want to make sure that you have the most common commands readily available. Below is a list of the most commonly used commands:

- Save

- Undo
- Redo
- Spelling & Grammar
- Print

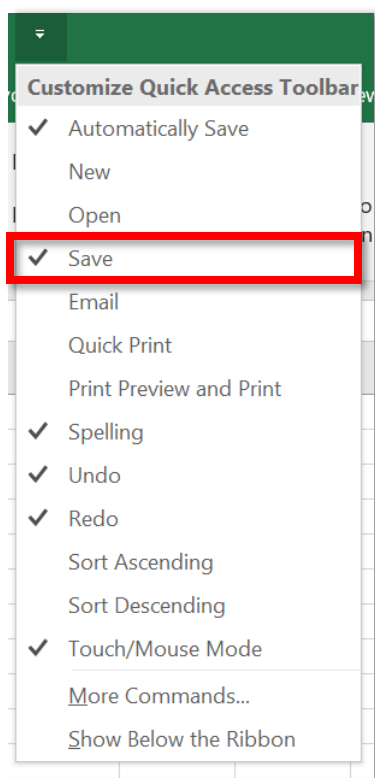
How to Customize the Quick Access Toolbar

To customize the Quick Access Toolbar, follow these two steps:

1. Click on the *down arrow* next to the **Quick Access Toolbar**.



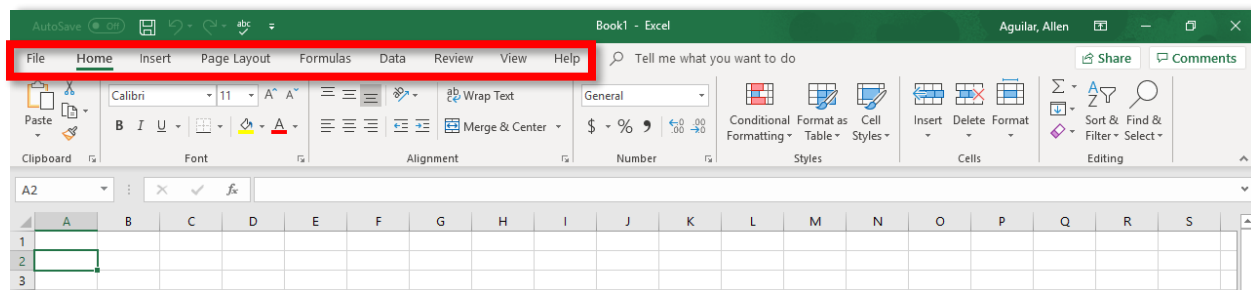
2. Select the icons you want to include on the **Quick Access Toolbar** with a checkmark by clicking on the command of your choice.



Tabs

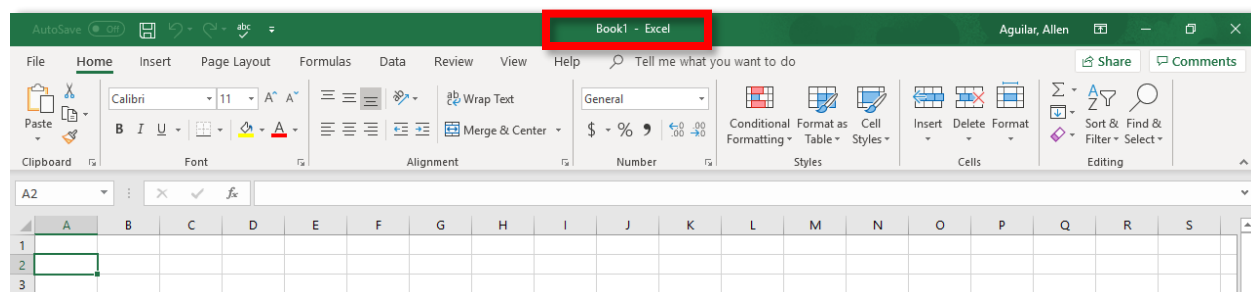
At the top of the ribbon you have what seems to be a menu to different pages (called **Tabs**) to use in Excel. Excel defaults to the Home tab. Each tab allows the Excel user to access

different buttons, layouts and functionalities in the tab's ribbon. In this booklet, we will be exploring most of the **Tabs** in Excel and the basic commands in each ribbon.



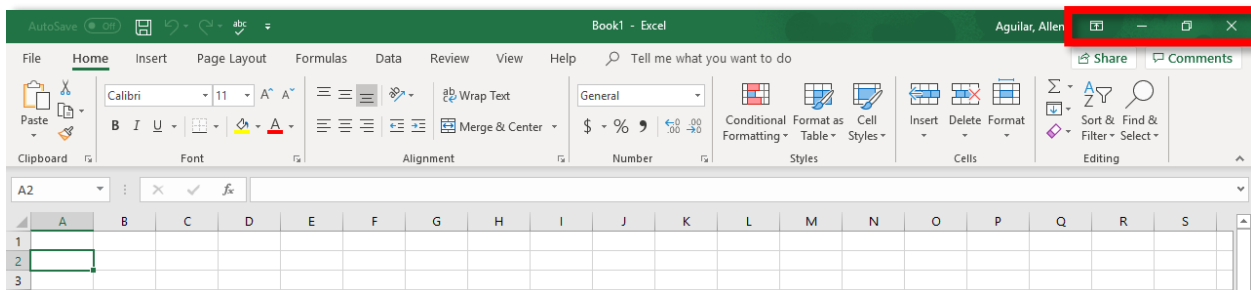
File Name

At the top of the ribbon you will see the name of your file. By default, Excel will name your Excel file 'Book 1'. Once you save your workbook under another name, the new name will appear at the top of the ribbon. This helps you easily identify which workbook you're editing when you work with multiple workbooks at the same time.



Window & Ribbon Options

In the upper-right hand corner of your screen, you will be able to change the display of your ribbon, minimize your window and exit the Excel program. Let's discuss each option in detail.



The Ribbon Display Option

By default, the Ribbon is displayed at the top at all times (or 'stays pinned'). However, some people like to see more of their spreadsheet and prefer for the Ribbon to only appear when needed. There is an option in the upper-right hand corner that will allow you to customize the way your ribbon is displayed.

How to Auto-hide Your Ribbon

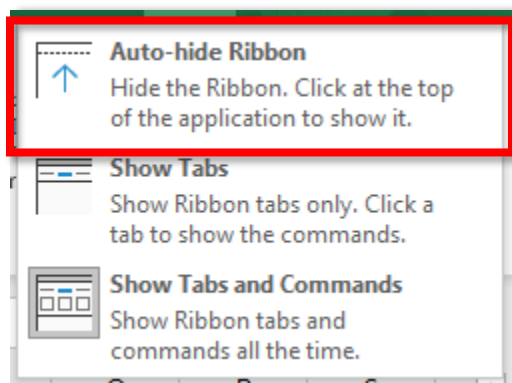
The **Ribbon Display Option** allows you to hide and unhide your Ribbon. To change the current settings and auto-hide your Ribbon, follow these steps:

1. Click on the **Ribbon Display Option** icon in the upper-right hand corner of your

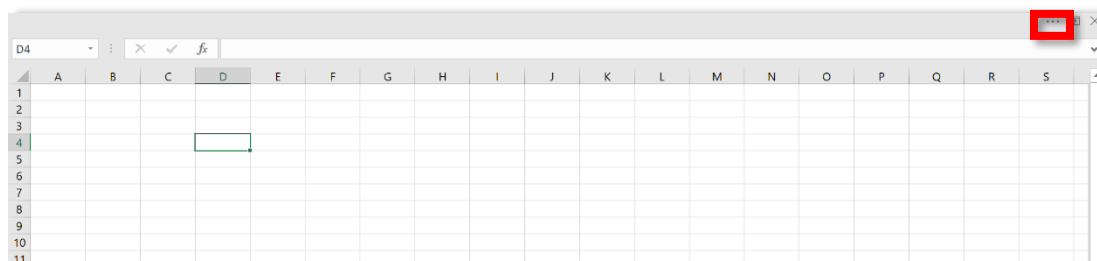


Ribbon.

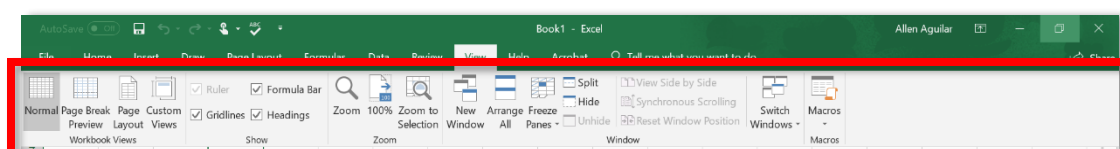
2. Select the *Auto-Hide Ribbon* option to hide the **Ribbon** from your view.



3. Your Ribbon will now “hide” at the top of your screen. To access the “hidden” Ribbon, place your cursor at the top of the page until you see three dots show in the upper-right hand corner and click.



Your Ribbon will now display.



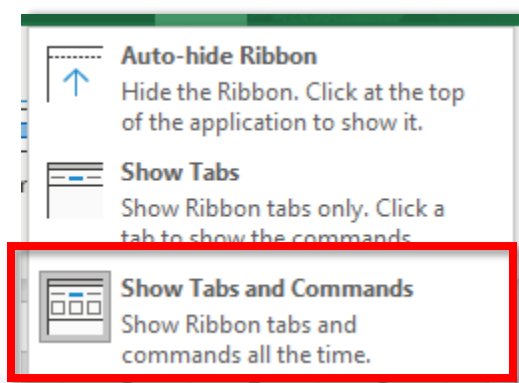
How to Remove the Auto-Hide Ribbon Option

To restore the original settings, you'll need to access the Ribbon Display Options and choose 'Show Tabs & Commands'. Here are the steps:

1. Click on the **Ribbon Display Option** icon in the upper-right hand corner of your Ribbon.



2. Select the *Show Tabs and Commands* option to permanently display the **Ribbon** from your view.



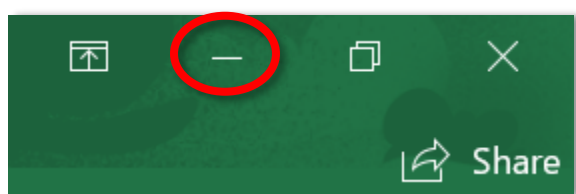
Minimize, Restore and Exit

When using Excel (or any Microsoft program for that matter) the program is displayed in a big window. You can have multiple windows from various programs (or the same program) at once. The window you use in Excel can be minimized.

How to Minimize your Excel window

To minimize the Excel window:

1. Click on the **Minimize** option icon in the upper-right hand corner of your



Ribbon.

2. The Excel program is *not* closed but is minimized and can be used by clicking on the Excel logo at the bottom of your screen.

How to Restore your Excel window

The Restore option is available in any window used within a Microsoft program. The Restore option has two purposes: 1) To display the Excel program in full-screen and 2) to display the Excel program in a window.

To restore your Excel window:

1. Make sure that the Excel program is displayed
2. Click on the **Restore** option icon in the upper-right hand corner of your Ribbon. Excel may ask you to *Restore Down* (view Excel as a window) or *Maximize* (view Excel in full-screen).



The Close Window Option

To exit Excel, you can use the **Close** icon in the upper-right hand corner of the screen. If your worked hasn't been saved, Excel will prompt you to save your work.



Entering Data in A Spreadsheet

Microsoft Excel can be used as a database to enter all types of data. In Excel, you can enter texts, numbers, dates, make calculations and organize your information in a table. Excel even can recognize patterns and automatically enter information for you. Let's explore how to enter data into cells.

Entering text in a cell

As previously mentioned, data entry is a popular use for Excel. To enter data into cells:

1. Click once on any cell

	A	B	C
1			
2			
3			
4			
5			
6			
7			

2. Type your data

	A	B	C
1	Account Name		
2			
3			
4			
5			
6			
7			

3. Press the **Enter** button on your keyboard

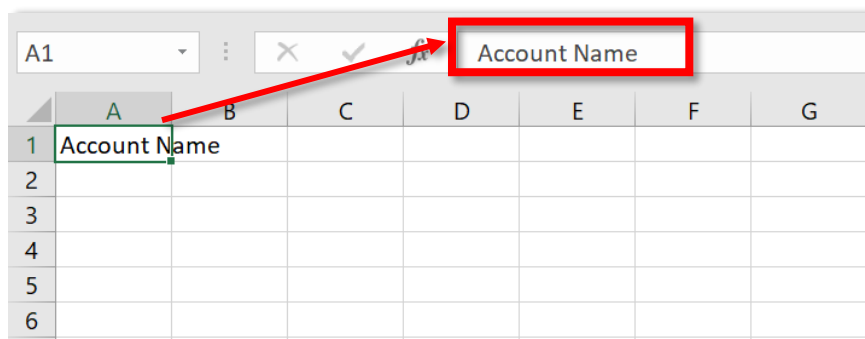
By pressing the **Enter** button, you will move to the cell below. To move in a horizontal direction, press the **Tab** button instead.

	A	B	C
1	Account Name		
2			
3			
4			
5			
6			
7			

If the information you enter is too long, the text will overlap onto the next cell. Remember only one of these cells has data inside the cell. The other cell seems to have data but technically does not have any information inside its cell.

Text in the Formula Bar

Data entered in cells will automatically appear in the **Formula Bar**. When you begin working with formulas, it is recommended that you make all edits in the **Formula Bar**. You can edit any text directly in the cells or in the **Formula Bar** as well.



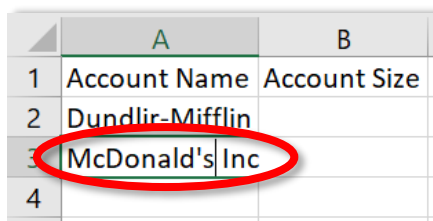
Editing text in a cell

You can go back and edit the contents of a cell by either overriding the content or by clicking and editing the cells directly. In this section, you'll learn the different ways to edit cells that already have content.

Editing by clicking on a cell

If you need to edit only certain parts of a cell, then you can follow these steps:

1. Double-click on the cell you want to edit to display the (flashing) edit symbol.

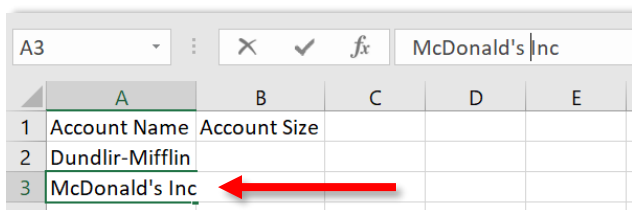


2. Move your cursor to the area you want to edit and click
3. Either delete or type the contents of the cell you want to edit

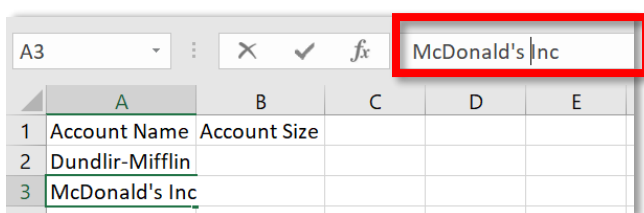
Editing by using the Formula Bar

You can also make edits to cells by using the **Formula Bar**. To use the **Formula Bar** to make edits follow these steps:

1. Click once on the cell you want to edit



2. Click on the **Formula Bar**

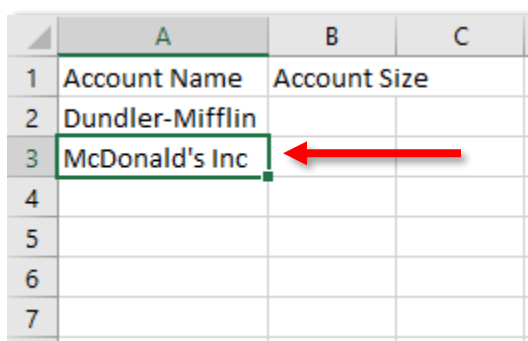


3. Either delete or type the data you want to edit directly in the **Formula Bar**.

Overriding text in a cell

Data entry is a big part of Excel and efficiency is one thing all Excel users are looking for. Therefore, it's so easy to quickly override the contents of a cell. To *completely* override the contents of a cell:

1. Click once on the cell you want to override



2. Type the new data

	A	B	C
1	Account Name	Account Size	
2	Dundler-Mifflin		
3	Burger King		
4			
5			
6			
7			

3. Press the **Enter** button on your keyboard

Anytime you type over a cell (by clicking on the cell once), you automatically override the contents of that cell.

Deleting text from a cell

To delete the information that exists inside a cell:

1. Click on the cell that contains the information you want to delete

	A	B	C
1	Account Name	Account Size	
2	Dundler-Mifflin		
3	Burger King		
4			
5			
6			
7			

2. Press the **Delete** button on your keyboard to remove the content

	A	B	C
1	Account Name		
2	Dundler-Mifflin		
3	Burger King		
4			
5			
6			
7			

3. Press the 'Enter' button on your keyboard to finish

Deleting parts of the contents of a cell

If you only want to remove certain parts of the contents of a cell, then the steps are very similar to editing the text of a cell:

1. Double-click on the cell you want to edit

	A	B	C
1	Account Name		
2	Dundler-Mifflin		
3	McDonald's Incorporated		
4			
5			
6			
7			

2. Select the content you want removed

	A	B	C
1	Account Name		
2	Dundler-Mifflin		
3	McDonald's Incorporated		
4			
5			
6			
7			

3. Press the **Delete** button on your keyboard to remove the undesired content

	A	B	C
1	Account Name		
2	Dundler-Mifflin		
3	McDonald's		
4			
5			
6			
7			

4. Press the **Enter** button on your keyboard to complete

Selecting A Range of Cells, Columns & Rows

One thing you'll need to get used to as an Excel user is the habit of selecting ranges of cells and knowing how to select specific columns or rows. Knowing this skill will help when editing multiple cells at once.

How to Select a Range of Cells

To select a range of cells:

1. Click *and hold* the first cell within the range you want to select

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dunder-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

2. While holding, move your cursor to the last cell in your range

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dunder-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

3. Let go of your mouse

If you follow these steps correctly, you'll notice that the range you selected seems to be highlighted with a grayish color.

Deleting the contents of multiple cells

Previously you learned how to delete the content of once cell. However, there are also ways in which you can delete the contents of multiple cells. Here are the exact steps to do this:

1. Click *and hold* the first cell that contains the content you want to delete

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

2. While still holding, move your cursor to the last cell in your range you want removed

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

3. Let go of your mouse
4. Press the **Delete** button on your keyboard to remove the contents of each cell selected

	A	B	C
1			
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

If you follow these steps correctly, you'll see that the contents of every cell you highlighted have been deleted.

How to Select A Column

Besides selecting multiple cells, there will be times in which you'll need to know how to select an entire column. Here are the steps to select a specific column.

1. Put your cursor over the column you want to select until you see a black arrow pointing down. Make sure it is over the column's "letter"

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

2. Click once to select all cells within the selected column

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

If you followed the steps correctly, every single cell within the column you selected should be selected.

How to Select Multiple Columns

Previously, you learned how to select one column. In this section you'll learn how to select more than one column. Here are the steps to select multiple columns:

1. Put your cursor over the column you want to select until you see a black arrow pointing down. Make sure it is over the column's "letter"

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

2. Click once to select all cells within the selected column *and hold*

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

- While holding, move your cursor to the last column you want to select

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

- Let go of your mouse

If you followed the steps correctly, every columns' cells you chose would be selected.

How to Select A Row

Besides selecting multiple cells, there will be times in which you'll need to know how to select an entire row. Here are the steps to select a specific row.

- Put your cursor over the row you want to select until you see a black arrow pointing to the right. Make sure your cursor is over the row's number.

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

- Click once with your mouse

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

If you followed these steps correctly, all cells within the row you selected will also be selected.

How to Select Multiple Rows

Previously, you learned how to select one row. In this section you'll learn how to select more than one row. Here are the steps to select multiple rows:

1. Put your cursor over the first row you want to select until you see a black arrow pointing to the right. Make sure it is over the row's number.

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

2. Click once to select all cells within the selected row *and hold*

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

- While holding, move your cursor down to the last row you want to select

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4			
5			
6			
7			

- Let go of your mouse

If you followed the steps correctly, every rows' cells you chose will be selected.

Adjusting Columns & Rows

Sometimes, the content inside the cells may be too long for the entire content to be displayed. This happens because the cells may be too small. Excel gives users the ability to adjust the width of a column or the height of a column in order to display as much content as needed.

How to Adjust the Width of a Column

The width of a column is set to 8. This means that all columns are set to 8. When the content is too long, a size 8 column will need to be longer for the entire content to fit.

To adjust the width of a column:

- Place your cursor between the border of the column *letter* you want to adjust and the column next to it until you see a black cross with two arrows (one on the left and one on the right).

E	F	G
Average Sale	Account	Account Active?
3099	Howard &	YES
2010	Howard &	YES
921	The Getay	YES
167	Steele Pl	YES
1256	Steele Pl	YES
2344	Loma Lind	YES

- Click and hold with your mouse and move your cursor to the right, stopping with the width of your choice. You can also see the width's length increase.

Width: 11.00 (82 pixels)

E	F	G
Average Sale	Account Name	Account Active?
3099	Howard & Son	YES
2010	Howard & Son	YES
921	The Getaway	YES
167	Steele Plumbing	YES
1256	Steele Plumbing	YES
2344	Loma Linda U	YES

- Let go of your mouse and your column's width is now adjusted.

E	F	G
Average Sale	Account Name	Account Active?
3099	Howard & Son Inc.	YES
2010	Howard & Son Inc.	YES
921	The Getaway Franchise	YES
167	Steele Plumbing Inc.	YES
1256	Steele Plumbing Inc.	YES
2344	Loma Linda Unified School District	YES

How to Adjust the Height of a Row

The height of a row is set to 14.25. This means that all rows are set to 14.25. When the content is too tall, a size 14.25 column will need to be bigger for the entire content to fit.

To adjust the height of a row:

- Place your cursor between the bottom border of the row *number* you want to adjust and the border below it until you see a black cross with two arrows (one on top and one at the bottom).

	A	B
1	Customer Last	Customer First Name
2	Dominguez	Barbara
3	Anthony	Rob
4	Williams	Debon
5	Hernandez	Harold
6	Ochoa	Jose
7	Houston	Steven
8	Stevenson	Raymond

- Click and hold with your mouse and move your cursor down until the row's edge is the height of your choice. You can also see the row's height increase.

	A	B
1	Customer Last	Customer First Name
2	Dominguez	Barbara
3	Anthony	Rob
4	Williams	Debon
5	Hernandez	Harold
6	Ochoa	Jose
7	Houston	Steven
8	Stevenson	Raymond

- Let go of your mouse and the row's height will now be adjusted.

	A	B
1	Customer Last	Customer First Name
2	Dominguez	Barbara
3	Anthony	Rob
4	Williams	Debon
5	Hernandez	Harold
6	Ochoa	Jose
7	Houston	Steven
8	Stevenson	Raymond

How to Adjust the Width of Multiple Columns

Currently, you learned how to adjust the width of a single column. In this section, you'll learn how to adjust the width for multiple columns, not just one.

To adjust the width of multiple columns:

- Select the columns whose width you want adjusted

	A	B	C	D
1	Customer Last Name	Customer	Date of Ca	Account
2	Dominguez	Barbar	3-Jan	46941
3	Anthony	Rob	1-Feb	42897
4	Williams	Debor	2-Feb	19751
5	Hernandez	Harold	5-Feb	87321
6	Ochoa	Jose	5-Mar	25829
7	Houston	Stever	#####	29520

- Place your cursor between the border of the column *letter* you selected that is farthest to the right and between the column next to it until you see a black cross with two arrows (one on the left and one on the right).

	A	B	C	D	E
1	Customer Last Name	Customer	Date of Ca	Account	Average Sale
2	Dominguez	Barbar	3-Jan	46941	3099
3	Anthony	Rob	1-Feb	42897	2010
4	Williams	Debor	2-Feb	19751	921
5	Hernandez	Harold	5-Feb	87321	167
6	Ochoa	Jose	5-Mar	25829	1256
7	Houston	Stever	#####	29520	2344

- Click and hold with your mouse and move your cursor to the right, until the column's edge is the width of your choice. You can also see the width's length increase.

B1

⌵

⋮

✕

✓

f_x

Customer First Name

Width: 10.14 (76 pixels)

	A	B	C	D	E
1	Customer Last Name	Customer	Date of Ca	Account I	Average Sale
2	Dominguez	Barbara	3-Jan	46941	3099
3	Anthony	Rob	1-Feb	42897	2010
4	Williams	Debon	2-Feb	19751	921
5	Hernandez	Harold	5-Feb	87321	167
6	Ochoa	Jose	5-Mar	25829	1256
7	Houston	Steven	29-Apr	29520	2344

- Let go of your mouse and the width of all columns that you selected will be adjusted according to the width you selected.

	A	B	C	D
1	Customer Last Name	Customer First Name	Date of Cancellation	Account ID
2	Dominguez	Barbara	3-Jan	46941
3	Anthony	Rob	1-Feb	42897
4	Williams	Debon	2-Feb	19751
5	Hernandez	Harold	5-Feb	87321
6	Ochoa	Jose	5-Mar	25829
7	Houston	Steven	29-Apr	29520

How to Adjust the Width of Multiple Rows

In this section, you'll learn how to adjust the height of multiple rows, not just one.

To adjust the height of multiple rows:

1. Select the rows whose height you want to adjust

	A	B	C
1	Contact Person	Social Security Number	Account Number
2	Dominguez, Barbara	904-58-5448	161778
3	Dominguez, Barbara	904-58-5448	161778
4	Anthony, Rob	655-84-6444	788491
5	Williams, Debon	378-29-3448	367918
6	Williams, Debon	378-29-3448	367918
7	Hernandez, Harold	176-32-4664	289512

2. Place your cursor between the bottom border of the row *number* within your selection and the row *number* below it until you see a black cross with two arrows (one on the top and one on the bottom).

	A	B	C
1	Contact Person	Social Security Number	Account Number
2	Dominguez, Barbara	904-58-5448	161778
3	Dominguez, Barbara	904-58-5448	161778
4	Anthony, Rob	655-84-6444	788491
5	Williams, Debon	378-29-3448	367918
6	Williams, Debon	378-29-3448	367918
7	Hernandez, Harold	176-32-4664	289512
8	Ochoa, Jose	853-82-7337	225340
9	Houston, Steven	469-18-1748	686881

- 1.

- Click and hold with your mouse and move your cursor down, until the row's edge is the height of your choice. You can also see the row's height increase.

	A	B	C
1	Contact Person	Social Security Number	Account Number
2	Dominguez, Barbara	904-58-5448	161778
3	Dominguez, Barbara	904-58-5448	161778
4	Anthony, Rob	655-84-6444	788491
5	Williams, Debon	378-29-3448	367918
6	Williams, Debon	378-29-3448	367918
7	Hernandez, Harold	176-32-4664	289512
8	Ochoa, Jose	853-82-7337	225340
9	Houston, Steven	460-18-1749	686881

- Let go of your mouse and the height of all selected rows will be adjusted according to the height you selected.

	A	B	C
1	Contact Person	Social Security Number	Account Number
2	Dominguez, Barbara	904-58-5448	161778
3	Dominguez, Barbara	904-58-5448	161778
4	Anthony, Rob	655-84-6444	788491
5	Williams, Debon	378-29-3448	367918
6	Williams, Debon	378-29-3448	367918
7	Hernandez, Harold	176-32-4664	289512
8	Ochoa, Jose	853-82-7337	225340
9	Houston, Steven	460-18-1749	686881

How to AutoFit Row Height & Column Width

Excel has an Autofit option that will adjust the height or width automatically. This option will not have a set height or width, but instead will make the cell big enough for the text to fit perfectly inside your cell, each column or row with the perfect width and height needed, respectively.

This method will work for adjusting the width of a column or the height of a row. Let's use one example.

To use the autofit to adjust the width of a column:

1. Select the column(s) whose width you want adjusted

	A	B	C	D
1	Customer Last Name	Custor	Date o	Accou
2	Dominguez	Barbar	3-Jan	46941
3	Anthony	Rob	1-Feb	42897
4	Williams	Debor	2-Feb	19751
5	Hernandez	Harold	5-Feb	87321
6	Ochoa	Jose	5-Mar	25829
7	Houston	Stever	#####	29520

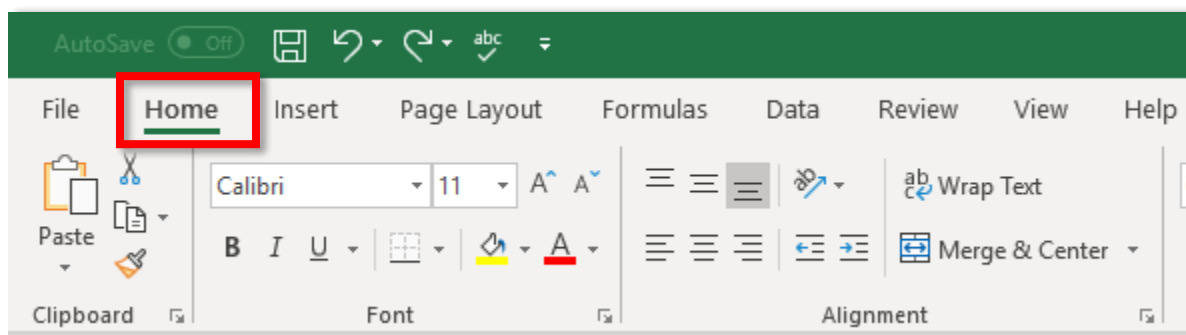
2. Place your cursor between the border of the column *letter* you selected that is farthest to the right and between the column next to it until you see a black cross with two arrows (one on the left and one on the right).

	A	B	C	D	E
1	Customer Last Name	Custor	Date o	Accou	Average Sale
2	Dominguez	Barbar	3-Jan	46941	3099
3	Anthony	Rob	1-Feb	42897	2010
4	Williams	Debor	2-Feb	19751	921
5	Hernandez	Harold	5-Feb	87321	167
6	Ochoa	Jose	5-Mar	25829	1256
7	Houston	Stever	#####	29520	2344

3. Double-click with your mouse. After double-clicking, each column that you selected should adjust specific to the content the column contains.

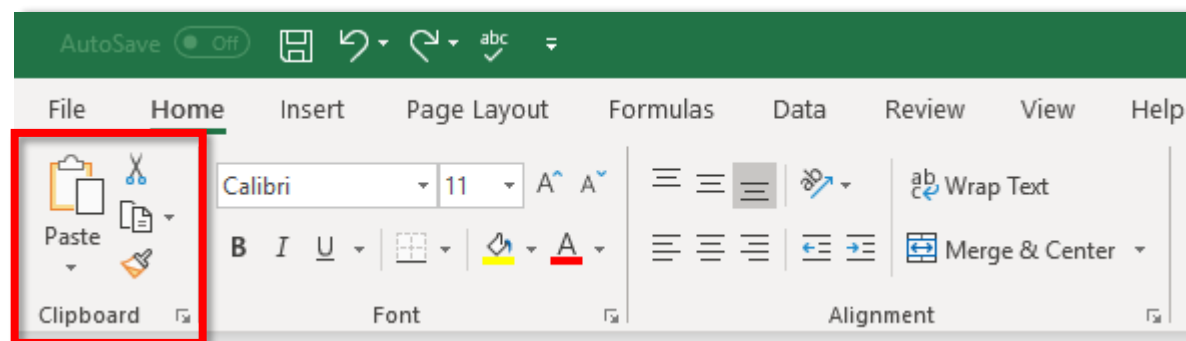
Navigating the Home tab

The **Home** tab will be the most commonly used page for an Excel beginner. This booklet will not cover *all* commands (or buttons) found on the **Home** tab but will cover the functionalities that a beginning Excel user would use.



The Clipboard Group

The **Clipboard** group of the **Home** tab is typically on the left side of the ribbon. The **Clipboard** group allows users to use the cut, copy and paste commands as well as the Format Painter. Typically, the **Clipboard** group is accessed to view content that has been copied or cut.



Using the Cut & Paste Commands

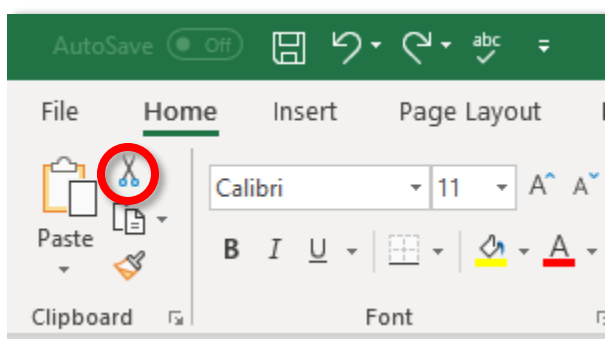
The **Cut** command is usually represented by an icon of a scissor. You can cut cells, tables, text, formulas, rows and columns in Excel by using the **Cut** command. However, you *cannot* use the **Cut** command by itself. The **Cut** command should always be followed by another command (typically the **Paste** command which is also located in the **Clipboard** group).

To use the **Cut** & **Paste** commands to *move* cells from one area to another:

1. Select the cells you want to move

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4	Burger King		
5	Disneyland		
6			
7			

2. From the **Clipboard** group, select the **Cut** command



3. Once the **Cut** command is selected, the area that you *cut* should show with animated dashes

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4	Burger King		
5	Disneyland		
6			
7			

4. Click on the area where you want to place the *cut* content

	A	B	C	D
1	Account Name	Sales Amount	Sales Date	
2	Dundler-Mifflin	29000	19-Feb	
3	McDonald's			
4	Burger King			
5	Disneyland			
6				
7				

5. Select the **Paste** command from the **Clipboard** group



6. Your content will now exist in the area selected, replacing any preexisting content with what you pasted.

	A	B	C	D	E
1		Sales Amount	Sales Date	Account Name	
2		29000	19-Feb	Dundler-Mifflin	
3				McDonald's	
4				Burger King	
5				Disneyland	
6					
7					

Using the Copy & Paste Option

Unlike the **Cut** command, the **Copy** command *duplicates* content, formulas or cells. Like the **Cut** command, the **Copy** command cannot be used on its own. The **Copy** command is typically identified by the icon in the Clipboard group with two identical pages. The **Copy** command must be followed by another command (typically the **Paste** command).

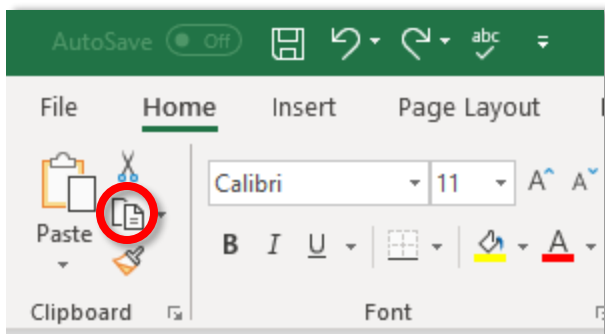
To use the **Cut & Paste** commands to *move* cells from one area to another:

1. Select the cells you want to *duplicate*



	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4	Burger King		
5	Disneyland		
6			
7			

2. From the **Clipboard** group, select the **Copy** command



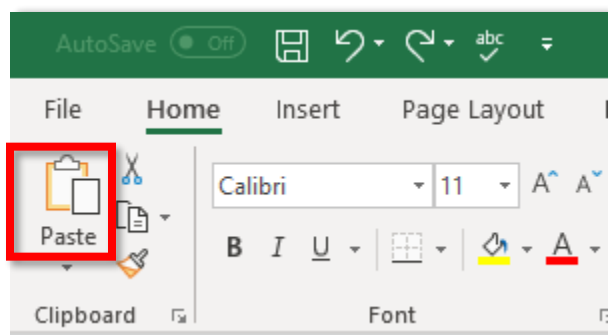
- Once the **Copy** command is selected, the area that you *copied* should show with animated dashes

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's		
4	Burger King		
5	Disneyland		
6			
7			

- Click on the area where you want to *duplicate* the copied content

	A	B	C	D
1	Account Name	Sales Amount	Sales Date	
2	Dundler-Mifflin	29000	19-Feb	
3	McDonald's			
4	Burger King			
5	Disneyland			
6				
7				

- Select the **Paste** command from the **Clipboard** group



- Your content will now exist in two places: the area where you originally copied and the area where you pasted the content. Pasting any content will always replace any preexisting content with what you pasted.

	A	B	C	D	E
1	Account Name	Sales Amount	Sales Date	Account Name	
2	Dundler-Mifflin	29000	19-Feb	Dundler-Mifflin	
3	McDonald's			McDonald's	
4	Burger King			Burger King	
5	Disneyland			Disneyland	
6					
7					

The Format Painter

As an intermediate Excel user, you should know how to use the **Format Painter**. This is a very useful tool to ensure that your tables have consistent formatting. In this section, you'll learn how to use the **Format Painter** and how to *lock* the **Format Painter** as well.

How to Use the Format Painter

The **Format Painter** is a useful tool located in the **Clipboard group** of the **Home** tab ribbon. The **Format Painter** is typically recognized by an icon of a paint brush. The **Format Painter** allows you to replicate the style, fonts, borders (aka cell's format) without replacing or overriding any of the values or contents from one cell to another. The **Format Painter** allows users to have a consistent looking spreadsheet.

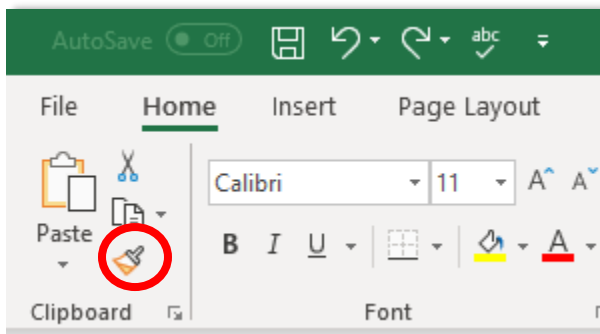
	A	B	C		A	B	C	
1	Account Name	Sales Amount	Sales Date		1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb		2	Dundler-Mifflin	29000	2/19/2019
3	McDonald's	32000	19-Jan		3	McDonald's	32000	1/19/2019
4	Burger King	44000	4-Mar		4	Burger King	44000	3/4/2019
5	Disneyland	22000	1-May		5	Disneyland	22000	5/1/2019

To use the **Format Painter**:

2. Select the range that includes the formatting you want to apply to the rest of the table

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's	32000	19-Jan
4	Burger King	44000	4-Mar
5	Disneyland	22000	1-May
6			
7			

3. After selecting the range, select the **Format Painter** command, located in the **Clipboard** group



4. After the **Format Painter** is selected, your selected range will have animated dashes around the content

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's	32000	19-Jan
4	Burger King	44000	4-Mar
5	Disneyland	22000	1-May
6			
7			

5. Select the range where you want to apply the formatting and let go of your mouse after you're done

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	43515
3	McDonald's	32000	43484
4	Burger King	44000	43528
5	Disneyland	22000	43586
6			
7			

The **Format Painter** allows you to copy background colors, number formats, font colors font types and font alignments. You'll know that you successfully used the **Format Painter** because you applied it correctly to the selected range.

How to Lock the Format Painter

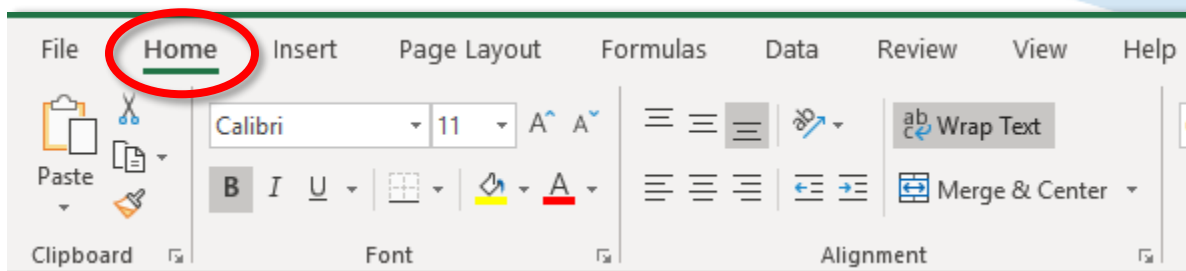
If you can successfully use the **Format Painter**, you know that once you "brush" the formatting to your desired location, the paint brush icon in your cursor disappears. This means that if you want to use the **Format Painter** for a big table, you would have to keep selecting the exemplary formatting and do the steps repeatedly. There is a shortcut that allows you to *lock* the **Format Painter** so that you don't have to do the steps repeatedly.

To lock the **Format Painter**:

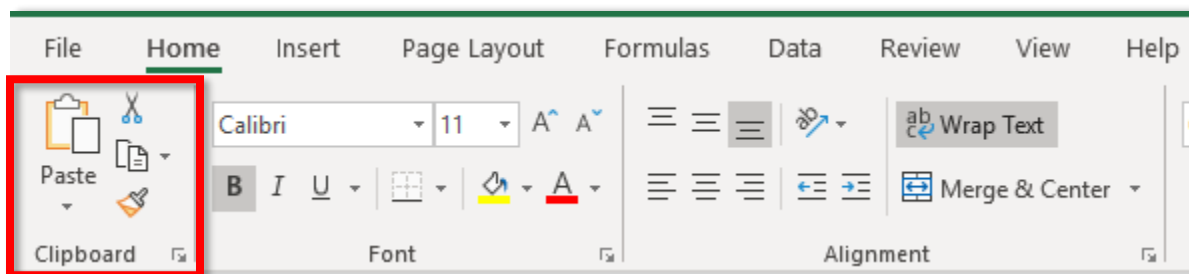
1. Select the range that includes the formatting you want to apply to the rest of the table.

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's	32000	19-Jan
4	Burger King	44000	4-Mar
5	Disneyland	22000	1-May
6			
7			

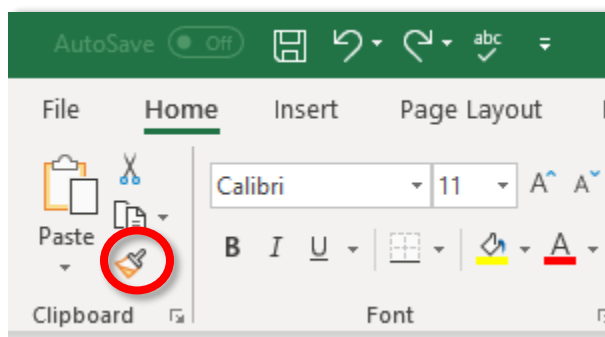
2. Navigate to the **Home** tab.



3. Locate the **Clipboard** group.



4. Double-click on the **Format Painter** command.



5. After the **Format Painter** is selected, your selected range will have animated dashes around the content

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	19-Feb
3	McDonald's	32000	19-Jan
4	Burger King	44000	4-Mar
5	Disneyland	22000	1-May
6			
7			

6. Select the area where you want to apply the formatting and let go of your mouse after you're done

	A	B	C
1	Account Name	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	43515
3	McDonald's	32000	43484
4	Burger King	44000	43528
5	Disneyland	22000	43586
6			
7			

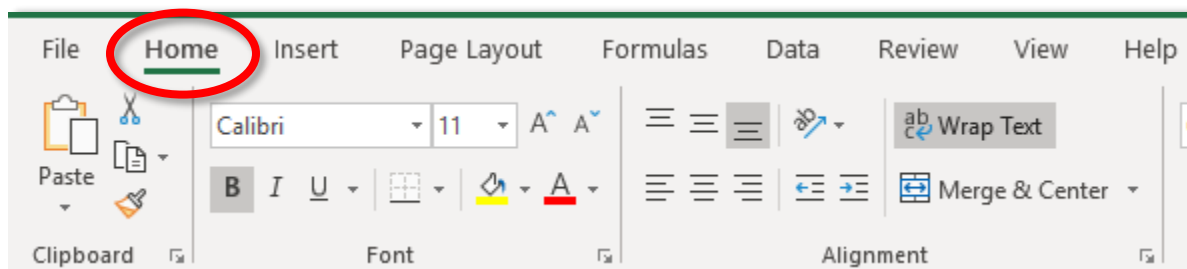
Note that when you lock the **Format Painter** the **Format Painter** command is permanently selected. This means, that the formatting you selected will apply to any cell that you click on. To stop using the **Format Painter** you will have to unlock it, which will be covered in the next section.

How to Unlock the Format Painter

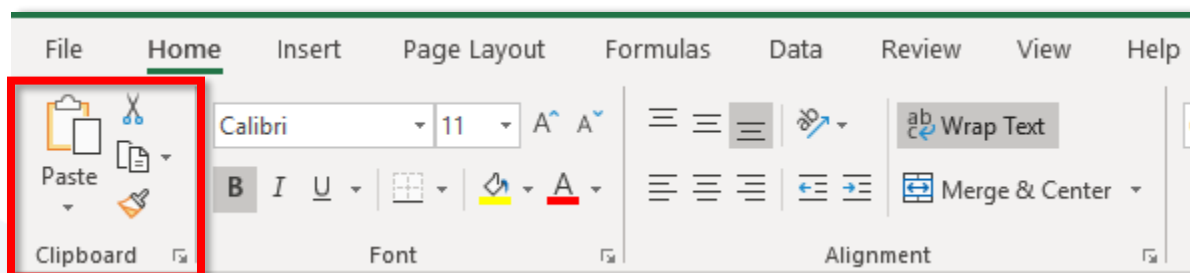
Be careful when locking the **Format Painter** because the formatting will apply to any area, or cell, that you click on. To stop using the locked **Format Painter** you will need to unlock it.

To unlock the **Format Painter**:

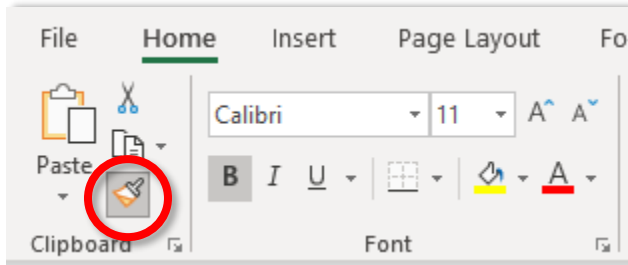
1. Navigate to the **Home** tab.



2. Locate the **Clipboard** group.



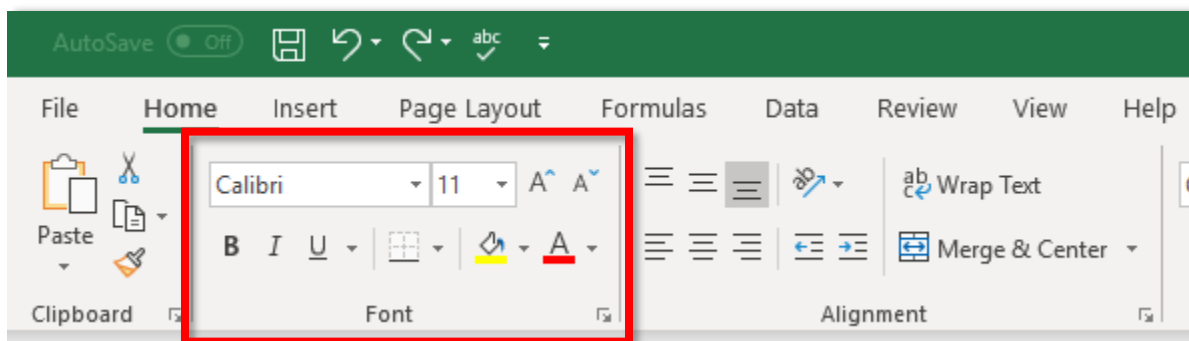
- Click on the locked **Format Painter** command.



If you followed these steps correctly, you would have *unselected* the **Format Painter** command and your cursor will no longer have a paint brush icon.

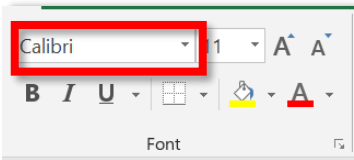
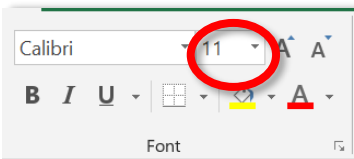
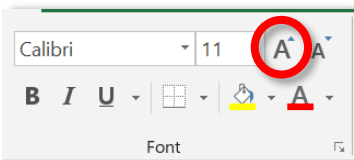
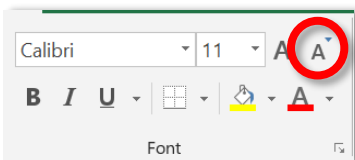
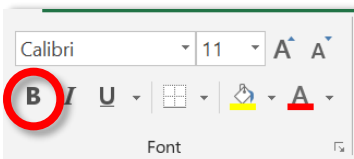
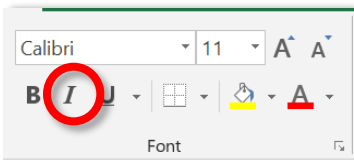
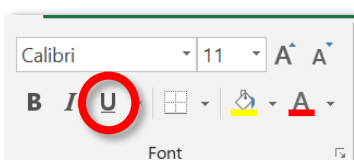
The Font Group

The **Font group** of the **Home** Tab ribbon will look familiar to you. This is because the design of this section is commonly used throughout programs, emails and software. The **Font group** allows you to change the font of your text, change the size of the text, bold, underline, and change the color of the font among other things.



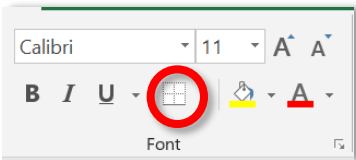
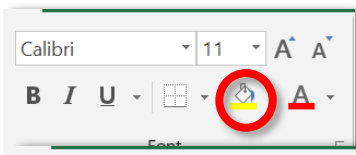
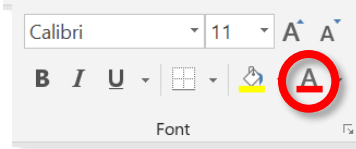
Changing the Font Style

You can change the font color, size and style in Excel, just like writing an email. The following is a quick guide that will help you understand the commands that allow you to change the font style of your text.

Excel Function Name	Location	Description
Font Type		Allows you to change the font type of your text
Font size		Allows you to change the size of your text
Increase font size		Makes the size of your font a bit bigger
Decrease font size		Makes the size of your font a bit smaller
Bold		Makes your text darker (bold)
<i>Italic</i>		Italicize your text
<u>Underline</u>		Will add a line below your text (underline)

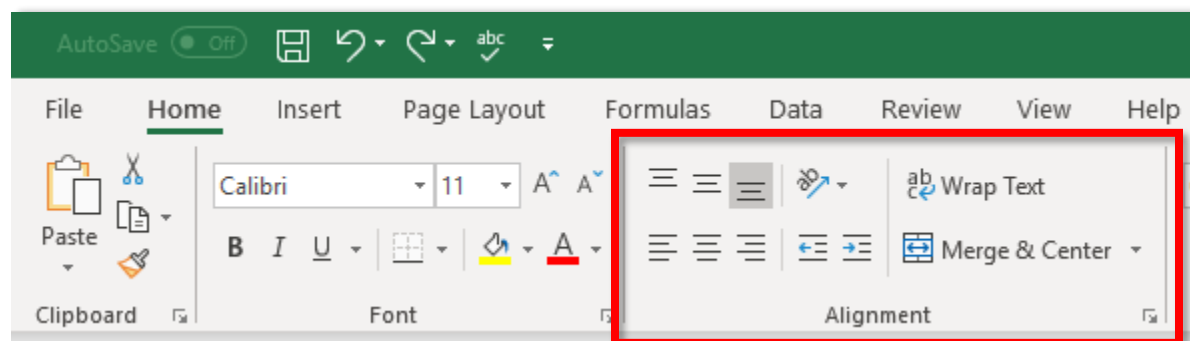
Borders & Colors

You can also change the formatting of your cells to make your font stand out. The table below describes three popular commands from the **Font** group.

Excel Function Name	Location	Description
Borders		Allows you to add borders (i.e. top, bottom, double) to your cell
Fill Color		Allows you to color the background of cells to make them stand out
Font Color		Allows you to change the color of your text (which defaults to black)

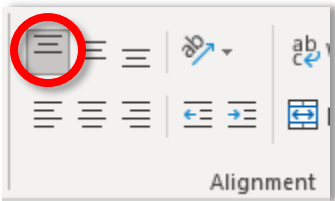
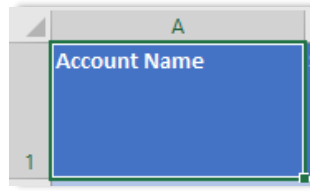
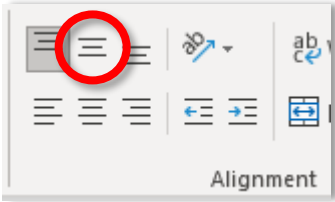
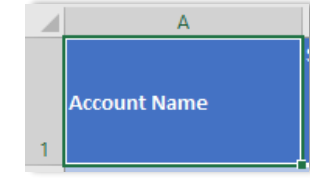
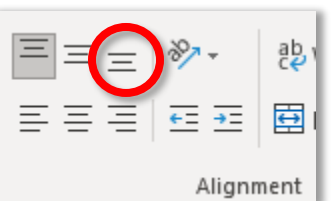
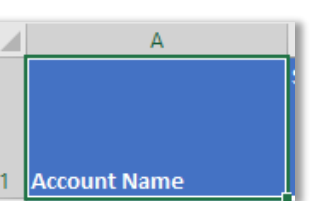
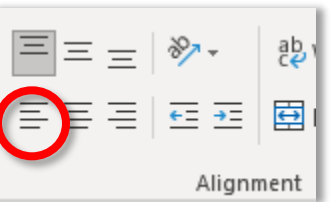
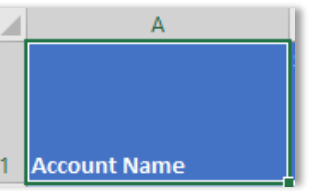
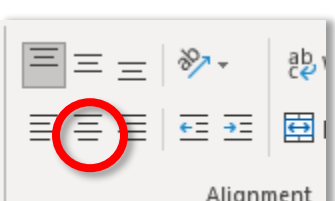
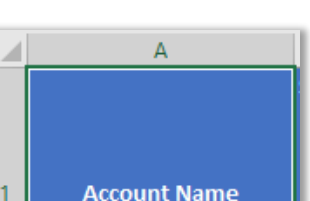
The Alignment Group

Use the Alignment group to align the text displayed in your cells. Aligning your cells will help your table look more professional and may also help you fit the content into fewer cells to print.

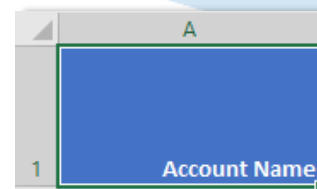
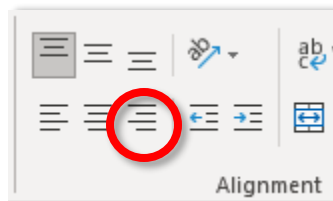


Text Alignment

The **Alignment group** of Excel begins with two rows with three commands in each row. These commands are commonly used to align the text within cells. In the table below, you will find the command name, the command location and an example of the command when used.

Alignment Command Name	Location	Example
Top Align		
Middle Align		
Bottom Align		
Align Left		
Align Center		

Align Right



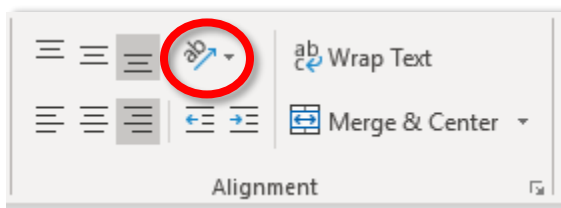
Text Orientation

By default, your text will display from left to right of a cell, but you can change the orientation of your text to go up and down and to go sideways as well. When clicking on the **Orientation** button, you will be prompted with a drop-down menu that will (1) help you visualize the orientation of your text and (2) allow you to select the orientation of your choice.

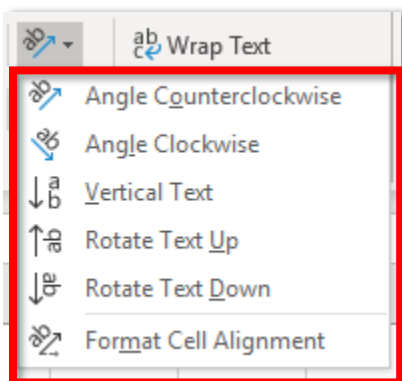
Text orientation is typically used for desired styling. You will most likely not encounter too many tables that use a different kind of text orientation in this booklet or in any of the exercises provided.

To use the Text **Orientation** command:

1. Select the text you want changed
2. Click on the **Orientation** command located in the **Alignment** group of the ribbon



3. The **Orientation** command will display a menu of options. Select the orientation of your choice to modify your text.



Indentation

If you recall from grammar school, you always use an indentation when starting a new paragraph. Technically, this feature is also available in Excel. **Indentation** is not commonly used in Excel unless you're using this feature to demonstrate a sub category of some sort. Let's explore how to use this feature on a spreadsheet.

How to Increase Indentation

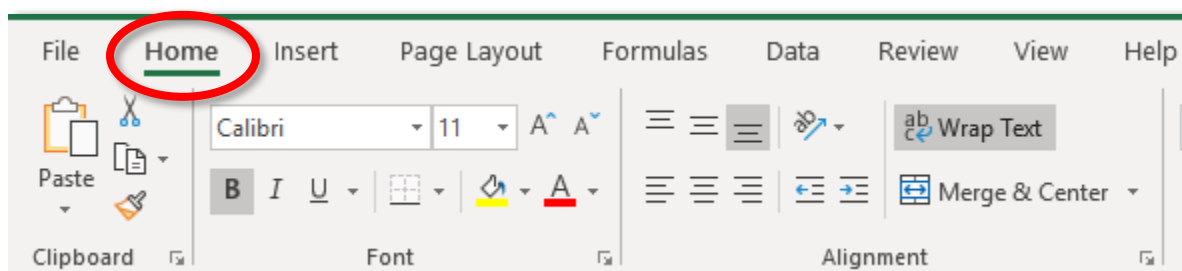
By default, the text in your cells are aligned to the left. You can change the alignment, but you can also use indentation to add space to the left of the text. This is commonly done in Excel to show a sub category.

To increase the indentation of a cell:

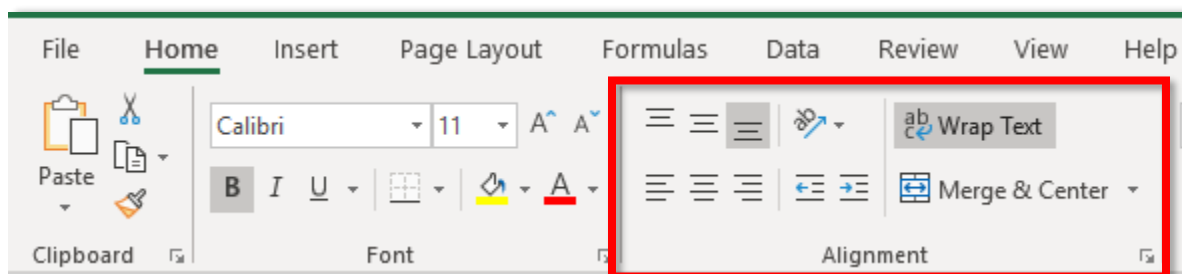
1. Select the cell(s) that you want to add indentation.

	A	B
1	Account Name	Potential Revenue
2	THE DAILY BREAD CRUMBS LLC	\$297,083.00
3	Revenue from new business	\$59,416.60
4	Revenue from renewals	\$237,666.40

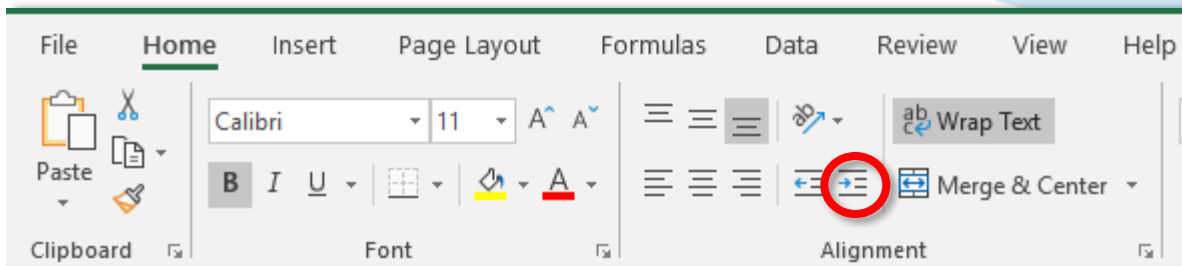
2. Navigate to the **Home** tab.



3. Locate the **Alignment** group.



4. Select the **Increase Indent** command.



If you successfully followed these steps, you would see the indentation in your cell(s).

	A	B
1	Account Name	Potential Revenue
2	THE DAILY BREAD CRUMBS LLC	\$297,083.00
3	Revenue from new business	\$59,416.60
4	Revenue from renewals	\$237,666.40

How to Decrease Indentation

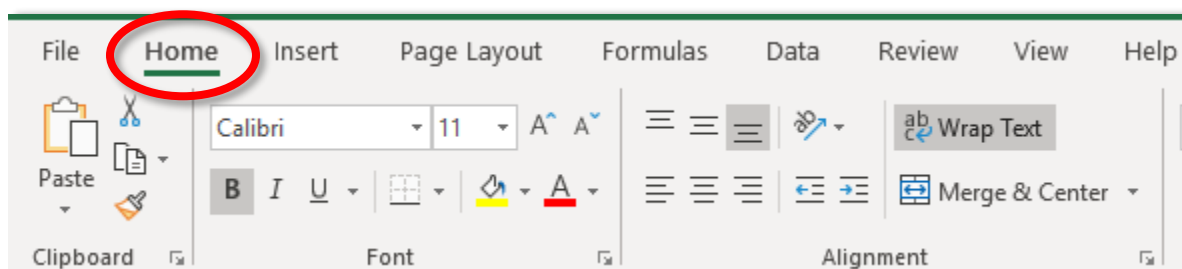
In Excel, you can also decrease or remove the indentation in your cells.

To decrease the indentation:

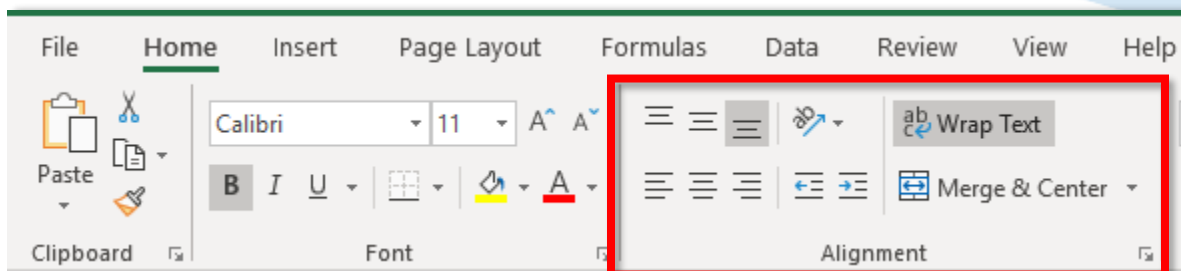
1. Select the cell(s) that you want to decrease or remove the indentation.

	A	B
1	Account Name	Potential Revenue
2	THE DAILY BREAD CRUMBS LLC	\$297,083.00
3	Revenue from new business	\$59,416.60
4	Revenue from renewals	\$237,666.40

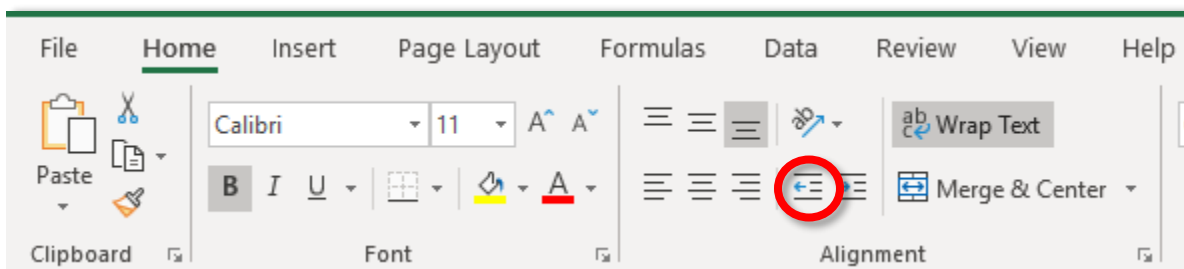
2. Navigate to the **Home** tab.



3. Locate the **Alignment** group.



4. Select the **Decrease Indent** command.



Wrap Text

Sometimes you have a width of a cell you want to keep, but the content inside of that cell is too long that not all the information is displayed. This is where the **Wrap Text** command is useful. **Wrap Text** is a button that allows you to 'wrap' your text around the cell so that the text may fit. Below is an example of how **Wrap Text** can be used. Notice that the width of the three columns remains the same

J	K	L
Full Name	Security Number	Phone Number

→

J	K	L
Full Name	Social Security Number	Phone Number

Merge & Center

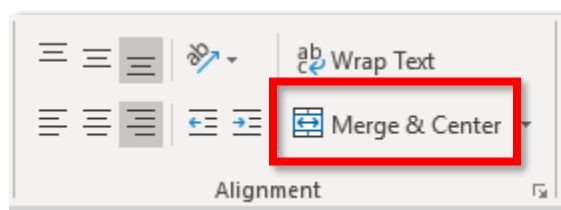
Excel allows you to merge two cells into one cell. This is a great option when working with tables to combine any extra space. Be careful when using the Merge & Center button to merge two cells *with* content. When merging to cells with content in each cell, Excel will keep the content of the first cell (the farthest from the left or the top) and remove the content from the rest of the cells.

To use the **Merge & Center** command:

1. Select the two cells you want to merge.

	A	B	C
			Sales Amount
1	Account Name And Code		
2	Dundler-Mifflin	4534534	29000
3	McDonald's	3453453	32000
4	Burger King	1345345	44000
5	Disneyland	5634633	22000
6			
7			

2. Click on the **Merge & Center** command.

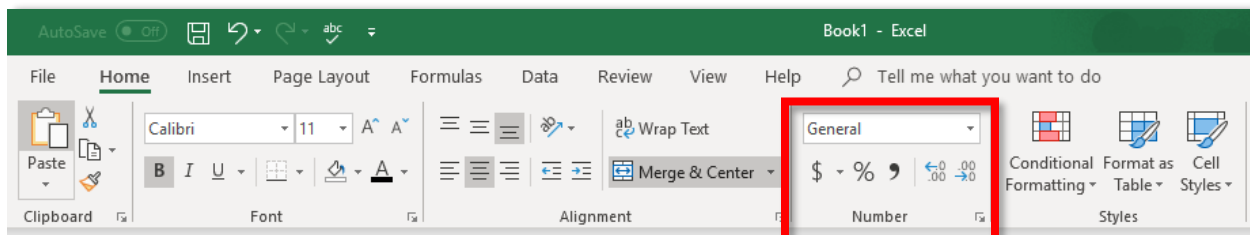


3. If you selected two cells (or more) to merge with content, Excel will prompt a warning that merging the cells will remove the content of some of your cells. If you are merging two cells (or more) in which only the content you want to keep is available, then you will see that the command was implemented successfully.

	A	B	C
			Sales Amount
1	Account Name And Code		
2	Dundler-Mifflin	4534534	29000
3	McDonald's	3453453	32000
4	Burger King	1345345	44000
5	Disneyland	5634633	22000
6			
7			

The Number Group

The **Number group** of the **Home** tab's ribbon allows you to change the text format of the numbers you use in your spreadsheets. Since Excel is typically used for number crunching, calculations and data storage, it is common for spreadsheets to be filled with numbers. Use the **Number group** according to the type of numbers you want displayed.



Entering numbers in a cell

Excel is obviously used for capturing information, especially data that contains numbers. To enter numbers in cells, type in the data as described in previous sections of this booklet:

1. Click once on any cell
2. Type your data
3. Press the 'Enter' button on your keyboard

	A	B
1	Account Name	Sales Amounts
2	Dunder-Mifflin	29000
3		

Any time you enter data into cells, it is automatically (and typically) formatted to a **General** format.

Choosing Number Formats from Commands Displayed in the Ribbon

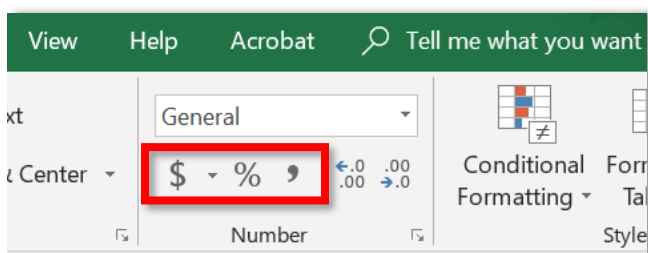
By default, Excel makes every number a **General** format instead of numbers with dollar signs or commas (to dictate thousands, for example). Therefore, if you type the number 200 inside a cell, you will only see a 200 displayed. You can convert the 200 into \$200 or \$200.00 instead. You can also use other number formats such as dates, time and percentages.

To quickly change the number format, you can select the formats readily available in the **Numbers** group:

1. Select the numbers in your spreadsheets you want to format.

	A	B	C
1	Account Name And Code	Sales Amount	Sales Date
2	Dundler-Mifflin	29000	2/19/2019
3	McDonald's	32000	1/19/2019
4	Burger King	44000	3/4/2019
5	Disneyland	22000	5/1/2019
6			
7			

2. From the **Numbers** group, select the commands readily available.



3. If you followed the steps correctly, you would see the format of your selected cells update.

	A	B	C
1	Account Name And Code	Sales Amount	Sales Date
2	Dundler-Mifflin	\$ 29,000.00	2/19/2019
3	McDonald's	\$ 32,000.00	1/19/2019
4	Burger King	\$ 44,000.00	3/4/2019
5	Disneyland	\$ 22,000.00	5/1/2019
6			
7			

Percentages

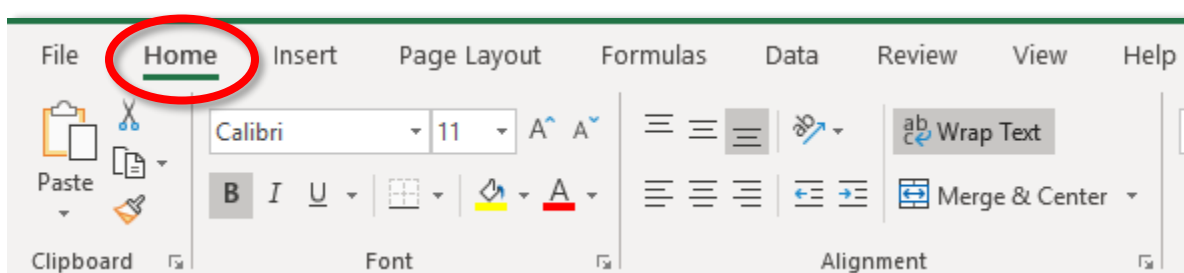
It is a common misconception that you must do a calculation in Excel in order to give you a percentage. There is also no "Percentage formula" in Excel. In fact, Excel makes it easy for us to use percentages. Typically, we would have decimals that we would like to convert into percentages.

To convert numbers into percentages:

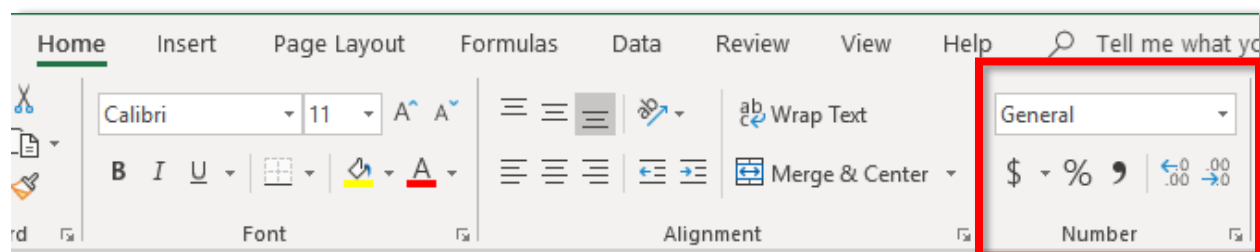
1. Select the cell(s) you want to convert to percentages.

1	Student ID	Score
2	472465	1
3	561453	0.84
4	855961	0.03
5	279264	0.97
6	258025	0.8
7	109715	0.26
8	175616	0.41
9	706847	0.2
10	193173	0.33

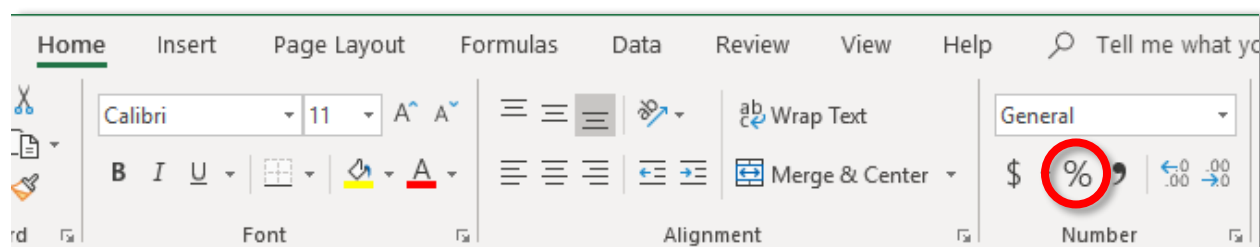
2. Navigate to the **Home** tab.



3. Locate the **Number** group



4. Select the **Percent** icon.



Foreign currency

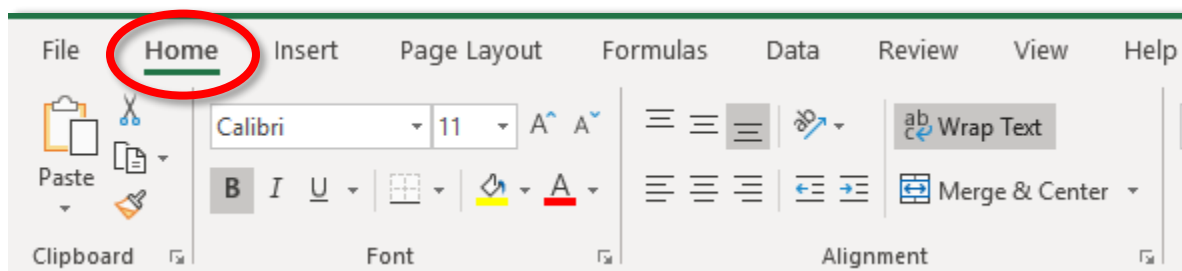
If you are working with other types of currency from around the world, Excel gives you a quick option to make changes to your number format.

To apply a foreign currency to your numbers:

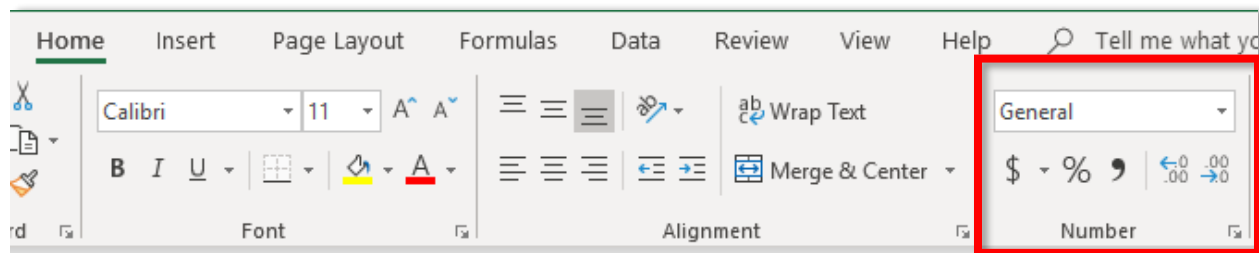
1. Select the cell or cells where you want to apply the **Foreign Currency** format.

	A	B
1	Account Name	Potential Revenue
2	THE DAILY BREAD CRUMBS LLC	\$297,083.00
3	ESPINOZA YARD LLC	\$295,231.00
4	NGUYEN INSTITUTE	\$294,923.00
5	DAN & CRADSTREED INC.	\$246,715.00
6	GRACE WARE LLC	\$224,816.00
7	STANFORD LAW INC.	\$213,352.00
8	DAVID&MIMIS INC	\$211,193.00
9	ROBERT SATIN, MD.	\$196,825.00
10	RAIN INSTITUTE OF THE ARTS	\$150,326.00

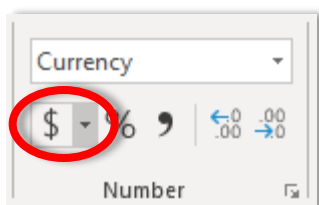
2. Navigate to the **Home** tab.



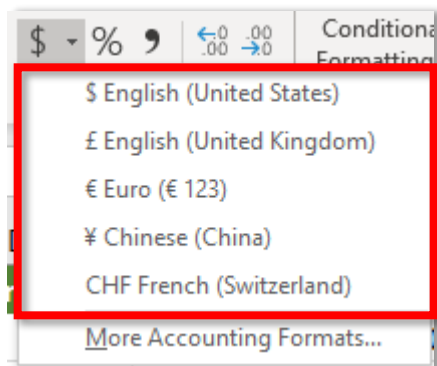
3. Locate the **Number** group



4. Select the drop-down menu from the dollar-sign icon.



5. Select the **Foreign Currency** of your choice from the drop-down menu.



How to Increase the Decimal Places of a Number

At times, you'll need to display your numbers with a precise number of decimals. Sometimes, you'll do a calculation on Excel and Excel will display a number with too many decimal places (for example 5.877777777). In Excel, you can decrease or increase the number of decimal places that Excel displays *and* have Excel automatically round to the decimal of your choice.

To increase the decimal places of a number:

1. Select the cell or cells from your spreadsheet.

	A	B	C	D
1	Customer Last Name	Customer First Name	Account ID	Average Sale
2	Dominguez	Barbara	46941	3098.5
3	Anthony	Rob	42897	2009.97
4	Williams	Debon	19751	921
5	Hernandez	Harold	87321	167.09
6	Ochoa	Jose	25829	1255.62
7	Houston	Steven	29520	2344.15

2. Select the **Increase Decimal** command from the **Number** group ribbon until you see the number of decimals you want displayed.

When used correctly, you'll see that the numbers that you selected will now have the number of decimals you wanted displayed.

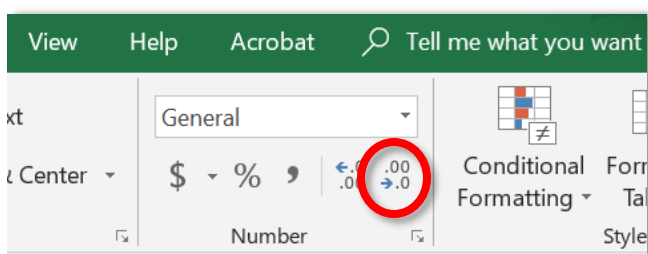
How to Decrease the Decimal Places of a Number

To decrease the decimal places of a number on your spreadsheet:

1. Select the cell or cells from your spreadsheet.

	A	B	C	D
1	Customer Last Name	Customer First Name	Account ID	Average Sale
2	Dominguez	Barbara	46941	3098.5
3	Anthony	Rob	42897	2009.97
4	Williams	Debon	19751	921
5	Hernandez	Harold	87321	167.09
6	Ochoa	Jose	25829	1255.62
7	Houston	Steven	29520	2344.15

2. Select the **Decrease Decimal** command from the **Number** group ribbon until you see the number of decimals you want displayed.



When used correctly, you'll see that the numbers that you selected will now have the number of decimals you wanted displayed.

	A	B	C	D
1	Customer Last Name	Customer First Name	Account ID	Average Sale
2	Dominguez	Barbara	46941	3099
3	Anthony	Rob	42897	2010
4	Williams	Debon	19751	921
5	Hernandez	Harold	87321	167
6	Ochoa	Jose	25829	1256
7	Houston	Steven	29520	2344

How to Enter Dates in a Cell

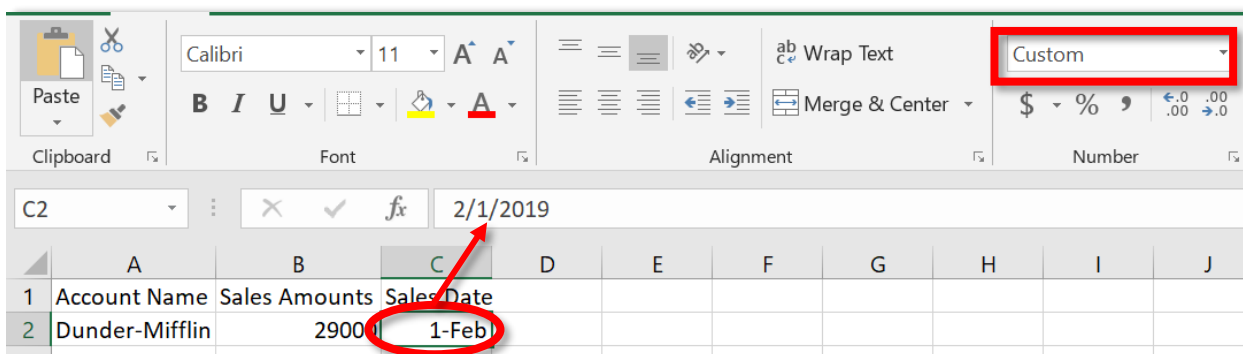
As previously mentioned, data is typically formatted as a 'General' number format, but there are instances in which Excel can recognize the data you submit. For example, when you enter a date in Excel, Excel will recognize that you entered a date and will convert it into a 'Custom' number format.

To enter a date in Excel:

1. Click on a cell
2. Type the date in the format M/D (i.e. 2/1)
3. Press the **Enter** button on your keyboard

After entering the date, you'll notice three things:

1. Your number/date is now in a number format called 'Custom'.
2. The cell will display the 'Custom' format, while the formula bar will display the entire date (including the year, although you may not have typed the year).
3. If you did not type the year into the cell, Excel will assume your date is for the current year.

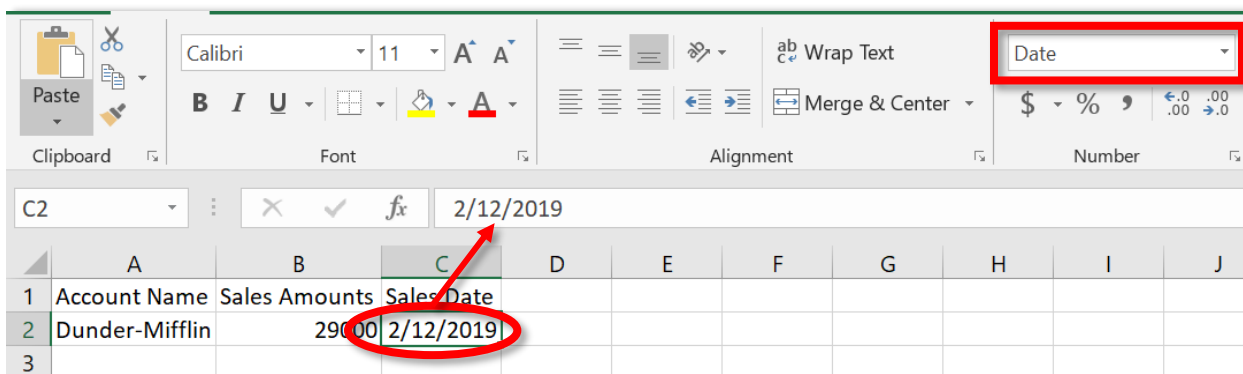


How to Enter A Date as A 'Date' Format

If you type in the entire date (year included), then Excel will recognize your data as a date and will change your entry into a Date Format. To enter a date in Excel in a Date Format:

1. Type the date in the format M/D/Y (i.e. 2/12/19)
2. Press the **Enter** button on your keyboard

3. Your date should now display on both the cell and the formula bar in the number format called 'Date'



How to Quickly Customize Your 'Date' Format

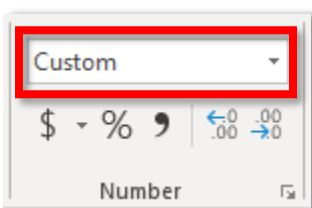
Excel gives you the option to quickly convert your dates into a 'Short Date' format (such as 2/1/2019) or a 'Long Date' format (such as Friday, February 1, 2019).

To quickly customize your 'Date' format in Excel:

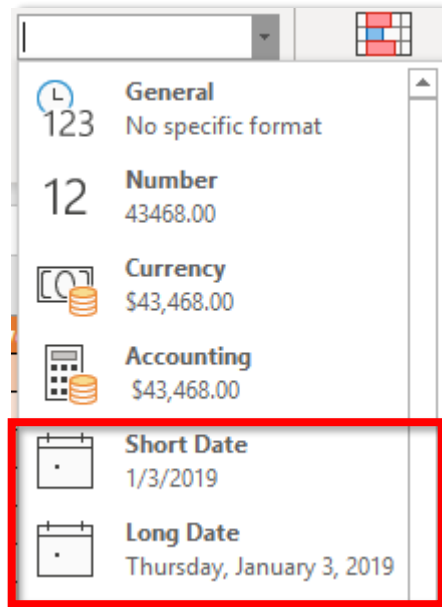
1. Select the cells with dates

	A	B	C
1	Customer Last Name	Customer First Name	Date of Cancellation
2	Dominguez	Barbara	3-Jan
3	Anthony	Rob	1-Feb
4	Williams	Debon	2-Feb
5	Hernandez	Harold	5-Feb
6	Ochoa	Jose	5-Mar
7	Houston	Steven	29-Apr

2. Click on the **Number Format** drop-down menu located in the **Number** group.



- From the drop-down menu, select any of the two readily-available date formats.



More Number Formats

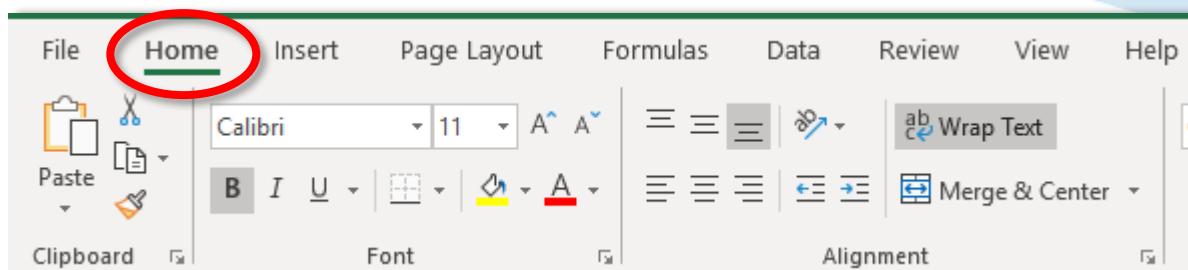
If you're looking to customize the number format of your text or are looking for a style that is not listed as a command or on a dropdown menu, then you can select the **More Number Formats** option at the bottom of the dropdown menu.

To select other number formats:

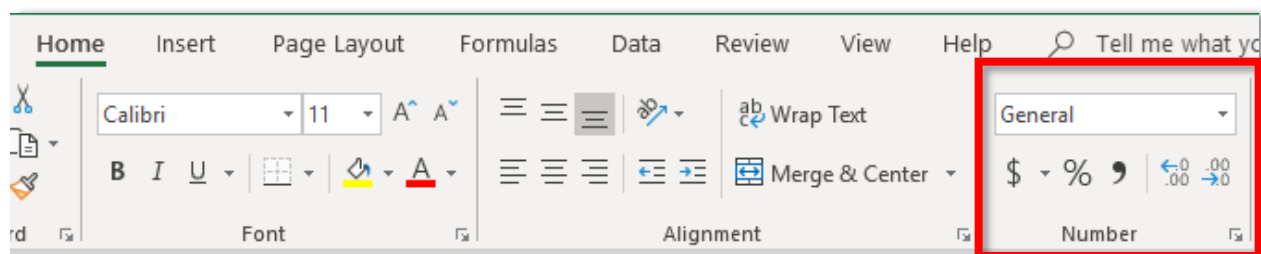
- Select the cell or cells where you want to apply other types of number formats.

	A	B
1	Account Name	Potential Revenue
2	THE DAILY BREAD CRUMBS LLC	\$297,083.00
3	ESPINOZA YARD LLC	\$295,231.00
4	NGUYEN INSTITUTE	\$294,923.00
5	DAN & CRADSTREED INC.	\$246,715.00
6	GRACE WARE LLC	\$224,816.00
7	STANFORD LAW INC.	\$213,352.00
8	DAVID&MIMIS INC	\$211,193.00
9	ROBERT SATIN, MD.	\$196,825.00
10	RAIN INSTITUTE OF THE ARTS	\$150,326.00

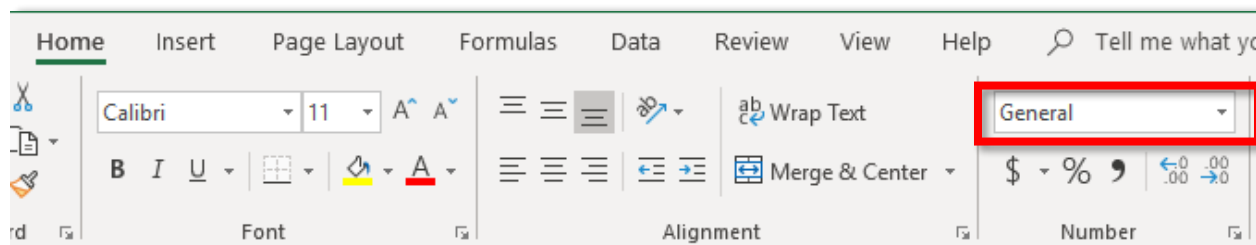
- Navigate to the **Home** tab.



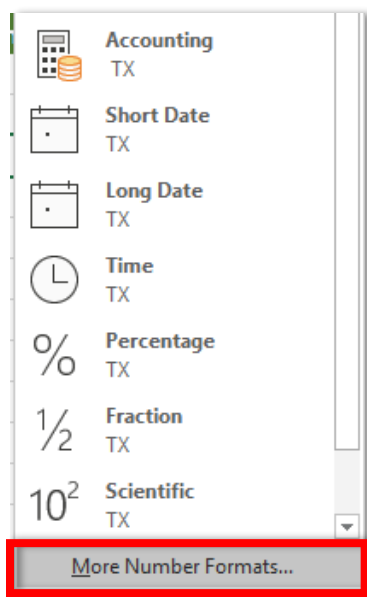
3. Locate the **Number** group



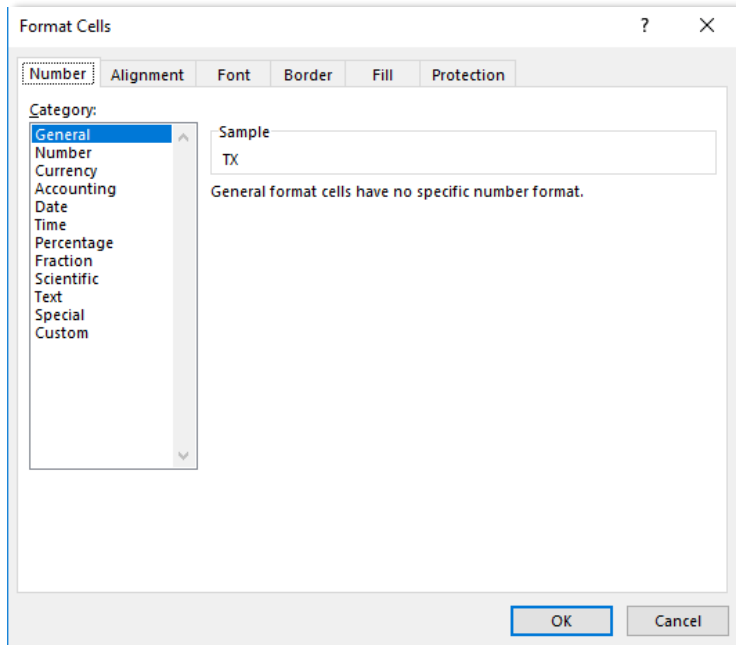
4. Select the **Number Format** drop-down menu.



5. From the drop-down menu, select the **More Number Formats...** option.



6. After selecting the **More Number Formats...** option, Excel will prompt a window where you will be able to select from a variety of number formats that aren't readily available in the ribbon.



Conditional Formatting

The **Styles** group help you format your entire table and add a custom design. In this section, you'll learn about some of the features that the Styles group can offer to Excel users.

One neat way to make your tables look impressive is by using **Conditional Formatting**. Typically, novice Excel users like to highlight entire columns and rows which unfortunately make spreadsheets look unprofessional with much unnecessary color. **Conditional Formatting** allows you to create rules to highlight cells based on certain conditions.

	A	B	C	D
1	Account Name	Account State	Account ID	Potential Revenue
2	THE DAILY BREAD CRUMBS LLC	CA	237144	\$297,083.00
3	ESPINOZA YARD LLC	NM	607771	\$295,231.00
4	NGUYEN INSTITUTE	TX	496586	\$294,923.00
5	DAN & CRADSTREED INC.	CA	323843	\$246,715.00
6	GRACE WARE LLC	CA	692196	\$224,816.00
7	STANFORD LAW INC.	ID	466796	\$213,352.00
8	DAVID&MIMIS INC	NY	801195	\$211,193.00
9	ROBERT SATIN, MD.	CO	691498	\$196,825.00
10	RAIN INSTITUTE OF THE ARTS	AL	209014	\$150,326.00
11	FLOYD INC.	AL	936397	\$147,635.00
12	BASIC TEES, LLC	AL	762117	\$131,281.00
13	ONE WORLD FINANCIAL	CA	987742	\$113,949.00
14	ITALIANO BISTRO FRANCHISE	TX	395227	\$109,443.00
15	ABC DISTRIBUTION CENTER INC.	TX	998149	\$84,092.00

Highlight Cells Rules

One way to use **Conditional Formatting** is by creating a rule that allows you to highlight cells based on rules you create. Let's explore some of the rules you can create that allow Excel to automatically highlight cells that meet those criterias.

Greater Than

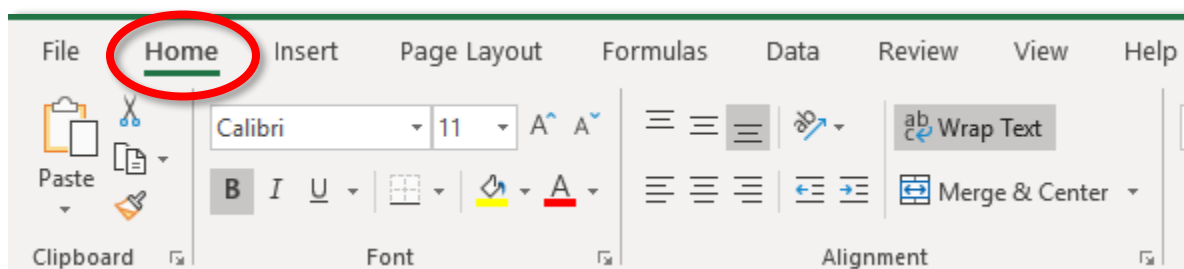
The *Greater Than* rule will highlight any cell that includes a number *greater than* the number that you determine.

To create a *Greater Than* rule:

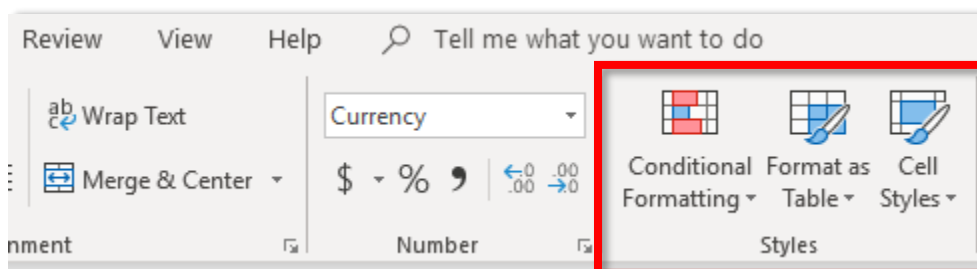
1. Select the range where you want to apply your *conditional formatting*.

	A	B	C	D
1	Account Name	Account State	Account ID	Potential Revenue
2	THE DAILY BREAD CRUMBS LLC	CA	237144	\$297,083.00
3	ESPINOZA YARD LLC	NM	607771	\$295,231.00
4	NGUYEN INSTITUTE	TX	496586	\$294,923.00
5	DAN & CRADSTREED INC.	CA	323843	\$246,715.00
6	GRACE WARE LLC	CA	692196	\$224,816.00
7	STANFORD LAW INC.	ID	466796	\$213,352.00
8	DAVID&MIMIS INC	NY	801195	\$211,193.00
9	ROBERT SATIN, MD.	CO	691498	\$196,825.00
10	RAIN INSTITUTE OF THE ARTS	AL	209014	\$150,326.00

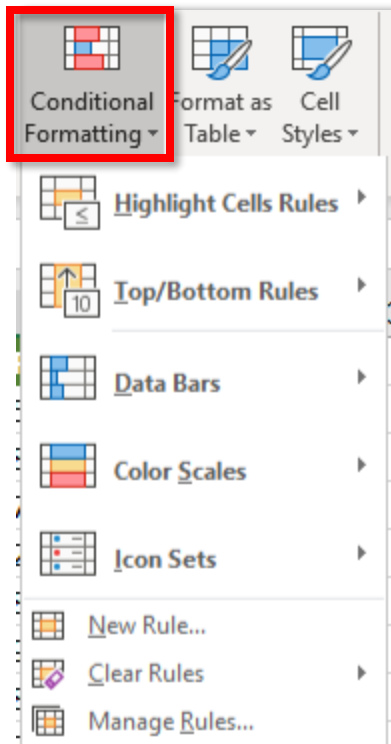
2. Navigate to the **Home** tab.



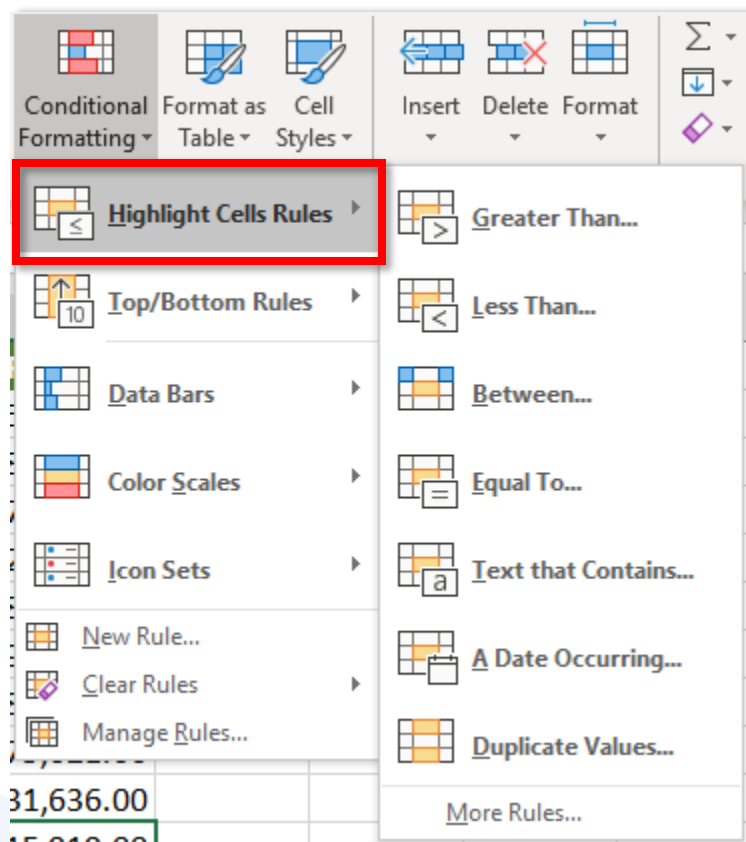
3. Locate the **Styles** group.



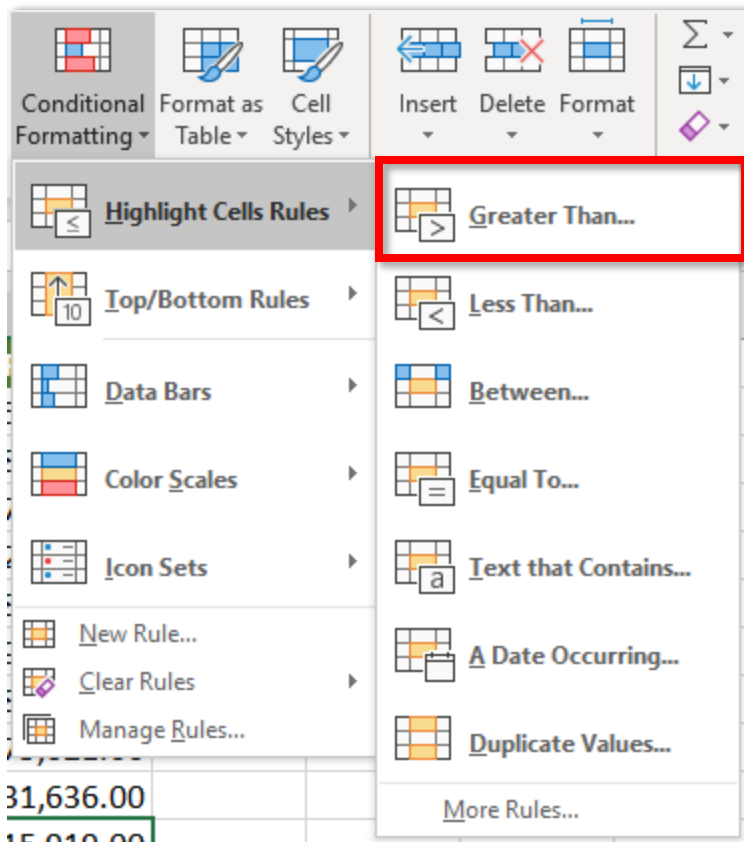
4. Select the **Conditional Formatting** command to display a drop-down menu.



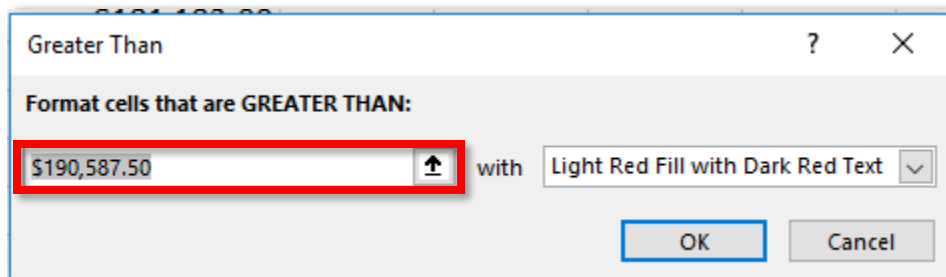
5. Select the **Highlight Cells Rules** option to display a submenu.



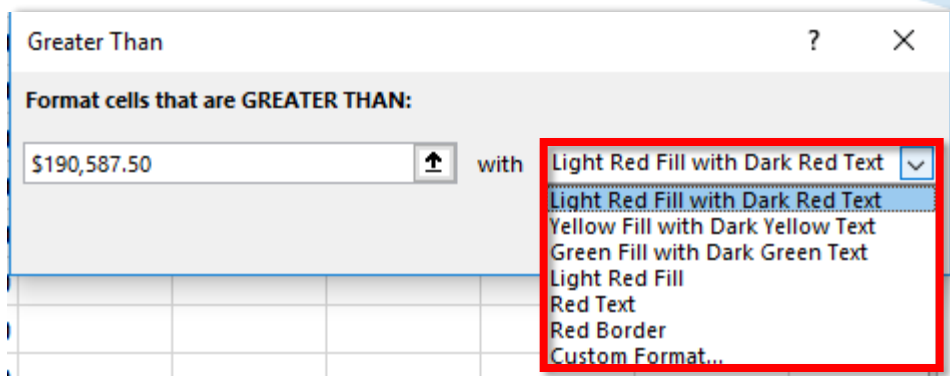
6. Choose the option at the top: **Greater Than...**



7. Excel will display a window to set up your rule. In the text box, type the number for your rule. You want Excel to highlight any cell greater than the number in this text box.



8. The last step is to select the color(s) of the cells Excel will highlight when the rule is true.



Less Than

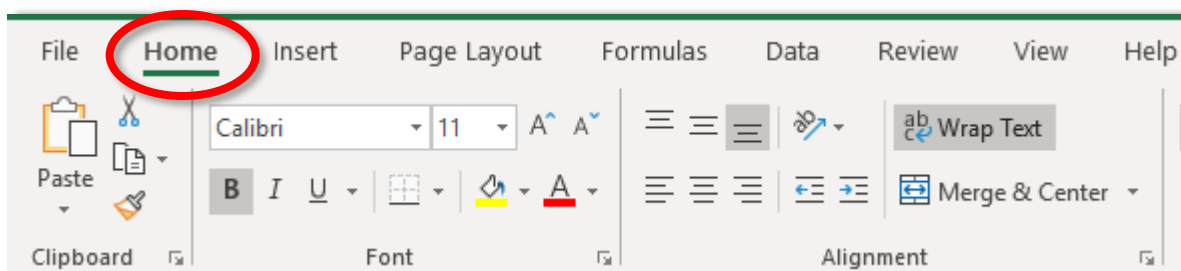
The *Less Than* rule will highlight any cell that includes a number *less than* the number that you determine.

To create a *Less Than* rule:

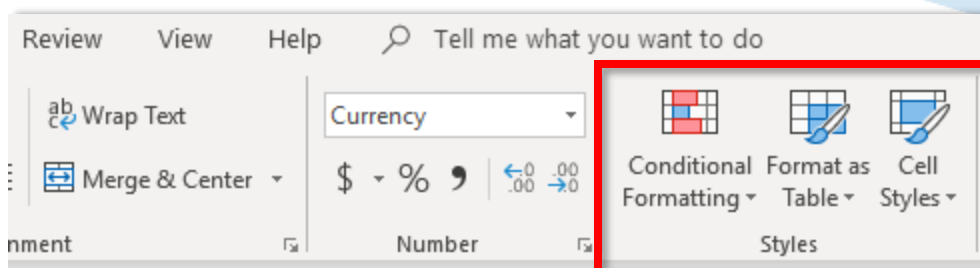
1. Select the range where you want to apply your *conditional formatting*.

	A	B	C	D
1	Account Name	Account State	Account ID	Potential Revenue
2	THE DAILY BREAD CRUMBS LLC	CA	237144	\$297,083.00
3	ESPINOZA YARD LLC	NM	607771	\$295,231.00
4	NGUYEN INSTITUTE	TX	496586	\$294,923.00
5	DAN & CRADSTREED INC.	CA	323843	\$246,715.00
6	GRACE WARE LLC	CA	692196	\$224,816.00
7	STANFORD LAW INC.	ID	466796	\$213,352.00
8	DAVID&MIMIS INC	NY	801195	\$211,193.00
9	ROBERT SATIN, MD.	CO	691498	\$196,825.00
10	RAIN INSTITUTE OF THE ARTS	AL	209014	\$150,326.00

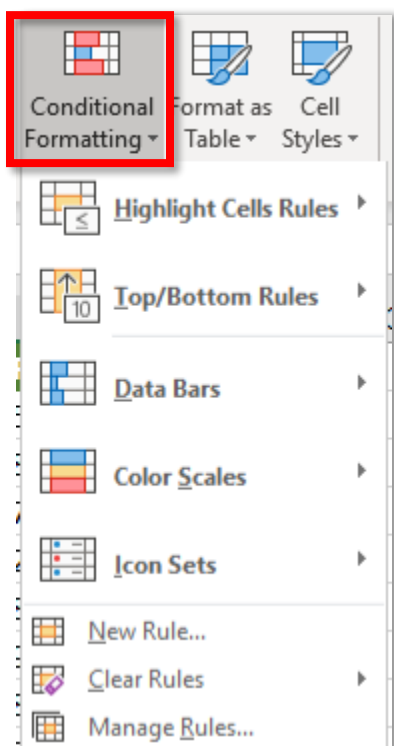
2. Navigate to the **Home** tab.



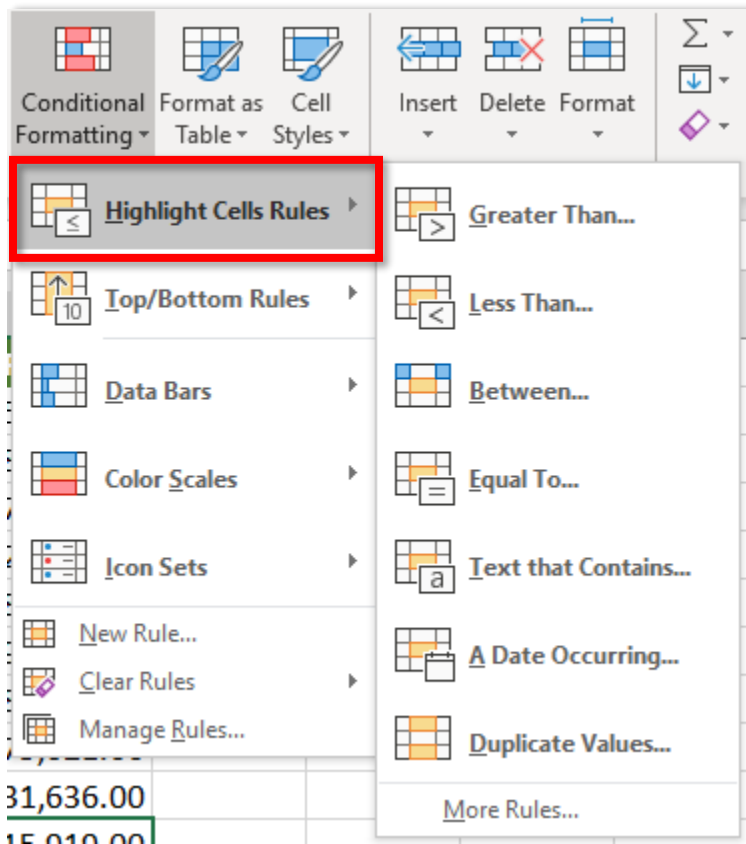
3. Locate the **Styles** group.



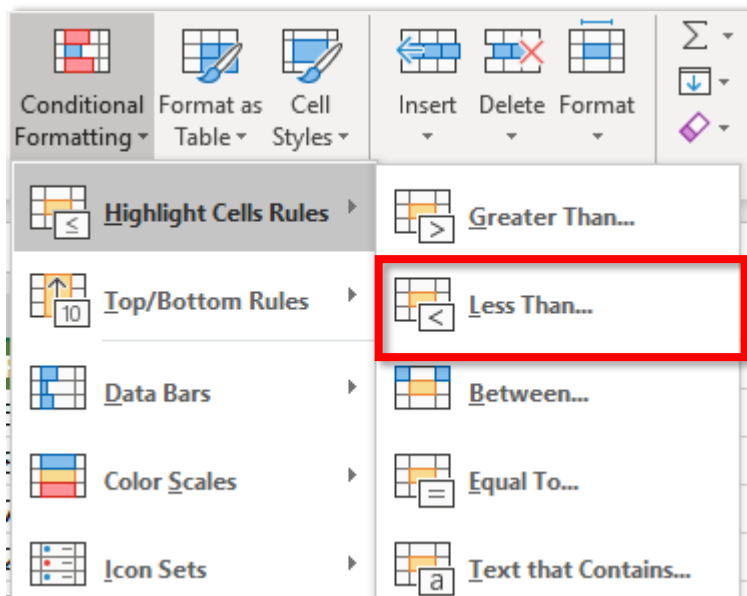
4. Select the **Conditional Formatting** command to display a drop-down menu.



5. Select the **Highlight Cells Rules** option to display a submenu.



6. Choose the option: **Less Than...**



7. Excel will display a window to set up your rule. In the text box, type the number for your rule. You want Excel to highlight any cell less than the number in this text box.

Less Than

Format cells that are LESS THAN:

\$190,587.50 with **Light Red Fill with Dark Red Text**

Light Red Fill with Dark Red Text
 Yellow Fill with Dark Yellow Text
 Green Fill with Dark Green Text
 Light Red Fill
 Red Text
 Red Border
 Custom Format...

- The last step is to select the color(s) of the cells Excel will highlight when the rule is true.

Less Than

Format cells that are LESS THAN:

\$190,587.50 with Light Red Fill with Dark Red Text

OK Cancel

Between

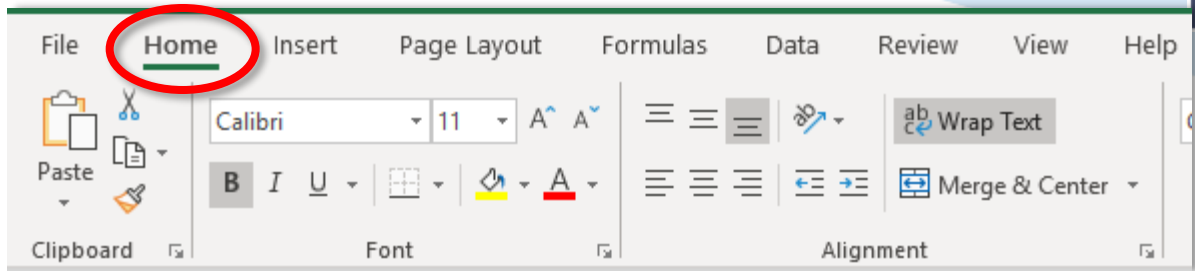
The *Between* rule will highlight cells *between* two numbers that you specify.

To create a *Between* rule:

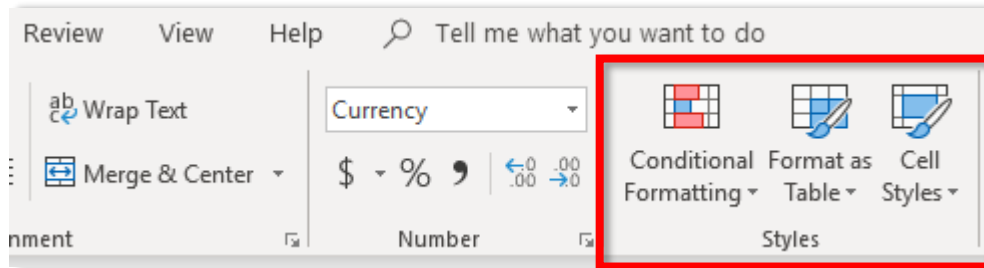
- Select the range where you want to apply your *conditional formatting*.

	A	B	C	D
1	Account Name	Account State	Account ID	Potential Revenue
2	THE DAILY BREAD CRUMBS LLC	CA	237144	\$297,083.00
3	ESPINOZA YARD LLC	NM	607771	\$295,231.00
4	NGUYEN INSTITUTE	TX	496586	\$294,923.00
5	DAN & CRADSTREED INC.	CA	323843	\$246,715.00
6	GRACE WARE LLC	CA	692196	\$224,816.00
7	STANFORD LAW INC.	ID	466796	\$213,352.00
8	DAVID&MIMIS INC	NY	801195	\$211,193.00
9	ROBERT SATIN, MD.	CO	691498	\$196,825.00
10	RAIN INSTITUTE OF THE ARTS	AL	209014	\$150,326.00

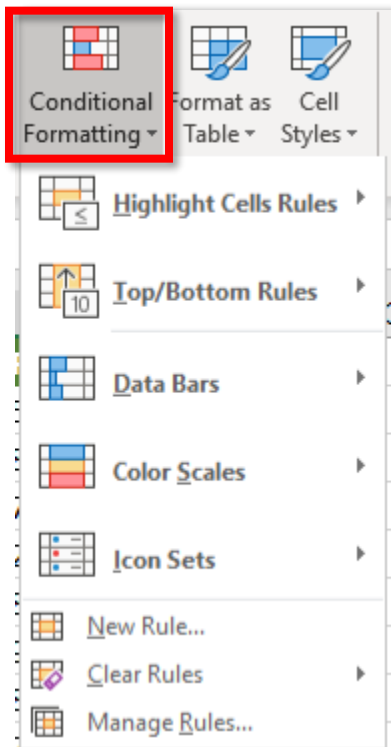
- Navigate to the **Home** tab.



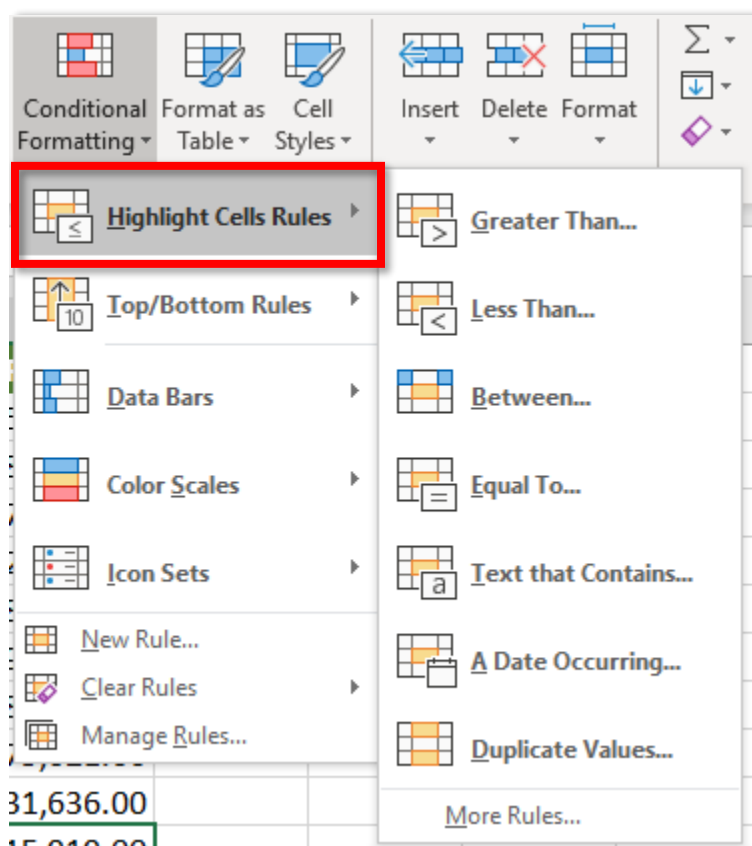
3. Locate the **Styles** group.



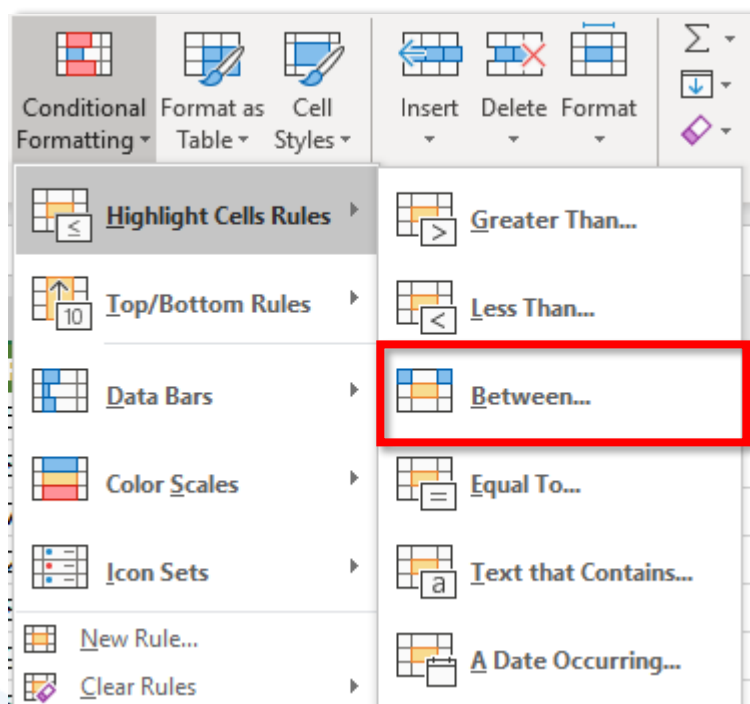
4. Select the **Conditional Formatting** command to display a drop-down menu.



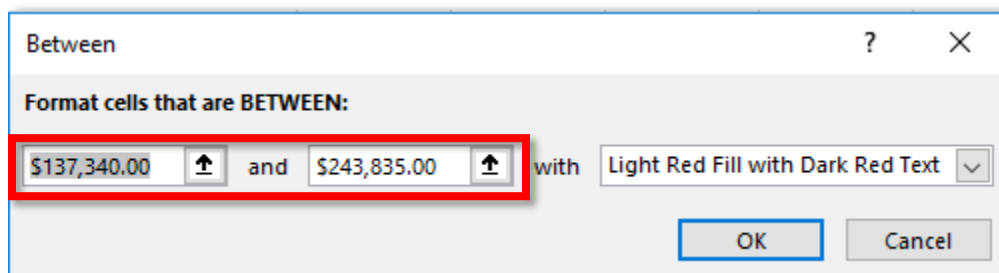
5. Select the **Highlight Cells Rules** option to display a submenu.



6. Choose the option: **Between...**

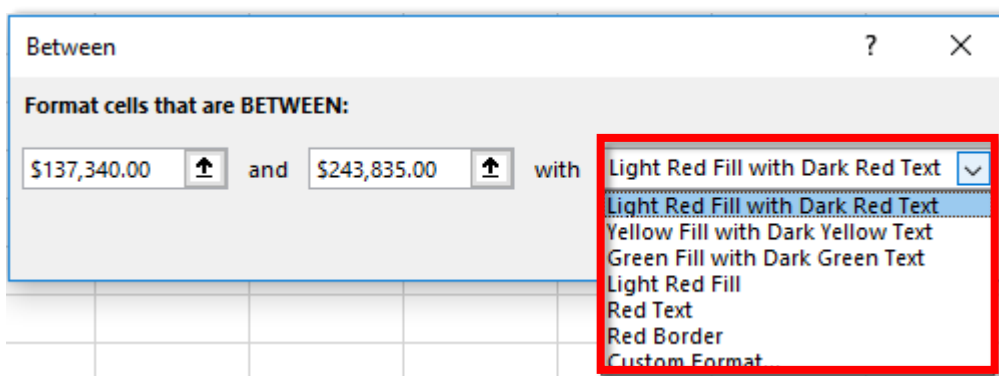


- Excel will display a window to set up your rule. In the text box, type the numbers for the range in your rule. Excel will highlight any cells between these two numbers.



The 'Between' dialog box is shown. It has a title bar with a question mark and a close button. The main text says 'Format cells that are BETWEEN:'. Below this, there are two input fields for numbers, separated by 'and'. The first field contains '\$137,340.00' and the second contains '\$243,835.00'. Both fields have an up arrow icon to their right. To the right of these fields is a 'with' label and a dropdown menu currently set to 'Light Red Fill with Dark Red Text'. At the bottom right are 'OK' and 'Cancel' buttons.

- The last step is to select the color(s) of the cells Excel will highlight when this rule is true.



The 'Between' dialog box is shown with the dropdown menu open. The menu lists several options: 'Light Red Fill with Dark Red Text' (which is highlighted), 'Yellow Fill with Dark Yellow Text', 'Green Fill with Dark Green Text', 'Light Red Fill', 'Red Text', 'Red Border', and 'Custom Format'. The rest of the dialog box is the same as in the previous image.

Equal To

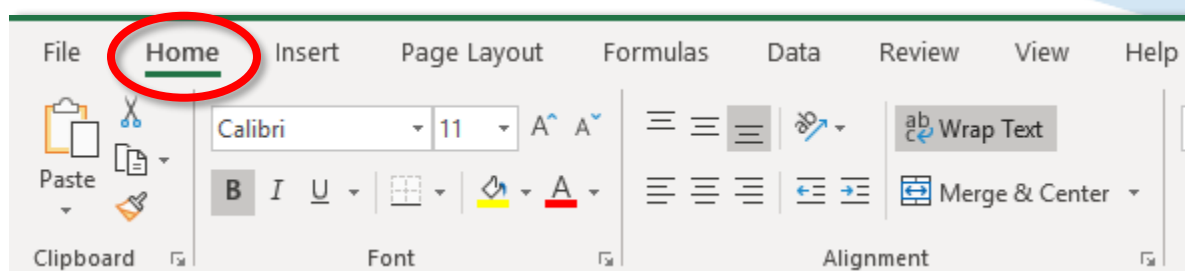
The *Equal To* rule will highlight cells that match an *exact* number or phrase you include in your rule.

To create an *Equal To* rule:

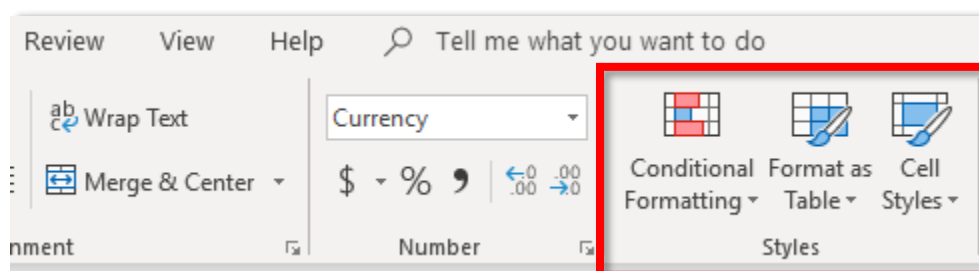
- Select the range where you want to apply your *conditional formatting*.

	A	B	C	D
1	Account Name	Account State	Account ID	Potential Revenue
2	THE DAILY BREAD CRUMBS LLC	CA	237144	\$297,083.00
3	ESPINOZA YARD LLC	NM	607771	\$295,231.00
4	NGUYEN INSTITUTE	TX	496586	\$294,923.00
5	DAN & CRADSTREED INC.	CA	323843	\$246,715.00
6	GRACE WARE LLC	CA	692196	\$224,816.00
7	STANFORD LAW INC.	ID	466796	\$213,352.00
8	DAVID&MIMIS INC	NY	801195	\$211,193.00
9	ROBERT SATIN, MD.	CO	691498	\$196,825.00
10	RAIN INSTITUTE OF THE ARTS	AL	209014	\$150,326.00

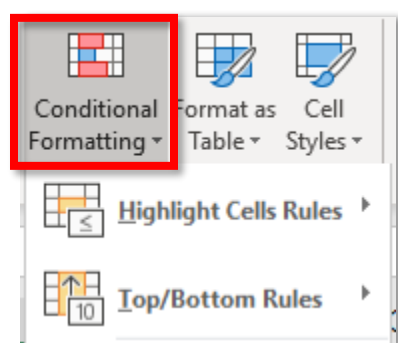
2. Navigate to the **Home** tab.



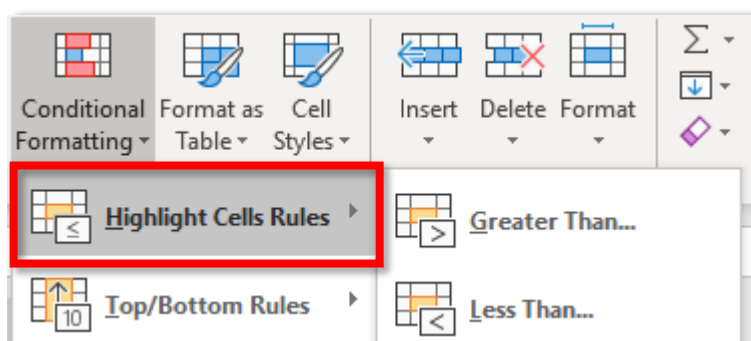
3. Locate the **Styles** group.



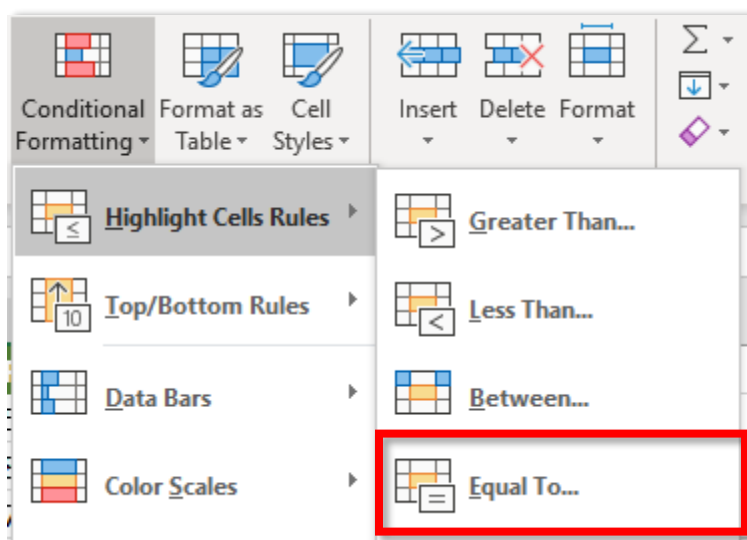
4. Select the **Conditional Formatting** command to display a drop-down menu.



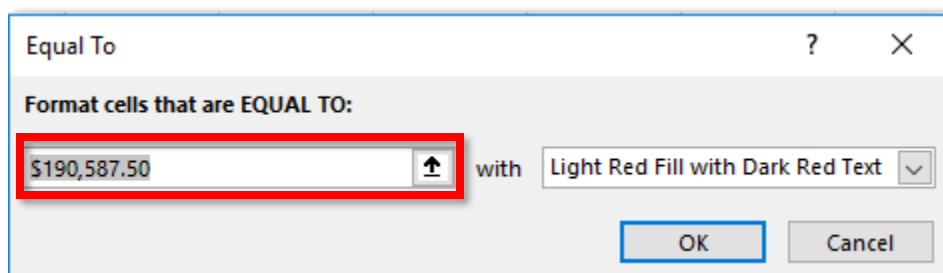
5. Select the **Highlight Cells Rules** option to display a submenu.



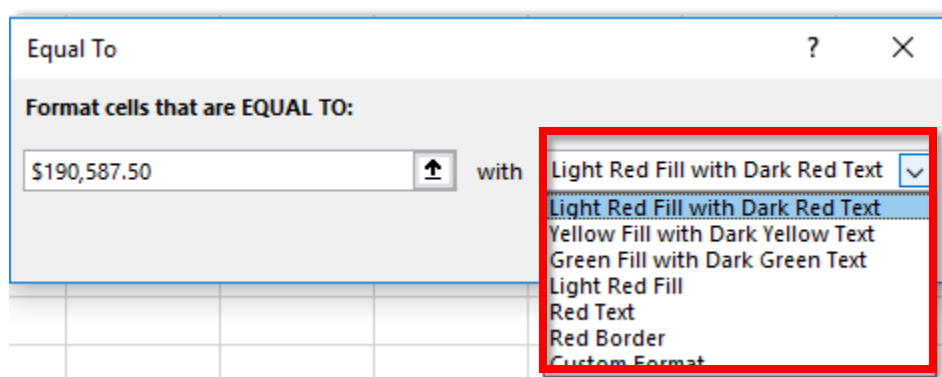
- Choose the option: **Equal To...**



- Excel will display a window to set up your rule. In the text box, type the number or word(s) that Excel will match in order to highlight the cells.



- The last step is to select the color(s) of the cells Excel will highlight when this rule is true.



Text That Contains

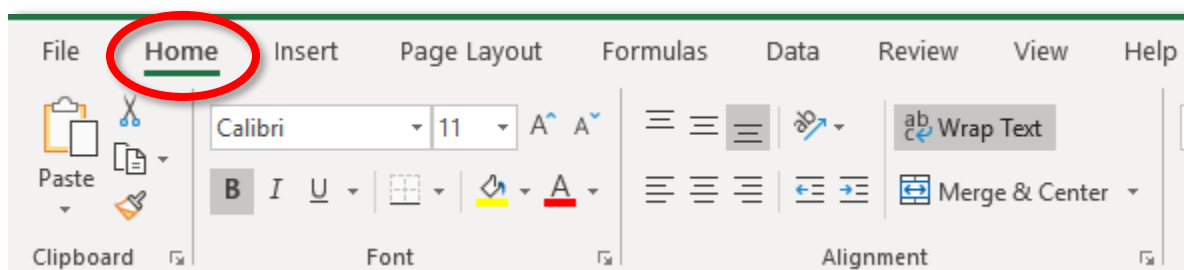
The *Text That Contains* rule will highlight cells that *contain* a certain word or phrase inside those cells.

To create a *Text That Contains* rule:

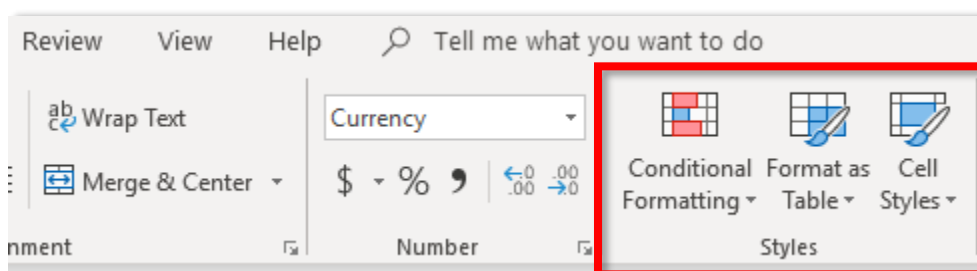
1. Select the range where you want to apply your *conditional formatting*.

	A	B	C	D
1	Account Name	Account State	Account ID	Potential Revenue
2	THE DAILY BREAD CRUMBS LLC	CA	237144	\$297,083.00
3	ESPINOZA YARD LLC	NM	607771	\$295,231.00
4	NGUYEN INSTITUTE	TX	496586	\$294,923.00
5	DAN & CRADSTREED INC.	CA	323843	\$246,715.00
6	GRACE WARE LLC	CA	692196	\$224,816.00
7	STANFORD LAW INC.	ID	466796	\$213,352.00
8	DAVID&MIMIS INC	NY	801195	\$211,193.00
9	ROBERT SATIN, MD.	CO	691498	\$196,825.00
10	RAIN INSTITUTE OF THE ARTS	AL	209014	\$150,326.00

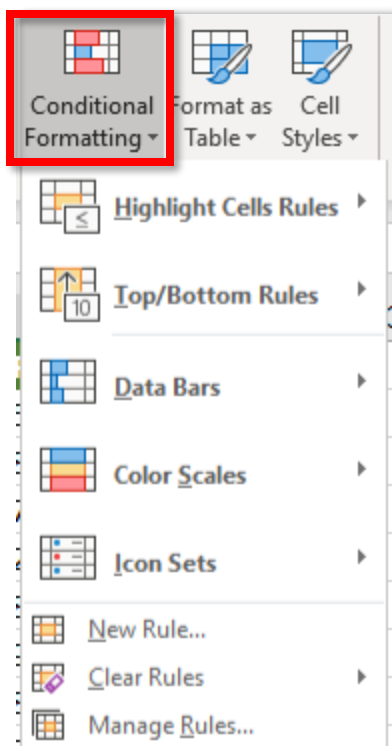
2. Navigate to the **Home** tab.



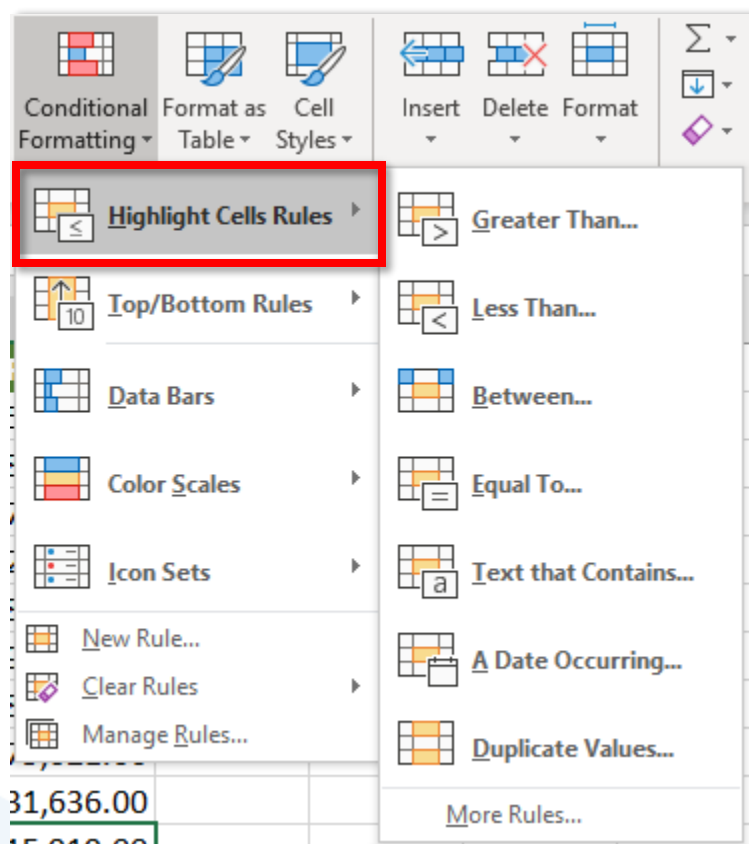
3. Locate the **Styles** group.



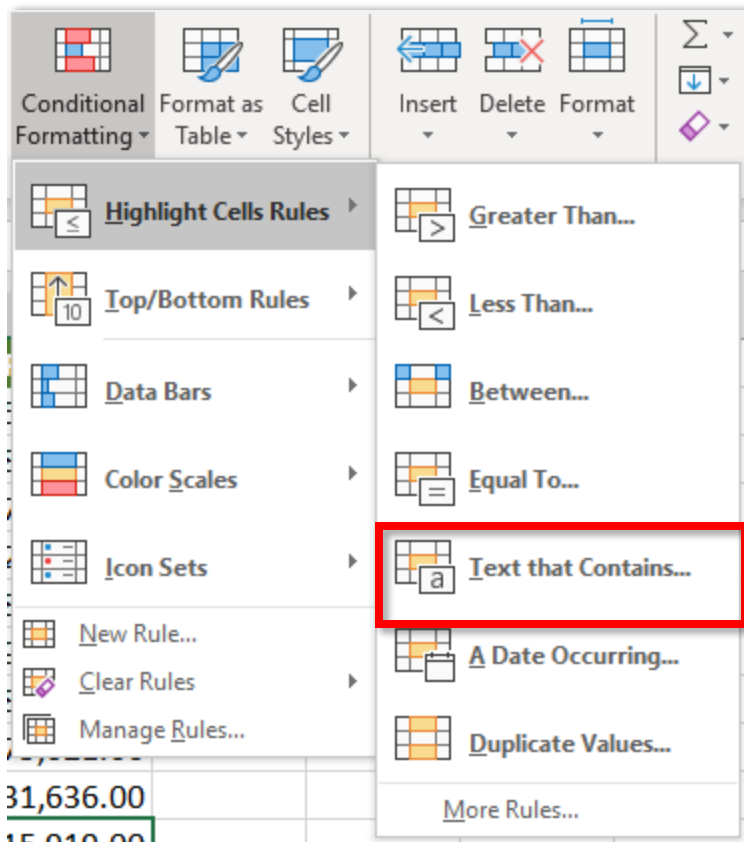
4. Select the **Conditional Formatting** command to display a drop-down menu.



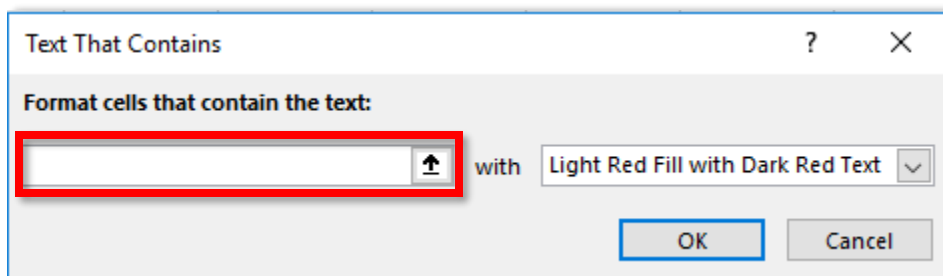
5. Select the **Highlight Cells Rules** option to display a submenu.



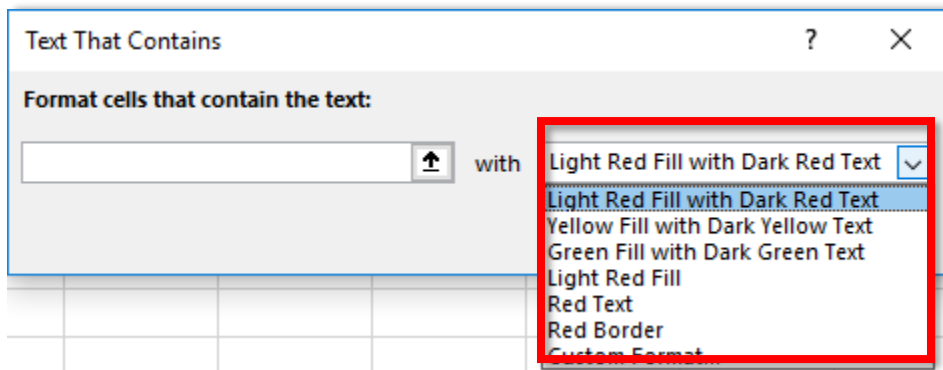
6. Choose the option: **Text That Contains...**



7. Excel will display a window to set up your rule. In the text box, type the number or word(s) that Excel will match in order to highlight the cells.



8. The last step is to select the color(s) of the cells Excel will highlight when this rule is true.



A Date Occurring

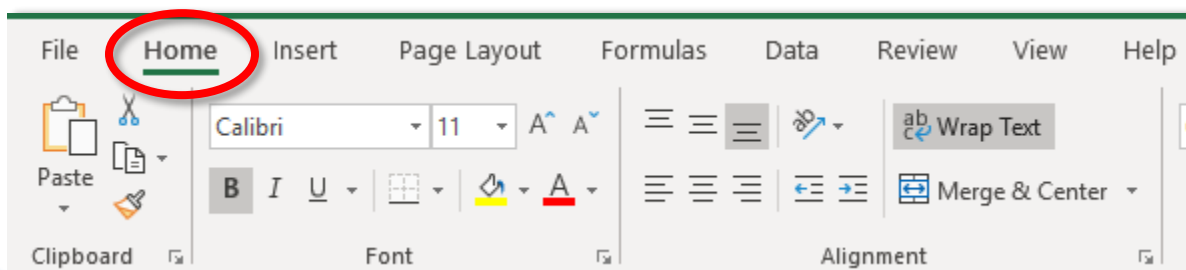
The *A Date Occurring* rule will highlight cells that contain a certain date that you select from a list of choices that Excel provides.

To create *A Date Occurring* rule:

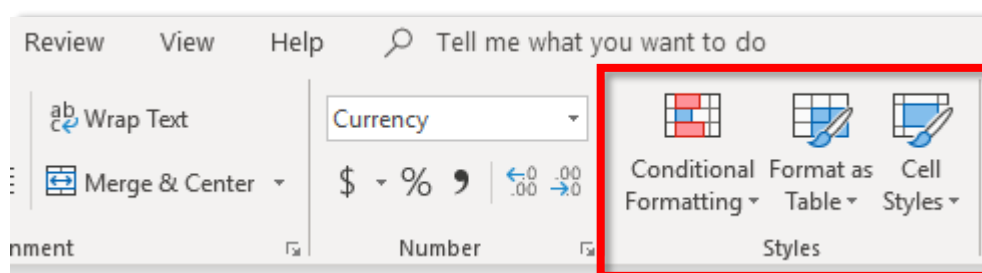
1. Select the range where you want to apply your *conditional formatting*.

	A	B	C	D
1	Account Name	Account State	Account ID	Date of Expiration
2	THE DAILY BREAD CRUMBS LLC	CA	237144	5/5/2019
3	ESPINOZA YARD LLC	NM	607771	4/4/2019
4	NGUYEN INSTITUTE	TX	496586	1/5/2019
5	DAN & CRADSTREED INC.	CA	323843	7/8/2019
6	GRACE WARE LLC	CA	692196	11/15/2019
7	STANFORD LAW INC.	ID	466796	5/5/2019
8	DAVID&MIMIS INC	NY	801195	4/4/2019
9	ROBERT SATIN, MD.	CO	691498	1/5/2019
10	RAIN INSTITUTE OF THE ARTS	AL	209014	7/8/2019
11	FLOYD INC.	AL	936397	11/15/2019
12	BASIC TEES, LLC	AL	762117	5/5/2019
13	ONE WORLD FINANCIAL	CA	987742	4/4/2019
14	ITALIANO BISTRO FRANCHISE	TX	395227	1/5/2019
15	ABC DISTRIBUTION CENTER INC.	TX	998149	7/8/2019

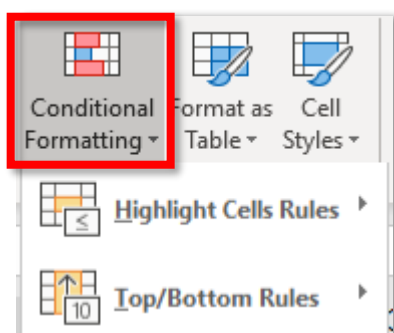
2. Navigate to the **Home** tab.



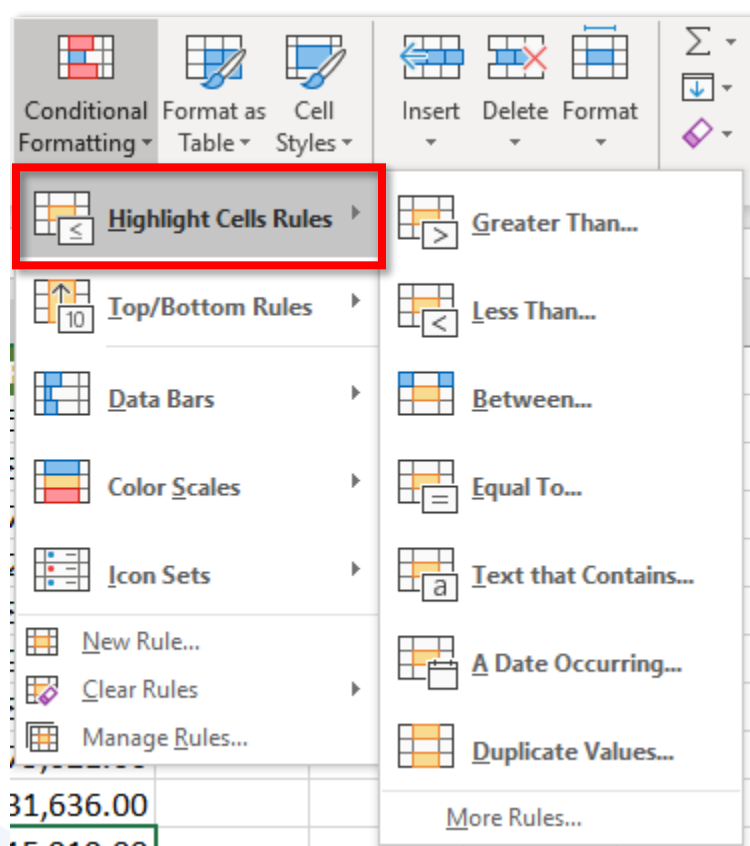
3. Locate the **Styles** group.



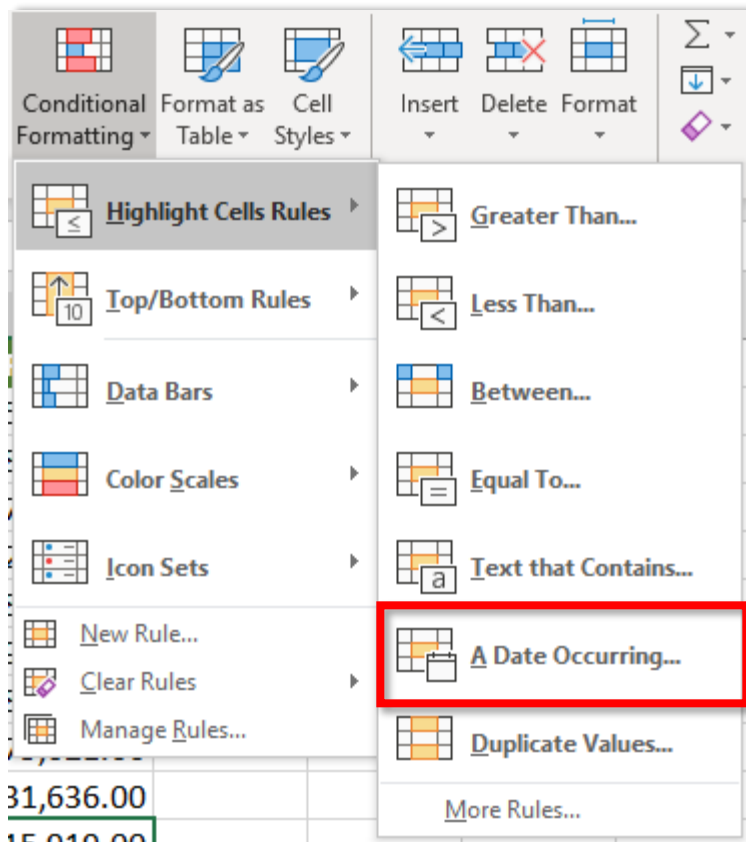
4. Select the **Conditional Formatting** command to display a drop-down menu.



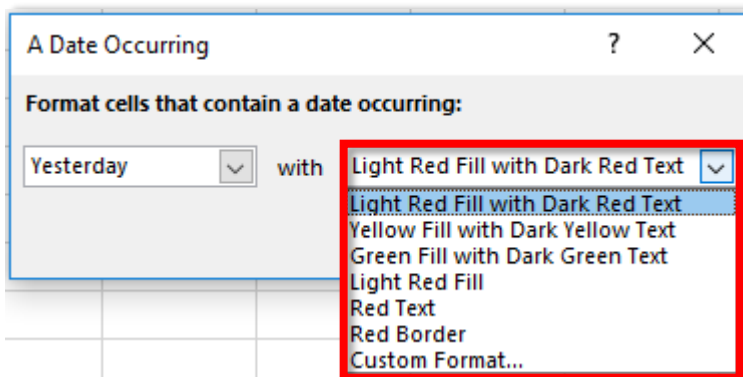
5. Select the **Highlight Cells Rules** option to display a submenu.



6. Choose the option: **A Date Occurring...**



7. Excel will display a window to set up your rule. In the drop-down menu on the left side, whether you want to highlight duplicate entries or unique entries.
8. The last step is to select the color(s) of the cells Excel will highlight when this rule is true.



Duplicate Values

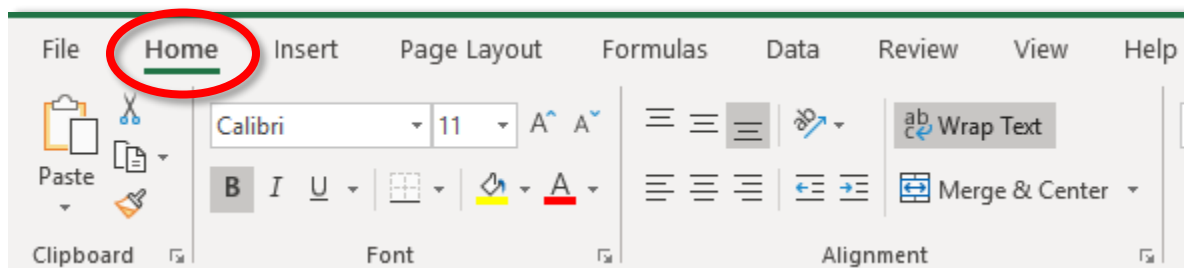
The *Duplicate Values* rule will highlight cells in a range or area with duplicate entries, or you can also highlight cells with unique values.

To create *Duplicate Values* rule:

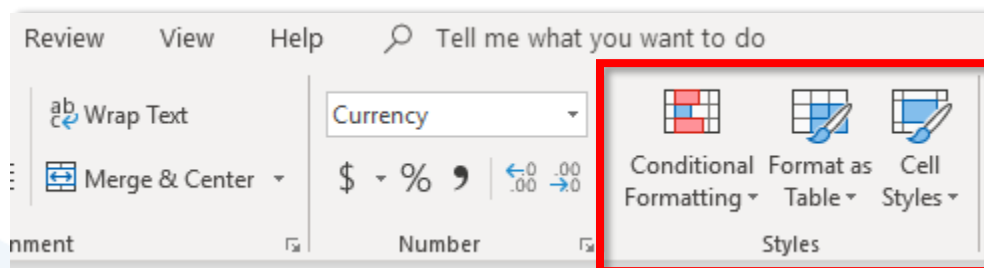
1. Select the range or column where you want to apply your *conditional formatting*.

	A	B	C	D
1	Account Name	Account State	Account ID	Date of Expiration
2	THE DAILY BREAD CRUMBS LLC	CA	237144	5/5/2019
3	ESPINOZA YARD LLC	NM	607771	4/4/2019
4	NGUYEN INSTITUTE	TX	496586	1/5/2019
5	DAN & CRADSTREED INC.	CA	323843	7/8/2019
6	GRACE WARE LLC	CA	692196	11/15/2019
7	STANFORD LAW INC.	ID	466796	5/5/2019
8	DAVID&MIMIS INC	NY	801195	4/4/2019
9	ROBERT SATIN, MD.	CO	691498	1/5/2019
10	RAIN INSTITUTE OF THE ARTS	AL	209014	7/8/2019
11	FLOYD INC.	AL	936397	11/15/2019
12	BASIC TEES, LLC	AL	762117	5/5/2019
13	ONE WORLD FINANCIAL	CA	987742	4/4/2019
14	ITALIANO BISTRO FRANCHISE	TX	395227	1/5/2019
15	ABC DISTRIBUTION CENTER INC.	TX	998149	7/8/2019

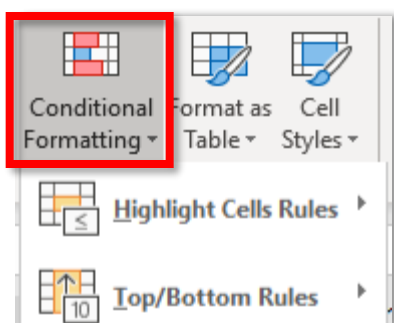
2. Navigate to the **Home** tab.



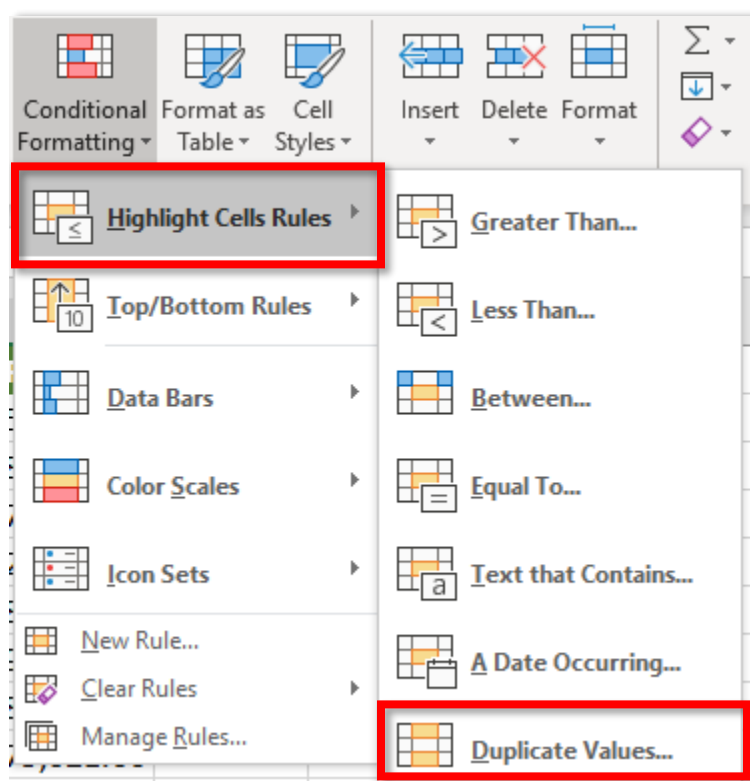
3. Locate the **Styles** group.



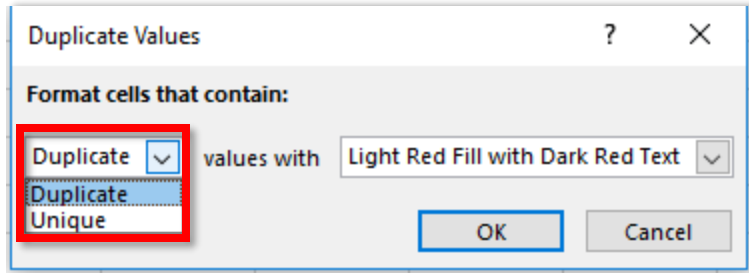
4. Select the **Conditional Formatting** command to display a drop-down menu.



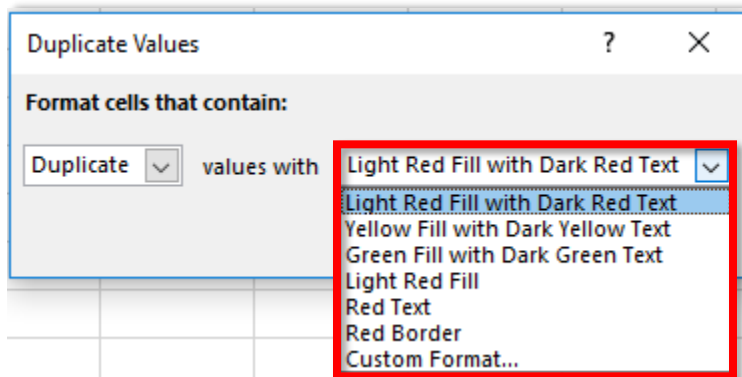
5. Select the **Highlight Cells Rules** option to display a submenu and choose the option: **Duplicate Values...**



6. Excel will display a window to set up your rule. In the drop-down menu on the left side, select whether you want Excel to highlight duplicate entries or unique values.



7. The last step is to select the color(s) of the cells Excel will highlight when this rule is true.



Top/Bottom Rules

Excel has some pre-built rules that you can use if you want to highlight cells from a predefined list. The **Top/Bottom Rules** options are to be used only with numbers. Here are the few options available for the *Top/Bottom Rules*.

Top 10 Items

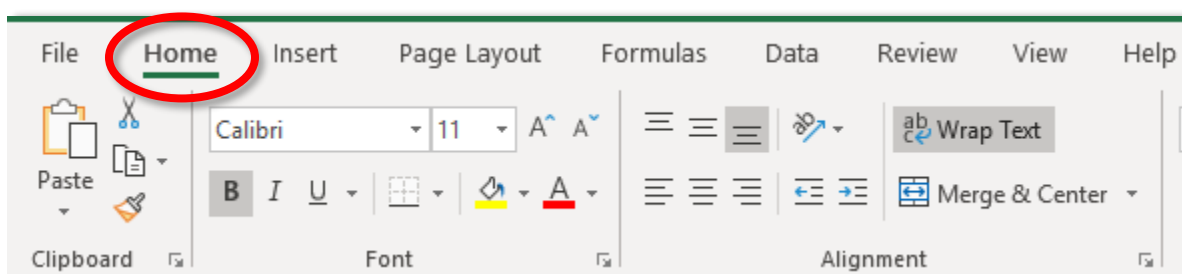
The **Top 10 Items** defaults to the highest 10 amounts or numbers in a range or column. You can also change how many entries you want to highlight.

To use the **Top 10 Items** rule:

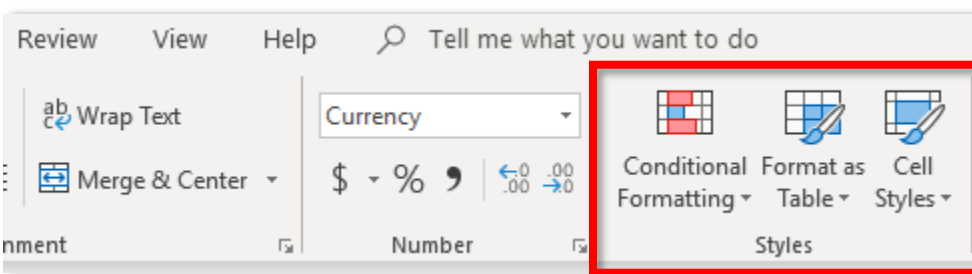
1. Select the range or column where you want to apply the rule.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2
3	BASIC TEES, LLC	\$131,281.65	36.55
4	DAN & CRADSTREED INC.	\$246,715.65	78.5
5	DAVID&MIMIS INC	\$211,193.76	67.67777
6	ESPINOZA YARD LLC	\$295,231.23	89.999999
7	FLOYD INC.	\$147,635.76	38.75
8	GRACE WARE LLC	\$224,816.89	75.666666
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.25
10	NGUYEN INSTITUTE	\$294,923.13	85.25

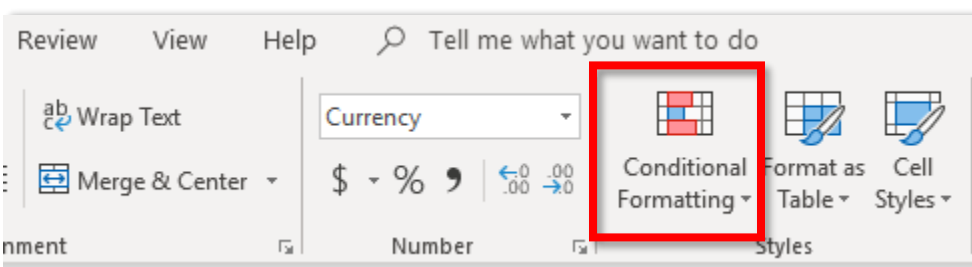
2. Navigate to the **Home** tab.



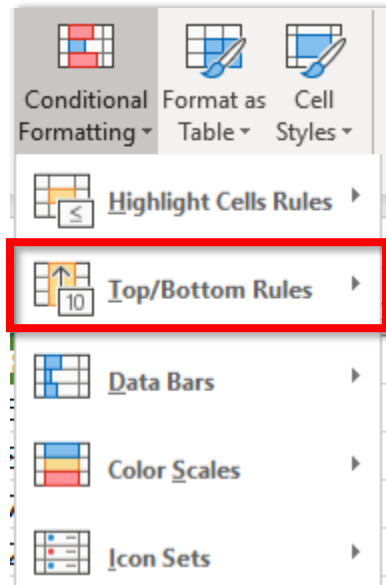
3. Locate the **Styles** group.



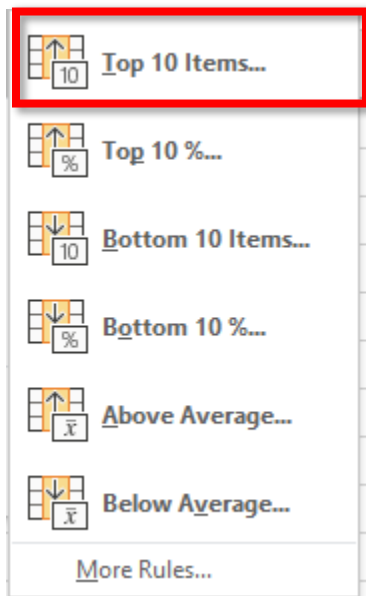
4. Select the **Conditional Formatting** command to display a drop-down menu.



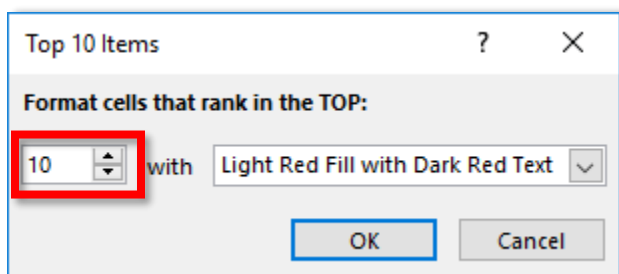
5. In the drop-down menu, select the **Top/Bottom Rules** option.



6. From the **Top/Bottom Rules** submenu select the **Top 10 Items...** option.



- After selecting the **Top 10 Items...** option, Excel will display a dialog box. On the left side of the box you can change the number of top items to highlight. Excel defaults to 10.



- On the right-side of the pop-up window, select how you would like Excel to highlight the cells that meet this rule.



Top 10%

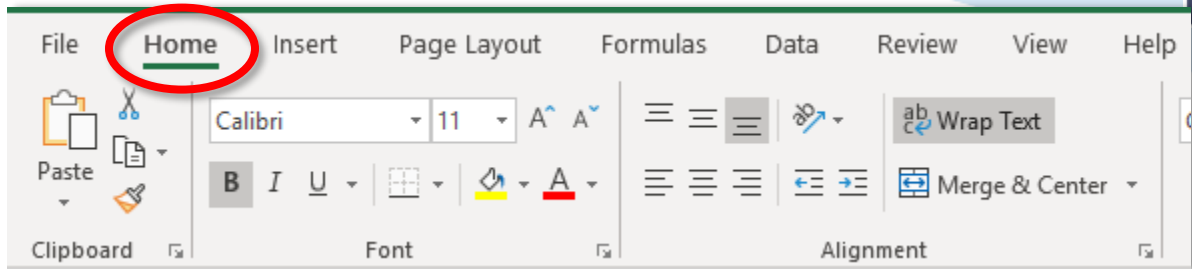
The *Top 10%* option allows you to highlight the top 10% of a given range. You can also change the percentage if, for example, you want Excel to highlight the top 25% ranking instead.

To use the **Top 10%** rule:

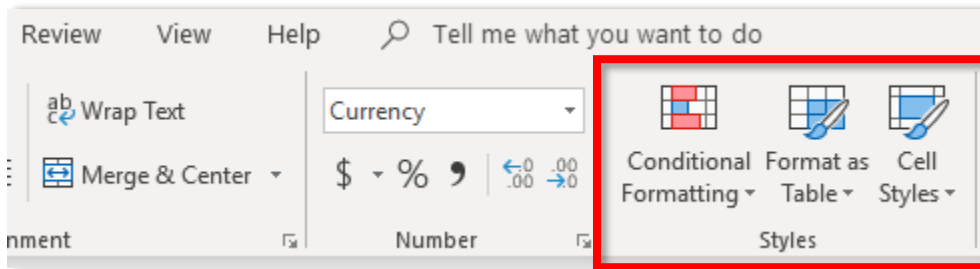
- Select the range or column where you want to apply the rule.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2%
3	BASIC TEES, LLC	\$131,281.65	36.6%
4	DAN & CRADSTREED INC.	\$246,715.65	78.5%
5	DAVID&MIMIS INC	\$211,193.76	67.7%
6	ESPINOZA YARD LLC	\$295,231.23	90.0%
7	FLOYD INC.	\$147,635.76	38.8%
8	GRACE WARE LLC	\$224,816.89	75.7%
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.3%
10	NGUYEN INSTITUTE	\$294,923.13	85.3%

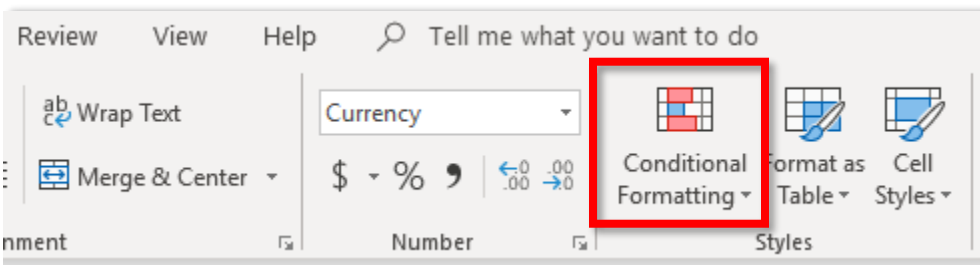
- Navigate to the **Home** tab.



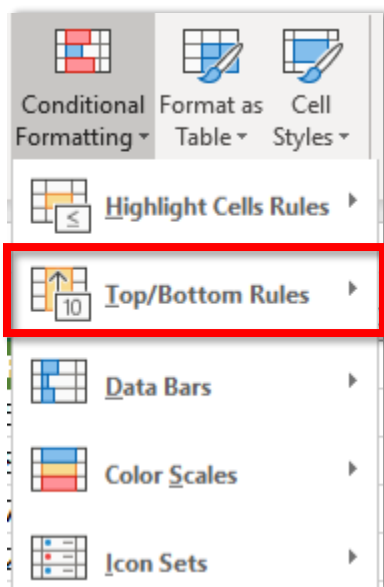
3. Locate the **Styles** group.



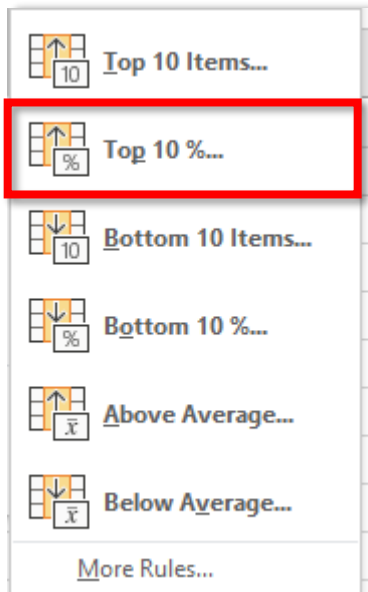
4. Select the **Conditional Formatting** command to display a drop-down menu.



5. In the drop-down menu, select the **Top/Bottom Rules** option.



- From the **Top/Bottom Rules** submenu select the **Top 10%...** option.



- After selecting the **Top 10%...** option, Excel will display a dialog box. On the left side of the box you can change the percentage of cells that will be highlighted.



- On the right-side of the pop-up window, select how you would like Excel to highlight the cells that meet this rule.



Bottom 10 Items

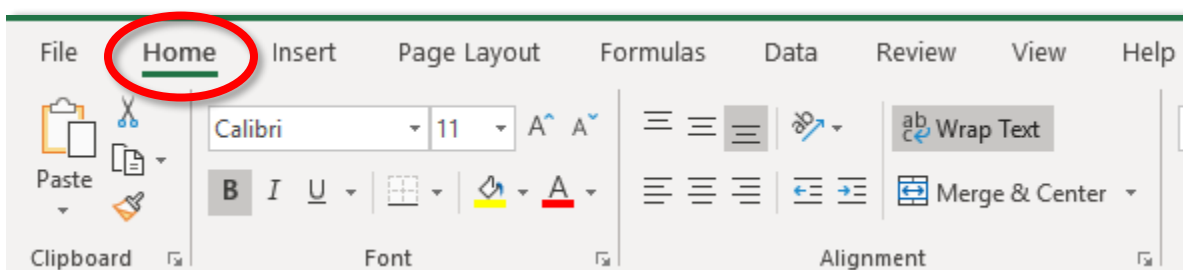
The **Bottom 10 Items** option highlights the lowest 10 items in a given range or column. You also have the option to change the number of items to be highlighted; it doesn't have to be ten.

To use the **Bottom 10 Items** rule:

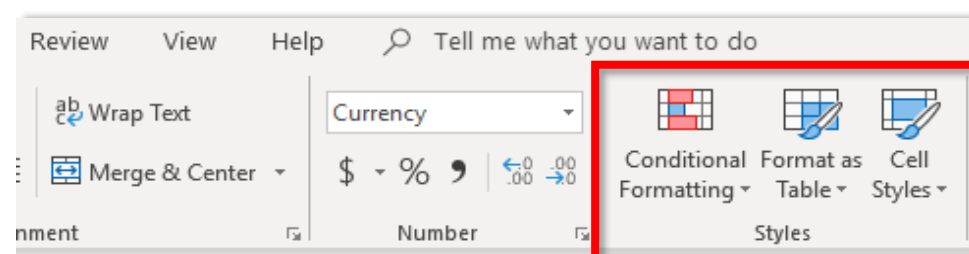
1. Select the range or column where you want to apply the rule.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2
3	BASIC TEES, LLC	\$131,281.65	36.55
4	DAN & CRADSTREED INC.	\$246,715.65	78.5
5	DAVID&MIMIS INC	\$211,193.76	67.67777
6	ESPINOZA YARD LLC	\$295,231.23	89.999999
7	FLOYD INC.	\$147,635.76	38.75
8	GRACE WARE LLC	\$224,816.89	75.666666
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.25
10	NGUYEN INSTITUTE	\$294,923.13	85.25

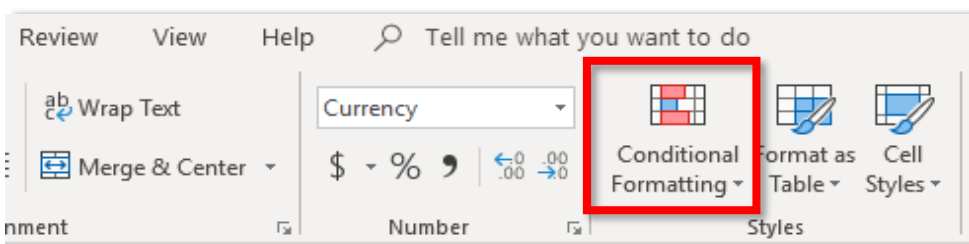
2. Navigate to the **Home** tab.



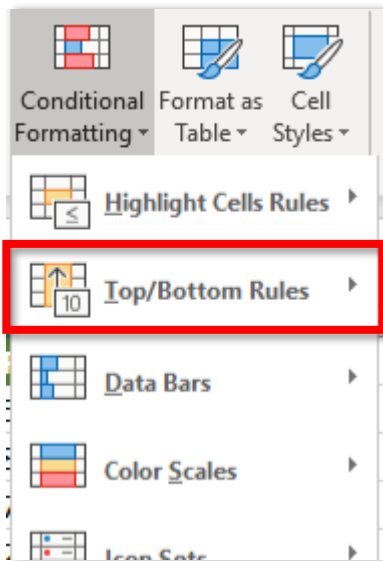
3. Locate the **Styles** group.



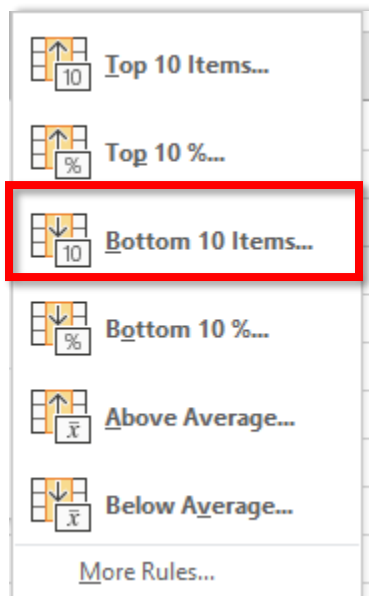
4. Select the **Conditional Formatting** command to display a drop-down menu.



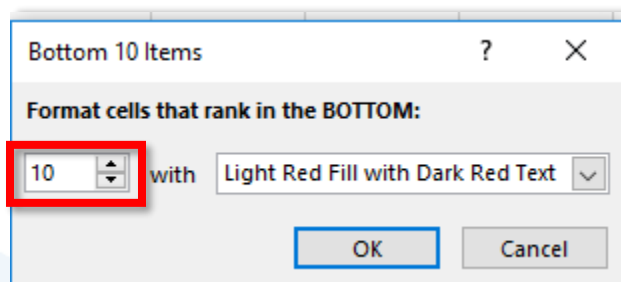
- In the drop-down menu, select the **Top/Bottom Rules** option.



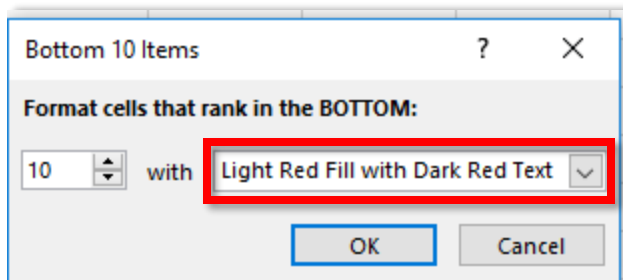
- From the **Top/Bottom Rules** submenu select the **Bottom 10 Items...** option.



- After selecting the **Bottom 10 Items...** option, Excel will display a dialog box. On the left side of the box you can change the number of items Excel will highlight.



- On the right-side of the pop-up window, select how you would like Excel to highlight the cells that meet this rule.



Bottom 10%

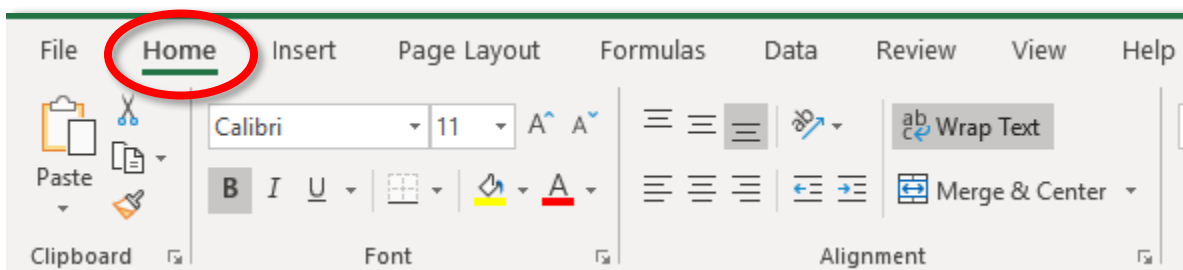
The *Bottom 10%* highlights the lowest 10% of a given range or column.

To use the **Bottom 10%** rule:

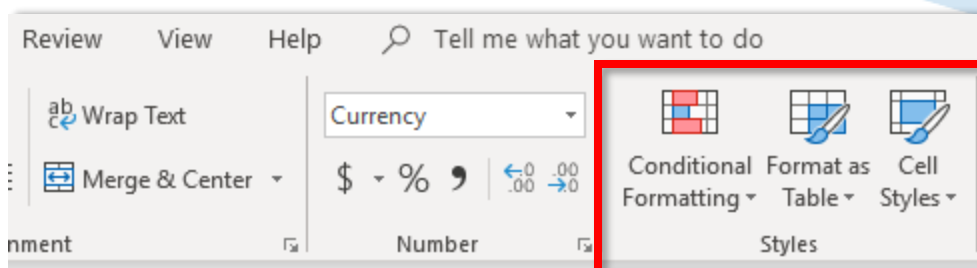
- Select the range or column where you want to apply the rule.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2%
3	BASIC TEES, LLC	\$131,281.65	36.6%
4	DAN & CRADSTREED INC.	\$246,715.65	78.5%
5	DAVID&MIMIS INC	\$211,193.76	67.7%
6	ESPINOZA YARD LLC	\$295,231.23	90.0%
7	FLOYD INC.	\$147,635.76	38.8%
8	GRACE WARE LLC	\$224,816.89	75.7%
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.3%
10	NGUYEN INSTITUTE	\$294,923.13	85.3%

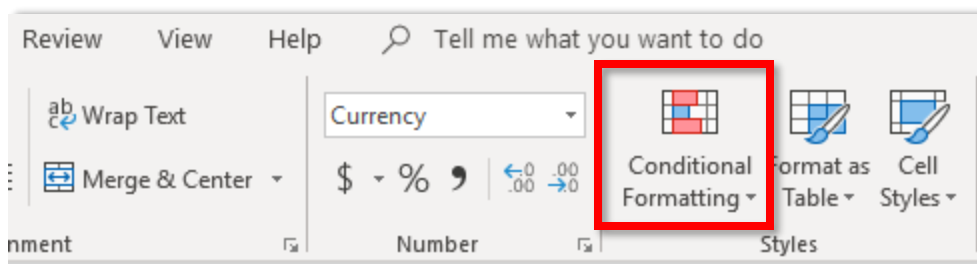
- Navigate to the **Home** tab.



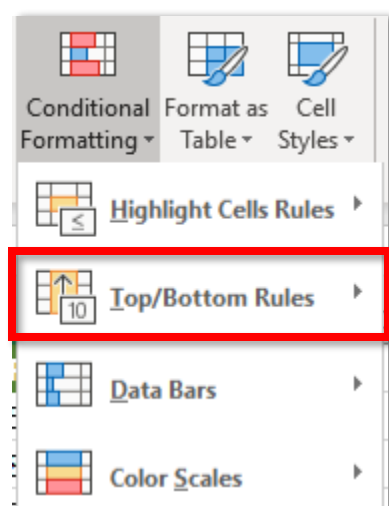
- Locate the **Styles** group.



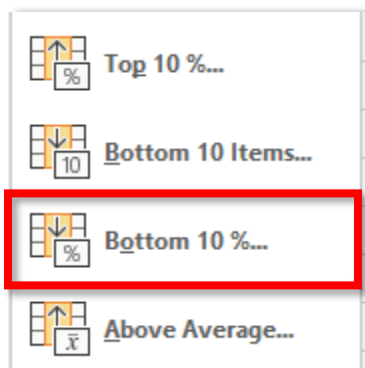
4. Select the **Conditional Formatting** command to display a drop-down menu.



5. In the drop-down menu, select the **Top/Bottom Rules** option.



6. From the **Top/Bottom Rules** submenu select the **Bottom 10%...** option.



- After selecting the **Bottom 10%...** option, Excel will display a dialog box. On the left side of the box you can change the percentage of cells that will be highlighted.



- On the right-side of the pop-up window, select how you would like Excel to highlight the cells that meet this rule.



Above Average

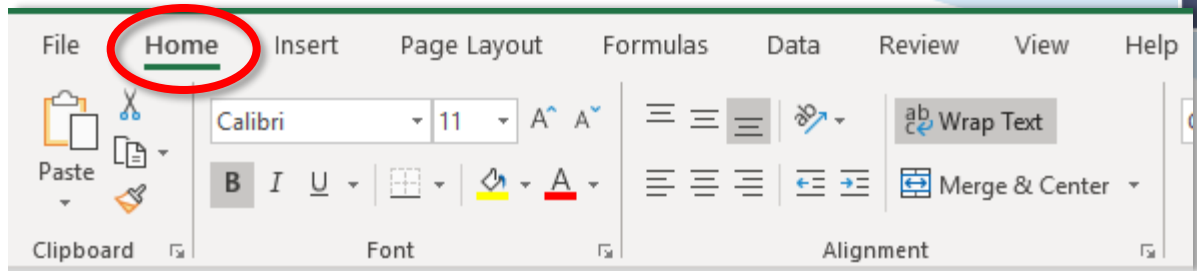
The **Above Average** rule allows you to highlight any cells that are above the average from a given range or column.

To use the **Above Average** rule:

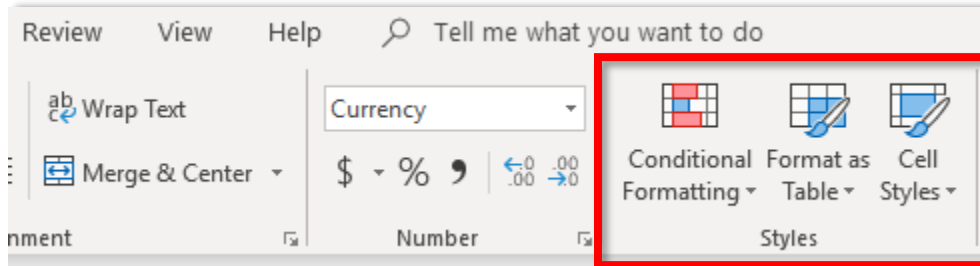
- Select the range or column where you want to apply the rule.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2%
3	BASIC TEES, LLC	\$131,281.65	36.6%
4	DAN & CRADSTREED INC.	\$246,715.65	78.5%
5	DAVID&MIMIS INC	\$211,193.76	67.7%
6	ESPINOZA YARD LLC	\$295,231.23	90.0%
7	FLOYD INC.	\$147,635.76	38.8%
8	GRACE WARE LLC	\$224,816.89	75.7%
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.3%
10	NGUYEN INSTITUTE	\$294,923.13	85.3%

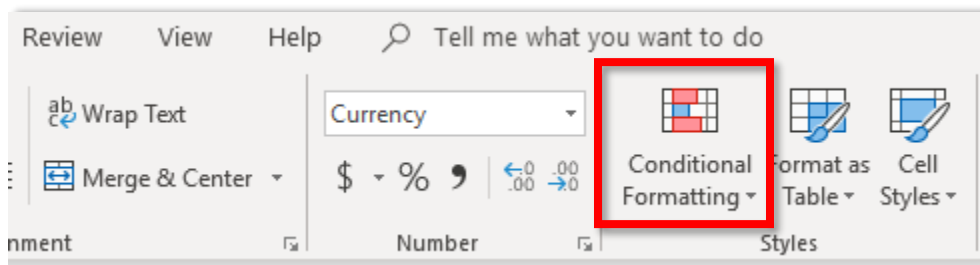
- Navigate to the **Home** tab.



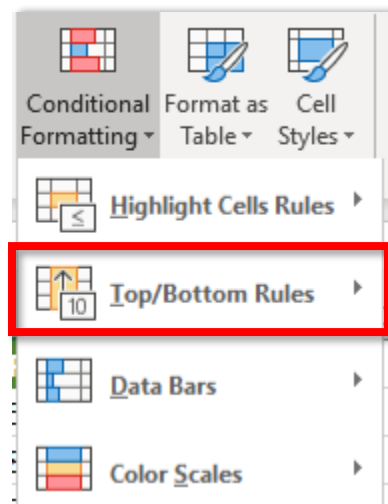
3. Locate the **Styles** group.



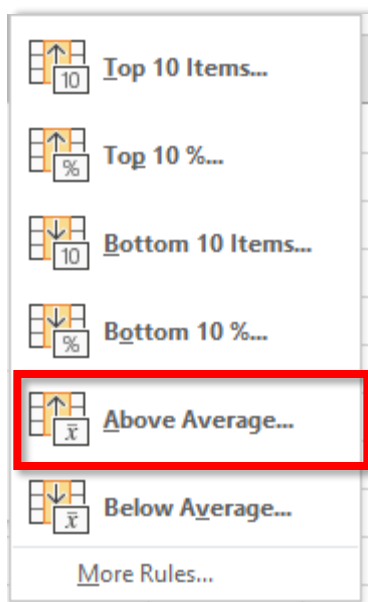
4. Select the **Conditional Formatting** command to display a drop-down menu.



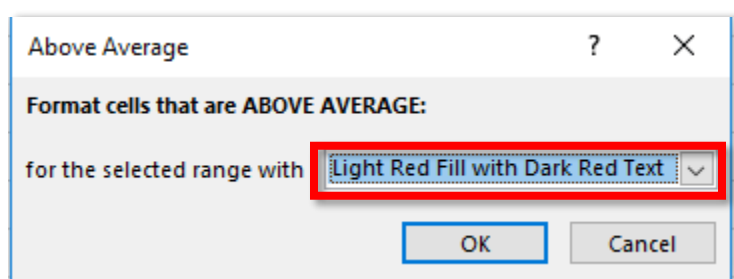
5. In the drop-down menu, select the **Top/Bottom Rules** option.



6. From the **Top/Bottom Rules** submenu select the **Above Average...** option.



7. Select the color(s) you want Excel use to highlight the cells that meet your rule.



Below Average

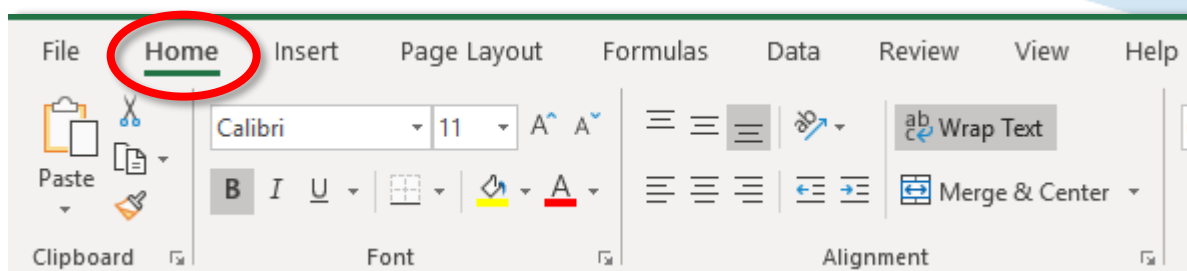
The **Below Average** rule allows you to highlight any cells that are below average in a given range.

To use the **Below Average** rule:

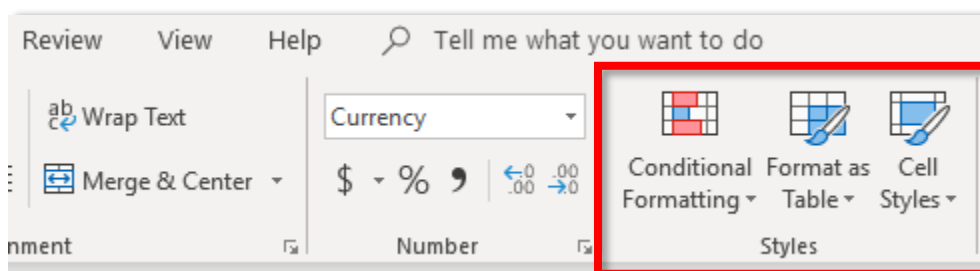
1. Select the range or column where you want to apply the rule.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2%
3	BASIC TEES, LLC	\$131,281.65	36.6%
4	DAN & CRADSTREED INC.	\$246,715.65	78.5%
5	DAVID&MIMIS INC	\$211,193.76	67.7%
6	ESPINOZA YARD LLC	\$295,231.23	90.0%
7	FLOYD INC.	\$147,635.76	38.8%
8	GRACE WARE LLC	\$224,816.89	75.7%
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.3%
10	NGUYEN INSTITUTE	\$294,923.13	85.3%

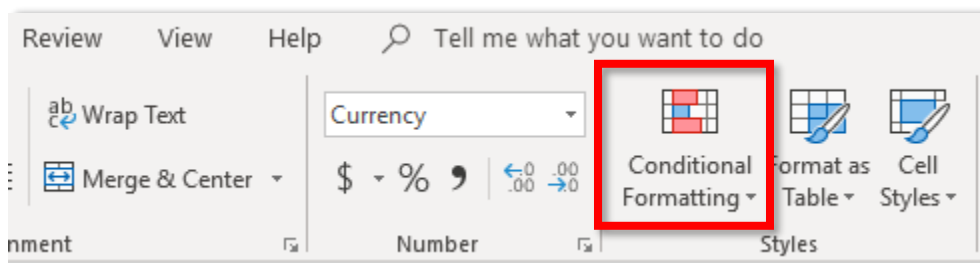
2. Navigate to the **Home** tab.



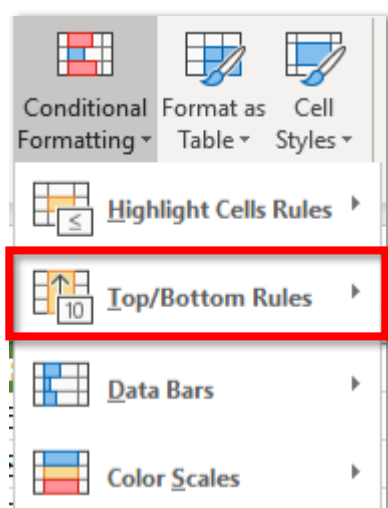
3. Locate the **Styles** group.



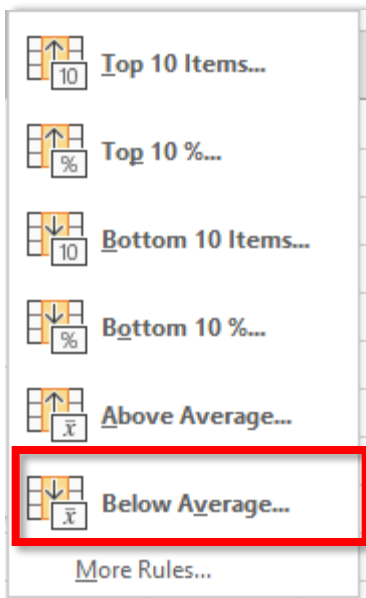
4. Select the **Conditional Formatting** command to display a drop-down menu.



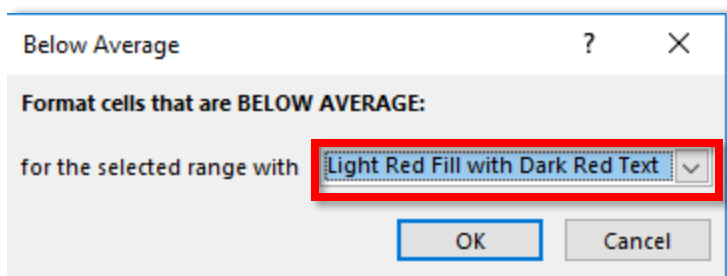
5. In the drop-down menu, select the **Top/Bottom Rules** option.



6. From the **Top/Bottom Rules** submenu select the **Below Average...** option.



7. Select the color(s) you want Excel use to highlight the cells that meet your rule.



Data Bars

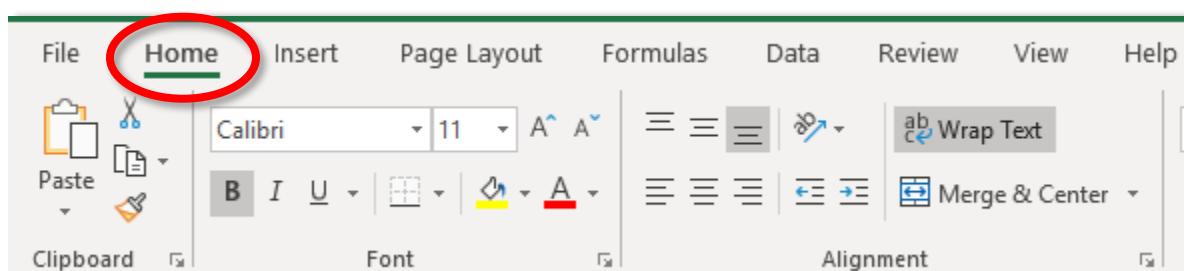
Data Bars allow you to insert colored bars inside your cells to represent a number. The larger the number the longer the bar. The smaller the number, the shorter the bar. The length of the bars are represented in relation to the range that you select. The **Data Bars** option is an easy way to add a visual representation to your data without needing to use charts or graphs.

To use **Data Bars**:

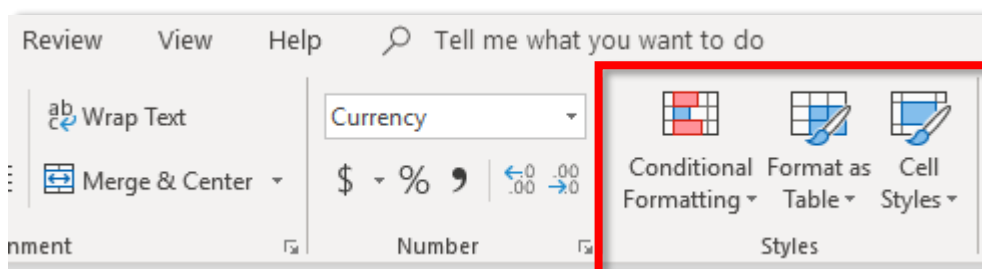
1. Select the range or columns where you want to apply the data bars.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2%
3	BASIC TEES, LLC	\$131,281.65	36.6%
4	DAN & CRADSTREED INC.	\$246,715.65	78.5%
5	DAVID&MIMIS INC	\$211,193.76	67.7%
6	ESPINOZA YARD LLC	\$295,231.23	90.0%
7	FLOYD INC.	\$147,635.76	38.8%
8	GRACE WARE LLC	\$224,816.89	75.7%
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.3%
10	NGUYEN INSTITUTE	\$294,923.13	85.3%

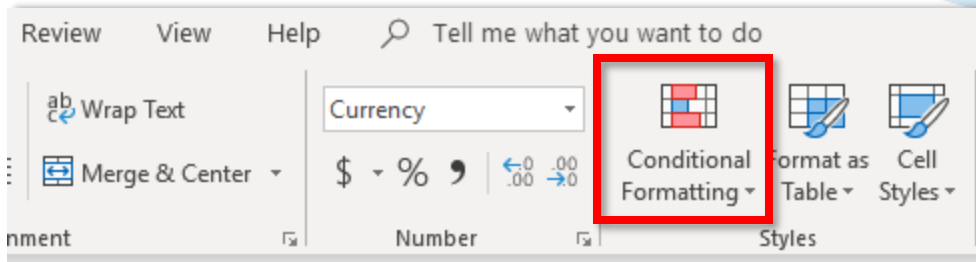
2. Navigate to the **Home** tab.



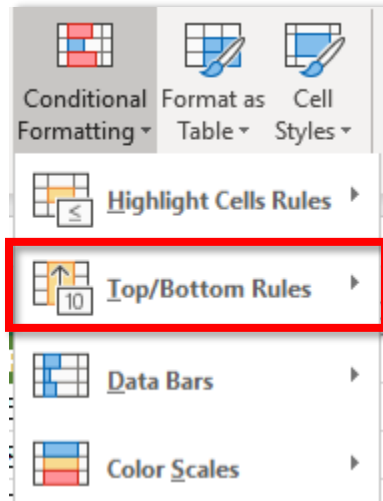
3. Locate the **Styles** group.



4. Select the **Conditional Formatting** command to display a drop-down menu.



5. In the drop-down menu, select the **Data Bars** option.



6. The **Data Bars** option will display a gallery of bar types that you can choose one. Select the color scheme of your choice.



If you properly added the **Data Bars** you'll see these applied to the data in your table.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2%
3	BASIC TEES, LLC	\$131,281.65	36.6%
4	DAN & CRADSTREED INC.	\$246,715.65	78.5%
5	DAVID&MIMIS INC	\$211,193.76	67.7%
6	ESPINOZA YARD LLC	\$295,231.23	90.0%
7	FLOYD INC.	\$147,635.76	38.8%
8	GRACE WARE LLC	\$224,816.89	75.7%
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.3%

Color Scales

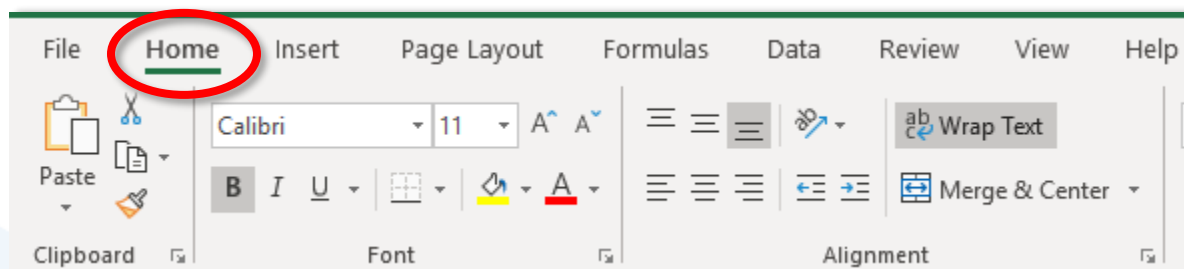
Color Scales is a function in Excel that allows you to apply a color gradient to a range of cells. Basically, Excel will highlight each cell with one of three colors, representing where that cell falls in comparison to the other cells. You can almost think of it as one color represents the bottom third, another color represents the middle third and another color represents the top third. Excel allows you to choose the color combinations.

To use **Color Scales**:

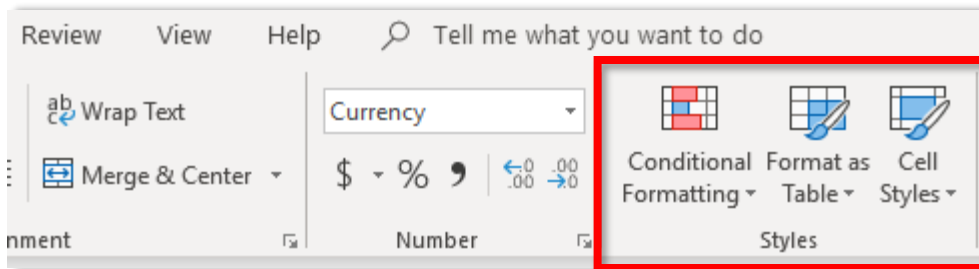
1. Select the range or columns where you want to apply the data bars.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2%
3	BASIC TEES, LLC	\$131,281.65	36.6%
4	DAN & CRADSTREED INC.	\$246,715.65	78.5%
5	DAVID&MIMIS INC	\$211,193.76	67.7%
6	ESPINOZA YARD LLC	\$295,231.23	90.0%
7	FLOYD INC.	\$147,635.76	38.8%
8	GRACE WARE LLC	\$224,816.89	75.7%
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.3%
10	NGUYEN INSTITUTE	\$294,923.13	85.3%

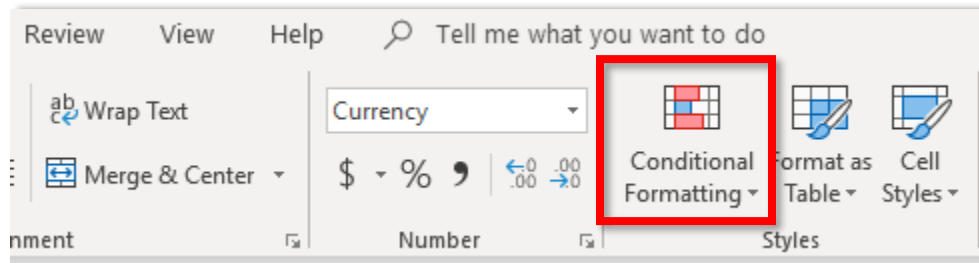
2. Navigate to the **Home** tab.



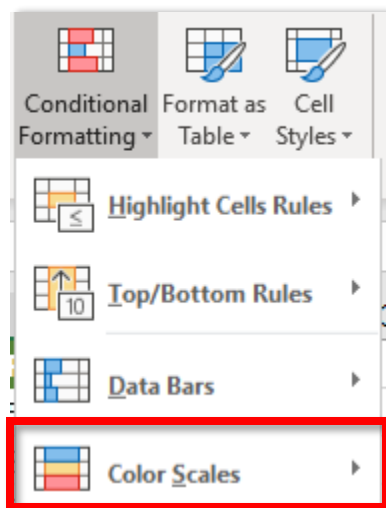
3. Locate the **Styles** group.



4. Select the **Conditional Formatting** command to display a drop-down menu.



5. In the drop-down menu, select the **Color Scales** option.



6. The **Color Scales** option will display a gallery with different type of colors that you can use to represent a scale. Select the color scheme of your choice from this drop-down menu.



Once you select the **Color Scales** your cells will be highlighted in color based on a predetermined scale that Excel applied.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2%
3	BASIC TEES, LLC	\$131,281.65	36.6%
4	DAN & CRADSTREED INC.	\$246,715.65	78.5%
5	DAVID&MIMIS INC	\$211,193.76	67.7%
6	ESPINOZA YARD LLC	\$295,231.23	90.0%
7	FLOYD INC.	\$147,635.76	38.8%
8	GRACE WARE LLC	\$224,816.89	75.7%
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.3%

Icon Sets

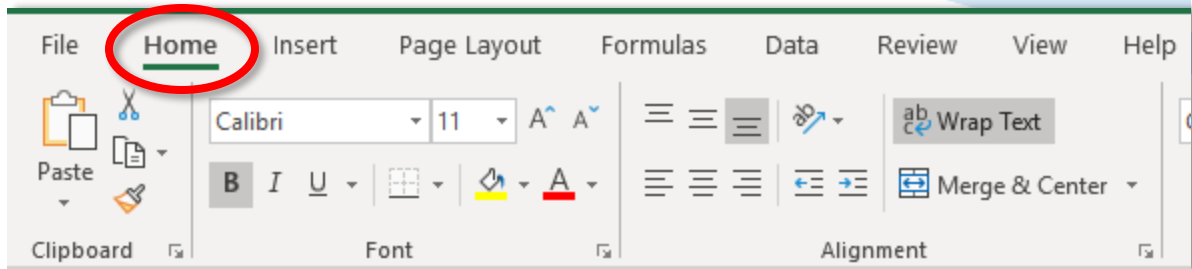
Icon Sets works more or less the same way as the **Color Scales**, but instead of using colors to highlight cells that represent certain milestones, this option uses icons. For example, instead of highlighting the bottom third with a red color, you can choose to include a down arrow instead.

To use **Icon Sets**:

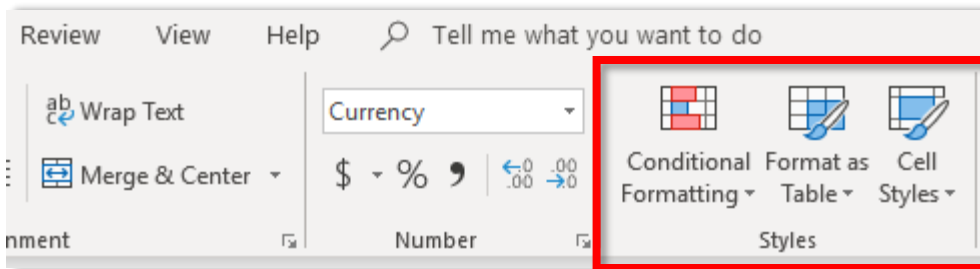
1. Select the range or columns where you want to apply the data bars.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2%
3	BASIC TEES, LLC	\$131,281.65	36.6%
4	DAN & CRADSTREED INC.	\$246,715.65	78.5%
5	DAVID&MIMIS INC	\$211,193.76	67.7%
6	ESPINOZA YARD LLC	\$295,231.23	90.0%
7	FLOYD INC.	\$147,635.76	38.8%
8	GRACE WARE LLC	\$224,816.89	75.7%
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.3%
10	NGUYEN INSTITUTE	\$294,923.13	85.3%

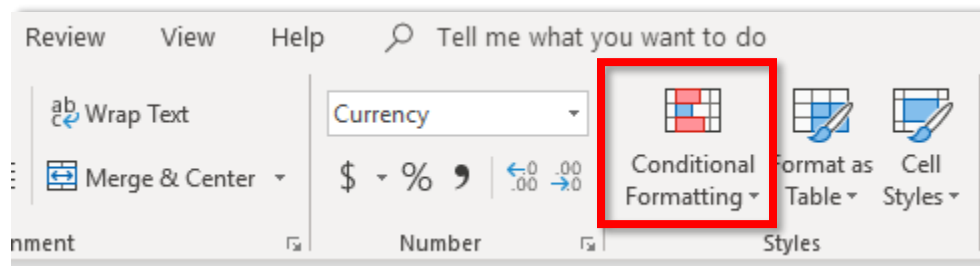
2. Navigate to the **Home** tab.



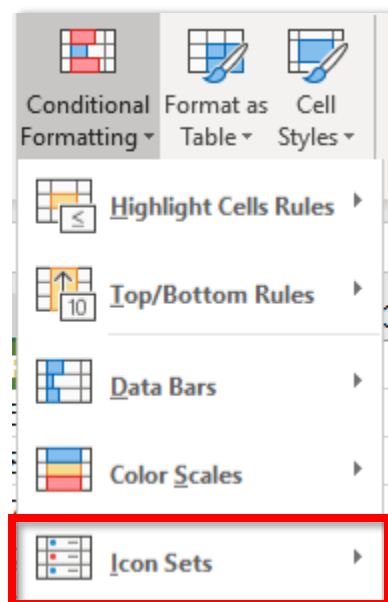
3. Locate the **Styles** group.



4. Select the **Conditional Formatting** command to display a drop-down menu.



5. In the drop-down menu, select the **Icon Sets** option.



- The **Icon Sets** option will display a gallery of icons that you can choose to be displayed directly in the cells that you selected. Choose the icons that best fit your



need.

Once you select the **Icon Sets**, Excel will display the icons directly on the cells that represent the scale selected.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	ABC DISTRIBUTION CENTER INC.	\$84,092.50	↓ 20.2%
3	BASIC TEES, LLC	\$131,281.65	↓ 36.6%
4	DAN & CRADSTREED INC.	\$246,715.65	↗ 78.5%
5	DAVID&MIMIS INC	\$211,193.76	↗ 67.7%
6	ESPINOZA YARD LLC	\$295,231.23	↑ 90.0%
7	FLOYD INC.	\$147,635.76	↓ 38.8%
8	GRACE WARE LLC	\$224,816.89	↗ 75.7%
9	ITALIANO BISTRO FRANCHISE	\$109,443.01	↓ 25.3%

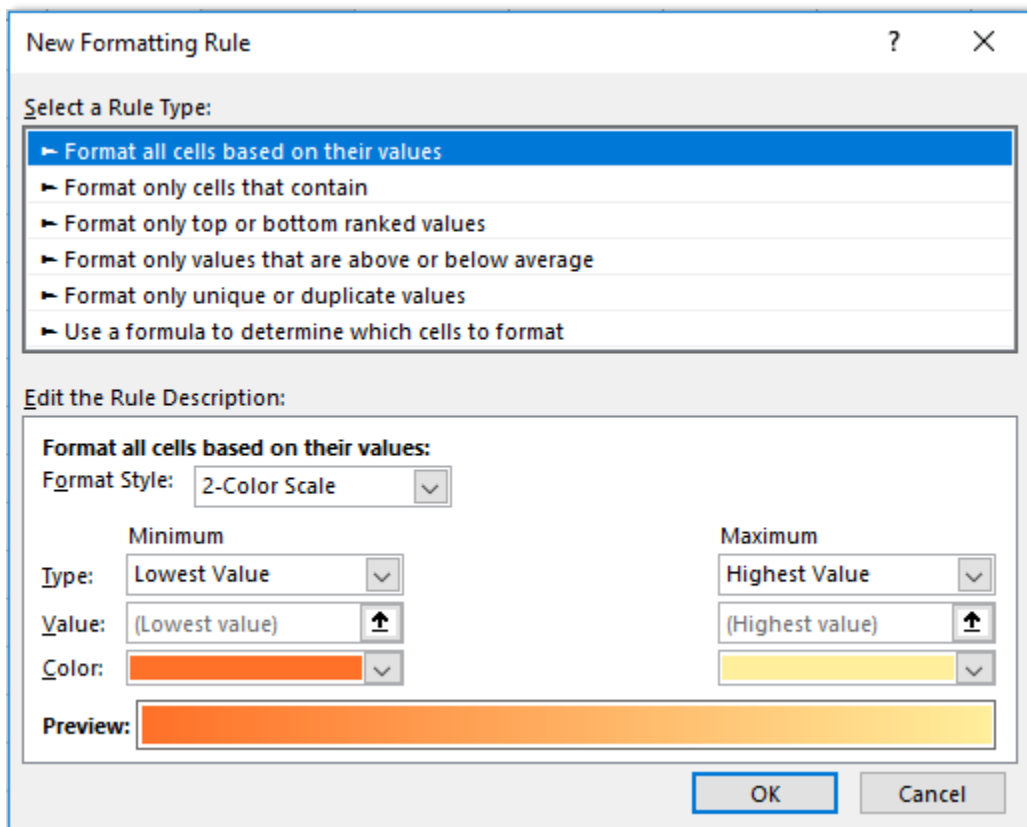
New Rules & More Rules

The Conditional Formatting function allows you to create your own rules and highlight (or color or use icons) the cells with the conditions you specify. If you understand how the rules work, you can use the *New Rules* option in the Conditional Formatting drop-down menu to create a rule.

Excel makes it easy to start this process by allowing you to select a rule type (which is essentially the rules we described in the *Highlight Cell Rules* section of this booklet).

At the bottom of the window, you can edit the Rule description and format the cells in any of the ways we just described. For example, you can create a rule for those amounts that are above average and change the Format Style to data bars.

Whenever you use any of the options for Conditional Formatting, such as *Data Bars* or *Top/Bottom 10*, there is an option at the bottom of the dropdown-menu that allows you to see More Rules. The More Rules option works just like the Create Rules option, but the More Rules option defaults to the type of rule that you selected. Therefore, if I choose to use *Icon Sets* and select More Rules, I will be prompted to choose my conditions for the *Icon Sets*.



New Formatting Rule

Select a Rule Type:

- Format all cells based on their values
- Format only cells that contain
- Format only top or bottom ranked values
- Format only values that are above or below average
- Format only unique or duplicate values
- Use a formula to determine which cells to format

Edit the Rule Description:

Format all cells based on their values:

Format Style: 2-Color Scale

Minimum		Maximum	
Type:	Lowest Value	Type:	Highest Value
Value:	(Lowest value)	Value:	(Highest value)
Color:	Orange	Color:	Yellow

Preview: [Orange to Yellow Gradient Bar]

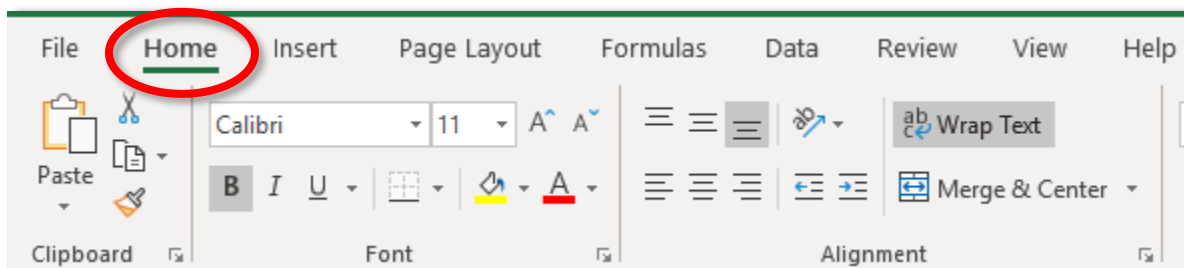
OK Cancel

How to Clear Rules

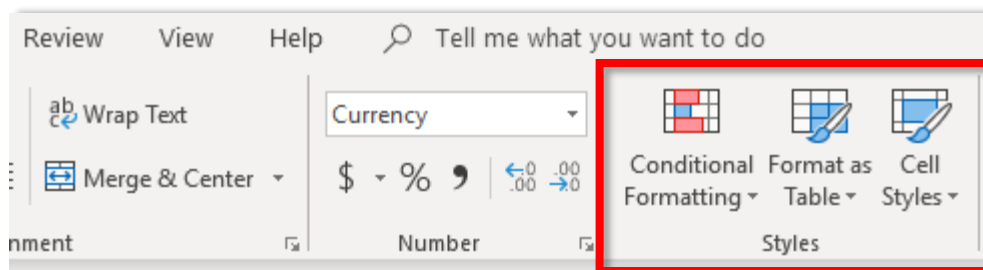
If you created any rules by using any of the **Conditional Formatting** options, you have the option to remove the rule if you no longer want to use it.

To remove your **Conditional Formatting** rule(s):

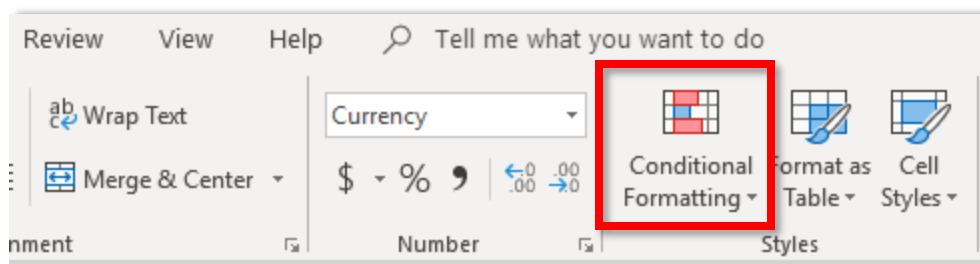
1. Navigate to the **Home** tab.



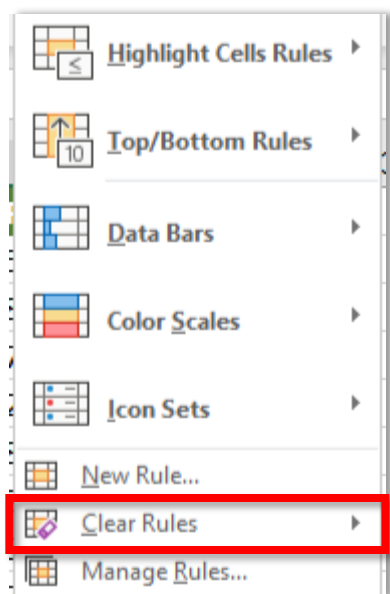
2. Locate the **Styles** group.



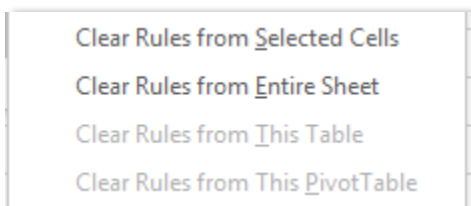
3. Select the **Conditional Formatting** command to display a drop-down menu.



4. In the drop-down menu, select the **Clear Rules** option.



- Once you select the **Clear Rules** option, you will notice a submenu where you get to decide if you want to remove rules from selected cells, a table or the entire spreadsheet. Select one of these options.

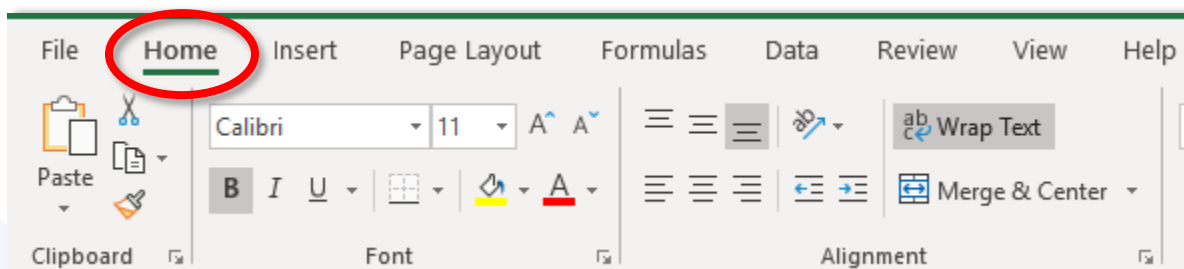


How to Manage Rules

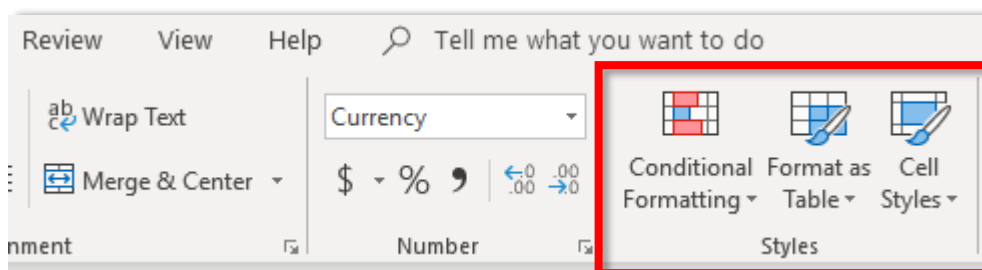
Excel also gives you the option to edit rules you created with **Conditional Formatting**. This process is simple because you'll be able to edit certain aspects of your rules (such as the range, the style, etc.).

To edit or manage your **Conditional Formatting** rules:

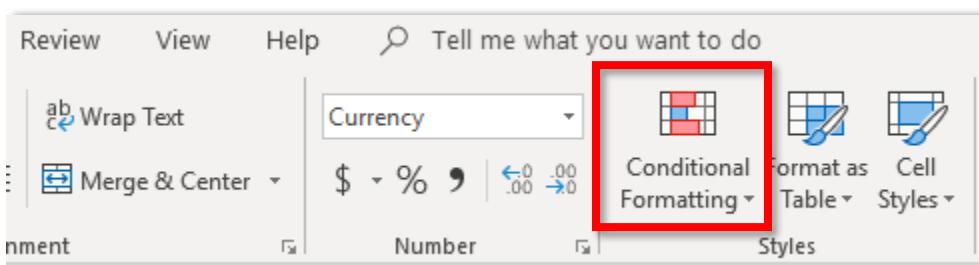
- Select the area where you have created or applied rules for **Conditional Formatting**.
- Navigate to the **Home** tab.



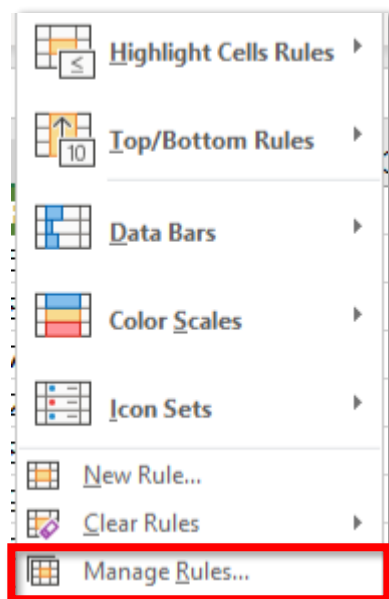
3. Locate the **Styles** group.



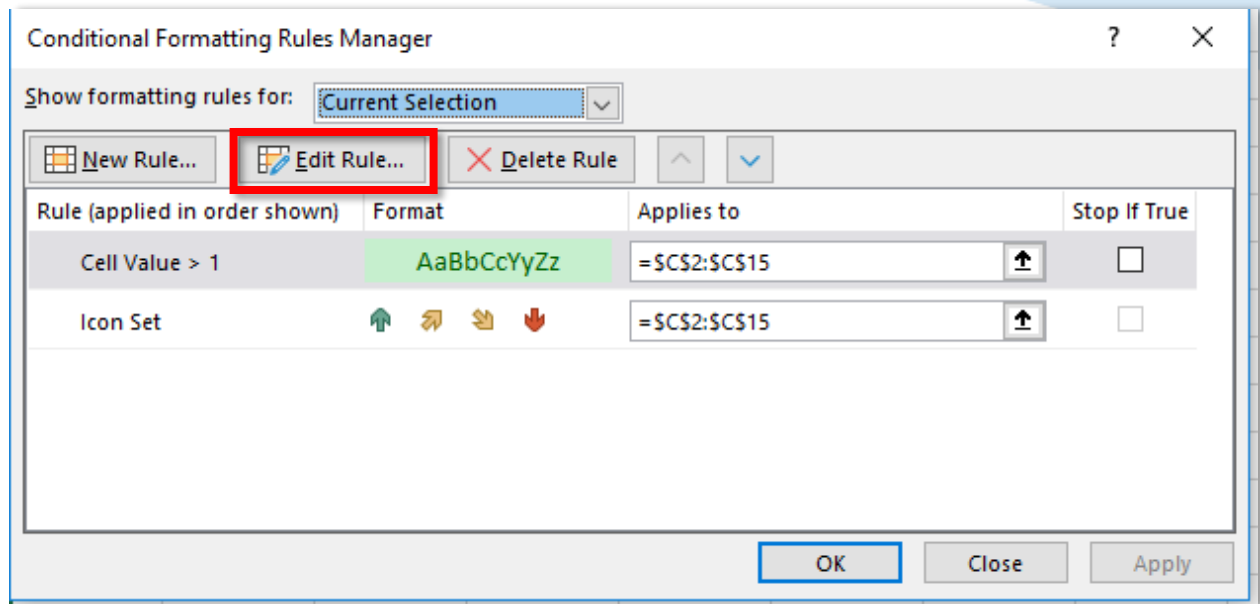
4. Select the **Conditional Formatting** command to display a drop-down menu.



5. In the drop-down menu, select the **Manage Rules...** option.

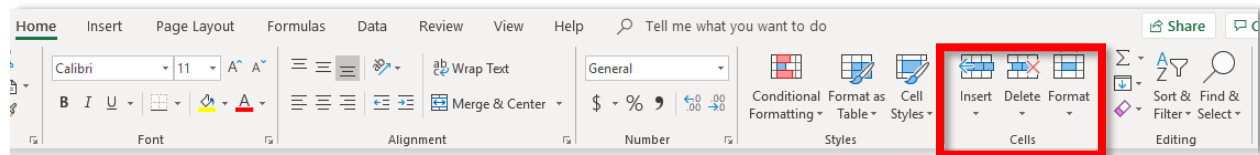


6. Once you select the **Manage Rules...** option, you will have the ability to change the rule by clicking on the **Edit Rule** button in the top section.



The Cells Group

The Cells group is a section in the Home tab that will be very useful when using Excel. Although, not too many people use this section, a lot of people do use those functions. This is because there are multiple ways to do the same thing in Excel and it's typically easier or faster to do the same thing without using the Cells group. Let's review the Cells group in detail.



Inserting New Cells

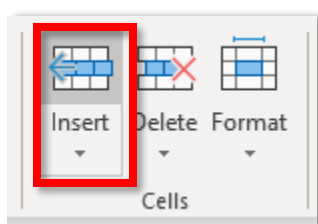
The Insert button is a dropdown menu that allows you to insert new cells, rows, columns or sheets. The first option of the dropdown menu is the Insert Cells option, which allows you to add a single cell to your document.

To insert a new cell into your spreadsheet:

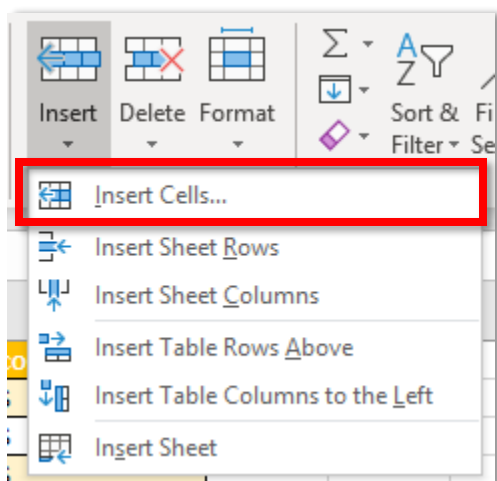
1. Select the cell (or area) where you want to insert your new cell.

	A	B	C
1	Customer Last Name ▼	Customer First Name ▼	Date of Cancellation ▼
2	Dominguez	Barbara	3-Jan
3	Anthony	Rob	1-Feb
4	Williams	Debon	2-Feb
5	Hernandez	Harold	5-Feb
6	Ochoa	Jose	5-Mar
7	Houston	Steven	29-Apr

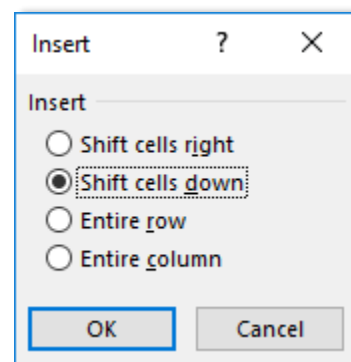
2. Click on the **Insert** command of the **Cells** group to display a menu of options.



3. From the drop-down menu, select the **Insert Cells...** option.



4. Selecting the **Insert Cells...** option will trigger a window. This is because Excel wants to know where it should shift the rest of the data. Select the option of your choice and click **OK**.



If you followed the steps correctly you will notice a single blank cell appearing in your spreadsheet.

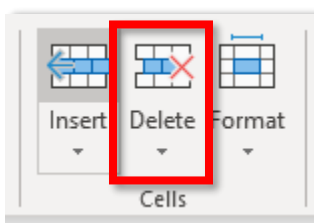
Deleting Cells

To remove a cell from your spreadsheet:

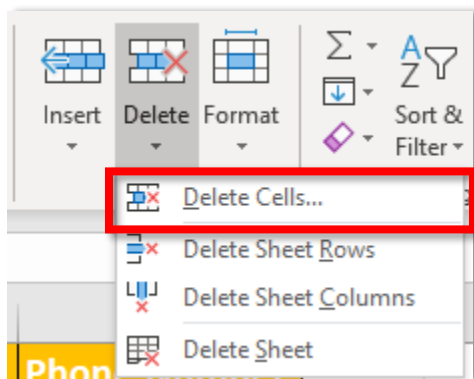
1. Select the cell(s) you want to delete.

	A	B	C
1	Contact Person	Social Security Number	Account Number
2	Dominguez, Barbara	904-58-5448	161778
3	Dominguez, Barbara	904-58-5448	161778
4	Anthony, Rob	655-84-6444	788491
5	Williams, Debon	378-29-3448	367918
6	Williams, Debon	378-29-3448	367918
7	Hernandez, Harold	176-32-4664	289512

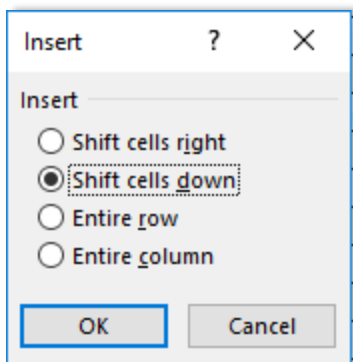
2. In the **Cells** group, select the **Delete** command.



3. From the **Delete** drop-down menu, select the **Delete Cells...** option.



4. In the pop-up window, select how you want Excel to rearrange the rest of your data within your spreadsheet and click **OK**.



Inserting Rows & Columns

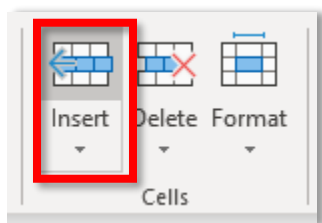
Many times, you might be working on a table and realize that you need to add more information in between the data you have already completed. In this case, it might be best to insert a completely new row or column instead of a single cell.

To insert a row or column:

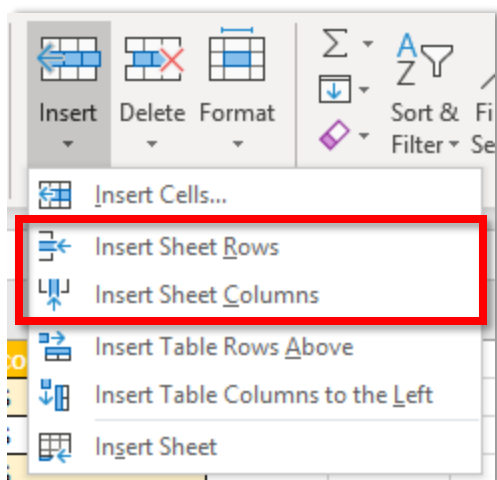
1. Select the column *letter* or the row *number* of where you want the new column or row.

	A	B	C
1	Customer Last Name	Customer First Name	Date of Cancellation
2	Dominguez	Barbara	3-Jan
3	Anthony	Rob	1-Feb
4	Williams	Debon	2-Feb
5	Hernandez	Harold	5-Feb
6	Ochoa	Jose	5-Mar
7	Houston	Steven	29-Apr

2. Click on the **Insert** command in the **Cells** group.



- From the drop-down menu, select **Insert Sheet Rows** if you are inserting a row or **Insert Sheet Columns** if you are inserting a column.



Once you completed these steps, you will see your new row or column in your spreadsheet.

Deleting Rows & Columns

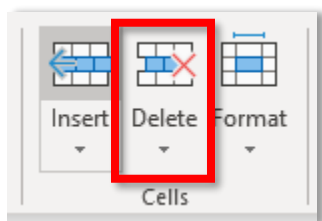
Before you decide to permanently remove an entire row or column (or rows and columns), decide if you'll need the data. An alternative to deleting a row or a column would be to hide it (which will be covered later in this booklet).

To remove rows or columns:

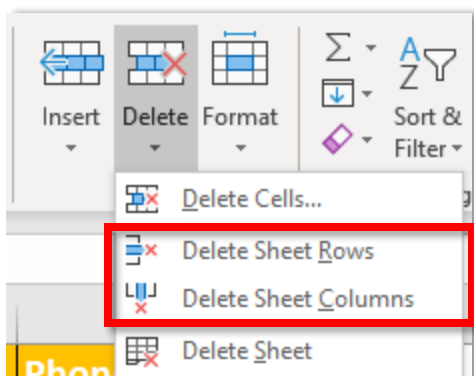
- Select the rows or columns you want to permanently delete.

	A	B	C	D
1	Contact Person	Social Security Number	Account Number	Account Name
2	Dominguez, Barbara	904-58-5448	161778	Howard & Son Inc.
3	Dominguez, Barbara	904-58-5448	161778	Howard & Son Inc.
4	Anthony, Rob	555-84-6444	788491	The Getaway Franchise
5	Williams, Debon	878-29-3448	367918	Steele Plumbing Inc.
6	Williams, Debon	878-29-3448	367918	Steele Plumbing Inc.
7	Hernandez, Harold	176-32-4664	289512	Loma Linda Unified School District

- From the **Cells** group, select the **Delete** command.



- From the **Delete** drop-down menu, select to **Delete Sheet Rows** or **Delete Sheet Columns**



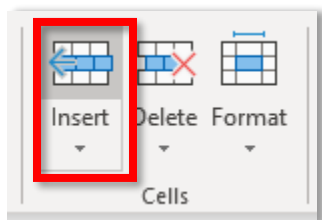
Once you delete your rows or columns, the data will disappear from your table.

Inserting New Sheets

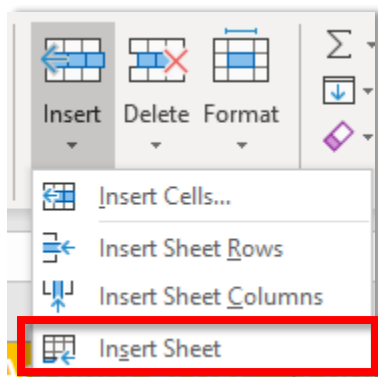
Excel typically allows you to work in one spreadsheet per workbook. If you are using an older version of Excel, you may have three sheets to work with. However, there may be instances in which you need to create a new spreadsheet.

To insert a new sheet:

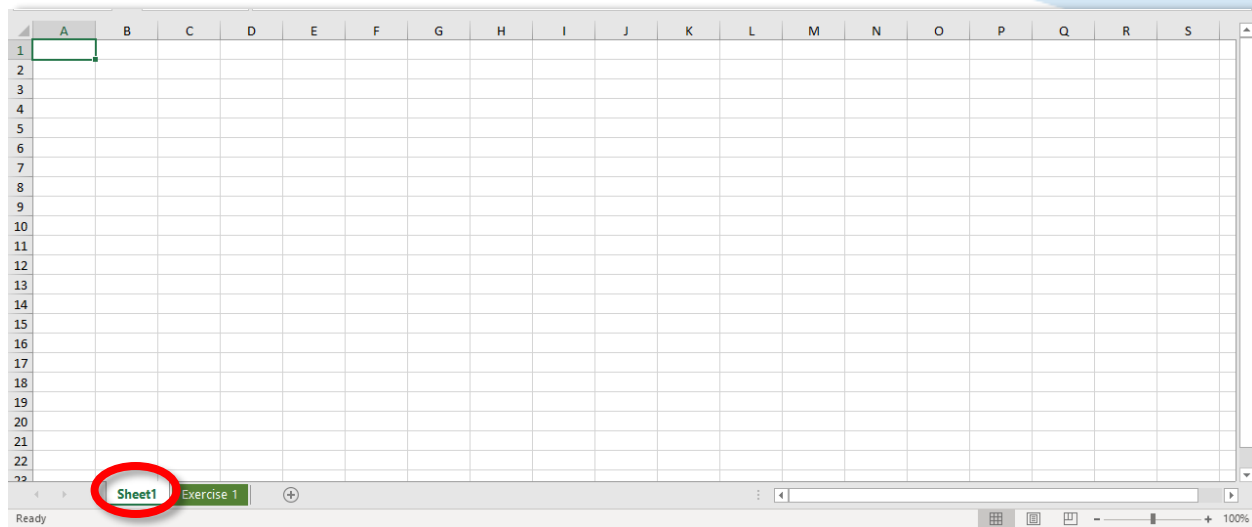
- Click on the **Insert** command in the **Cells** group.



- From the **Insert** drop-down menu select the **Insert Sheet** option



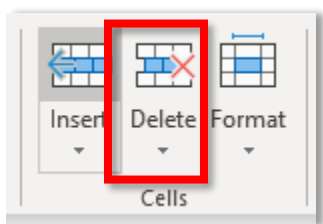
- You can now use your new sheet.



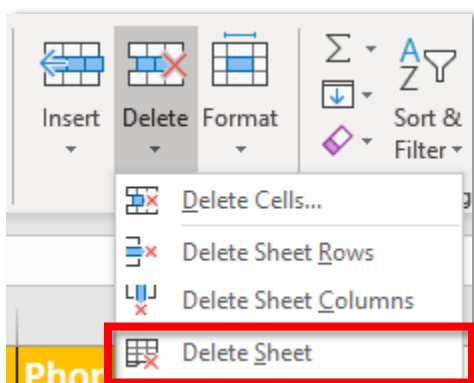
Deleting Sheets

To delete an entire spreadsheet:

1. Make sure you are viewing the sheet you want to permanently delete.
2. In the **Cells** group, select the **Delete** command.



3. From the **Delete** drop-down menu, select the **Delete Sheet** option.



Adjusting the Cell Size

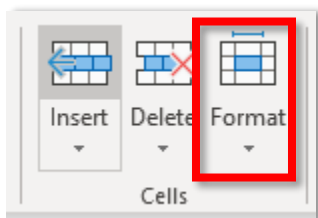
Previously, you learned how to adjust the height of a row and the width of a column. In Excel, there are multiple ways to do the same function. In this section, you'll learn how to adjust the sizes by using the ribbon.

To adjust the height of a row or width of a column:

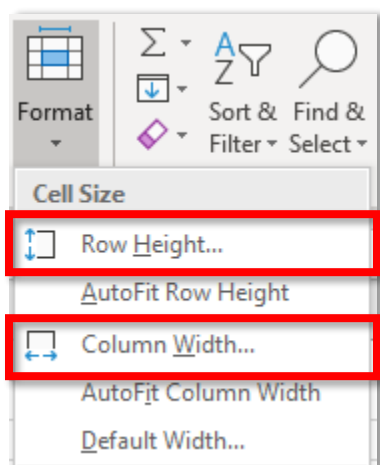
1. Select the column(s) or rows whose width or height you want to adjust, respectively.

	A	B	C	D
1	Customer Last Name	Custor	Date o	Accou
2	Dominguez	Barbar	3-Jan	46941
3	Anthony	Rob	1-Feb	42897
4	Williams	Debon	2-Feb	19751
5	Hernandez	Harold	5-Feb	87321
6	Ochoa	Jose	5-Mar	25829
7	Houston	Stever	#####	29520

2. From the **Cells** group, select the **Format** command.

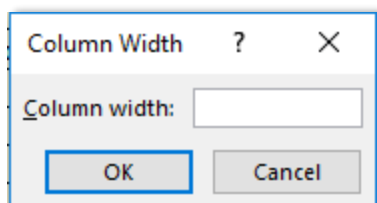


3. In the **Format** drop-down menu, select either the **Row Height...** option or the **Column Width...** option



4. After selecting an option from the drop-down menu, Excel will prompt you to manually enter the height or width of your row or column, respectively. Enter the number in the box provided and select After selecting an option from the drop-

down menu, Excel will prompt you to manually enter the height or width of your row or column, respectively. Enter the number in the box provided and select **OK**.



Once you completed these steps, your cells will adjust.

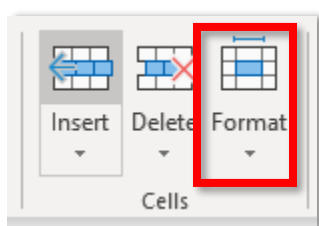
	A	B	C	D
1	Customer Last Name	Customer First Name	Date of Cancellation	Account ID
2	Dominguez	Barbara	3-Jan	46941
3	Anthony	Rob	1-Feb	42897
4	Williams	Debon	2-Feb	19751
5	Hernandez	Harold	5-Feb	87321
6	Ochoa	Jose	5-Mar	25829
7	Houston	Steven	29-Apr	29520

Hiding & Unhiding Columns, Rows and Sheets

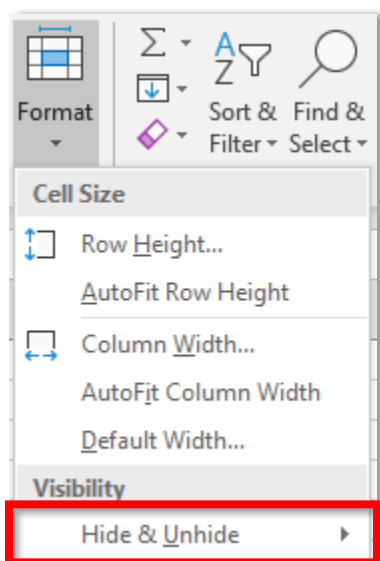
You may run into a situation where you don't want to delete a sheet, row or a column but wish it would not be visible. In this case, you can use the Hide function of Excel which is also found in the Format button drop-down menu. However, use the Hide functions with caution. Many times, users forget that they hid things in Excel, especially when sharing files with others. There is an alternative to hiding columns or rows which we will cover later in this booklet.

To hide or unhide sheets, columns or rows:

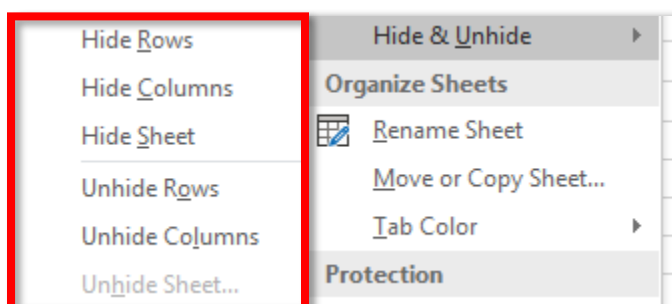
1. Select the sheet, row or column you want to hide.
2. In the **Cells** group, select the **Format** command.



- From the **Format** drop-down menu, select the **Hide & Unhide** option.



- Selecting the **Hide & Unhide** option will display a sub-menu. From the sub-menu select the option to **Hide Rows**, **Hide Columns**, **Hide Sheet** or **Unhide Rows**, **Unhide Columns** or **Unhide Columns**.



If you followed these steps correctly, your sheet, row or column will be hidden. You can unhide your sheet, column or row by following the same steps and selecting the appropriate option.

How to Move Columns or Rows from One Place to Another

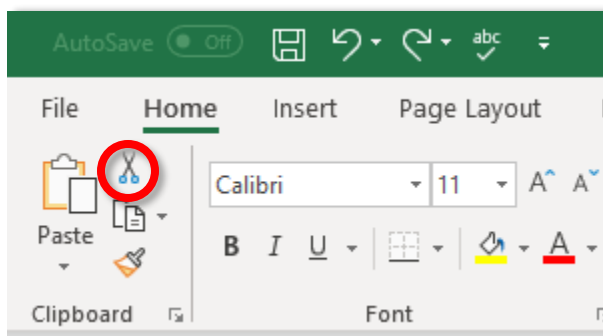
Previously, you learned how to cut and copy ranges of cells and paste them in other areas. You also learned how to create new columns or rows. In this section you'll learn how to move one column from one location on a spreadsheet to another.

To move a column or row from one place to another:

1. First, select the row or column you want to move.

	A	B	C	D	E	F
1	Contact Person	Social Security Number	Account Number	Account Name	Account Active?	Phone Number
2	Dominguez, Barbara	904-58-5448	161778	Howard & Son Inc.	YES	(916) 964 - 3998
3	Dominguez, Barbara	904-58-5448	161778	Howard & Son Inc.	YES	(916) 964 - 3998
4	Anthony, Rob	655-84-6444	788491	The Getaway Franchise	NO	(207) 634 - 9210
5	Williams, Debon	378-29-3448	367918	Steele Plumbing Inc.	YES	(668) 163 - 1740
6	Williams, Debon	378-29-3448	367918	Steele Plumbing Inc.	YES	(939) 945 - 1321
7	Hernandez, Harold	176-32-4664	289512	Loma Linda Unified School District	YES	(411) 677 - 9365

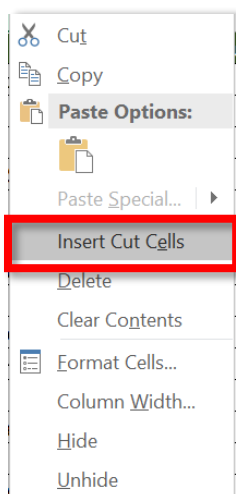
2. Select the **Cut** command from the **Clipboard** group located in the **Home** tab.



3. Select the row or column where you want to place your cut row or column.

	A	B	C	D	E	F
1	Contact Person	Social Security Number	Account Number	Account Name	Account Active?	Phone Number
2	Dominguez, Barbara	904-58-5448	161778	Howard & Son Inc.	YES	(916) 964 - 3998
3	Dominguez, Barbara	904-58-5448	161778	Howard & Son Inc.	YES	(916) 964 - 3998
4	Anthony, Rob	655-84-6444	788491	The Getaway Franchise	NO	(207) 634 - 9210
5	Williams, Debon	378-29-3448	367918	Steele Plumbing Inc.	YES	(668) 163 - 1740
6	Williams, Debon	378-29-3448	367918	Steele Plumbing Inc.	YES	(939) 945 - 1321
7	Hernandez, Harold	176-32-4664	289512	Loma Linda Unified School District	YES	(411) 677 - 9365

4. With your mouse, right-click anywhere in the area where you want to place the contents. After right-clicking, a menu will appear.



5. Select the option **Insert Cut Cells**

Now you'll see that you have just moved the contents of one area in your spreadsheet to another area. Please note that if you were to use the **Paste** option after you cut your cells, the contents would completely override the information that existed there before.

	A	B	C	D	E	F
1	Contact Person	Phone Number	Social Security Number	Account Number	Account Name	Account Active?
2	Dominguez, Barbara	(916) 964 - 3998	904-58-5448	161778	Howard & Son Inc.	YES
3	Dominguez, Barbara	(916) 964 - 3998	904-58-5448	161778	Howard & Son Inc.	YES
4	Anthony, Rob	(207) 634 - 9210	655-84-6444	788491	The Getaway Franchise	NO
5	Williams, Debon	(668) 163 - 1740	378-29-3448	367918	Steele Plumbing Inc.	YES
6	Williams, Debon	(939) 945 - 1321	378-29-3448	367918	Steele Plumbing Inc.	YES
7	Hernandez, Harold	(411) 677 - 9365	176-32-4664	289512	Loma Linda Unified School District	YES

Organizing Your Sheets

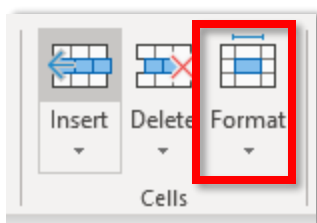
Previously, you used the **Format** command from the **Cells** group. The **Format** command also allows you to organize your sheets. Let's explore how to do this in detail in the following section.

Renaming Your Sheet

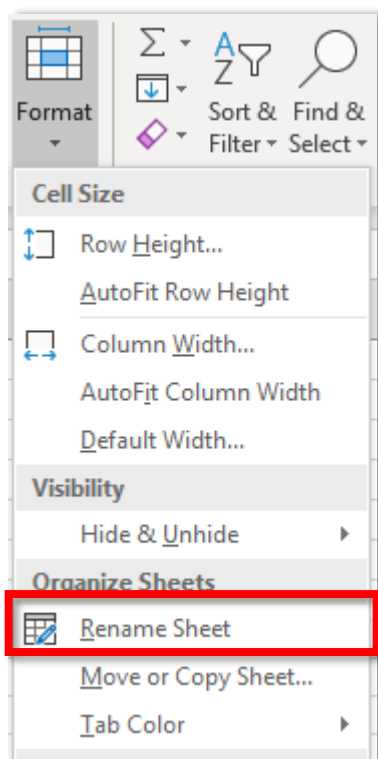
In the beginning of this booklet, you learned that when you create a new Sheet, Excel defaults to name your sheet as *Sheet 1*. You can change the name of the sheet.

To change the name of your sheet:

1. Select the **Format** command located in the **Cells** group.

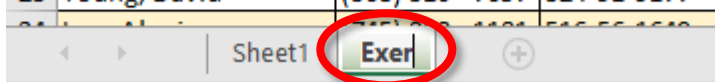


2. From the **Format** drop-down menu, select the **Rename Sheet** option



3. Type the name that you want to give your sheet.

19	Gomez, Peter	(794) 350 - 3095	805-65-6446
20	Mendez, Jorge	(610) 849 - 2593	854-61-1711
21	Aguilera, Jose	(443) 576 - 8008	672-27-4499
22	Alvarado, Alex	(316) 540 - 8857	820-33-3050
23	Young, David	(368) 310 - 7657	324-91-9177

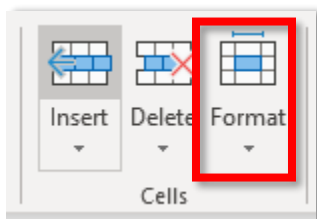


Moving & Copying A Sheet

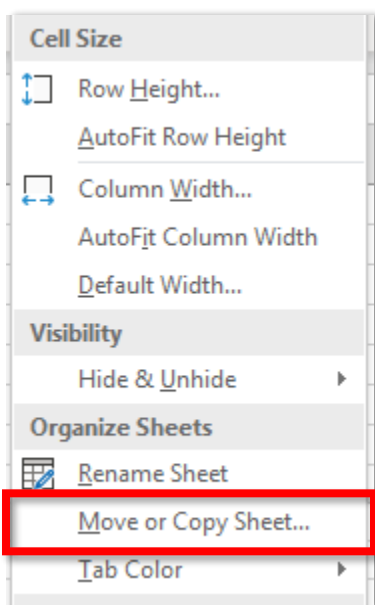
Besides renaming your spreadsheet, you can also rearrange the way your sheets are organized.

To move or copy a sheet:

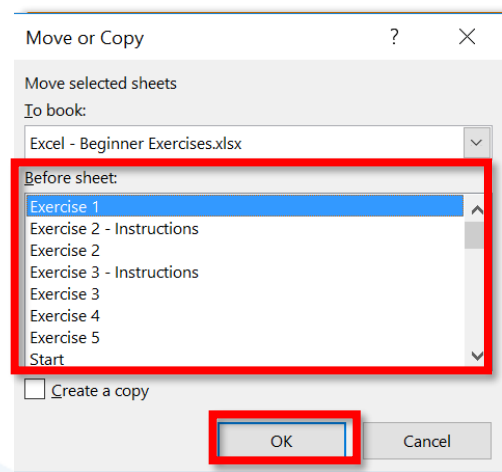
1. Make sure that you are working on the spreadsheet you want to move or duplicate.
2. Select the **Format** command located in the **Cells** group.



3. From the **Format** drop-down menu, select the **Move or Copy Sheet...** option.



4. The **Move or Copy Sheet...** option will trigger a pop-up window. In the *Before Sheet* section of the window, select where you want to place your sheet and press **OK**.



If you want to duplicate the sheet you're working on, then make sure that the **Create a copy** checkbox is checked.

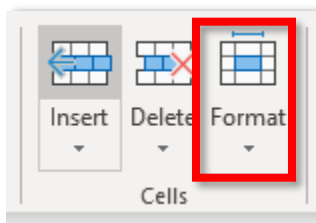
Additionally, you can move or copy sheets to other workbooks as well. Just make sure that the workbook where you want to move your sheet(s) is open so that you can select the file from the dropdown menu at the top (that reads *To book*).

Tab Color

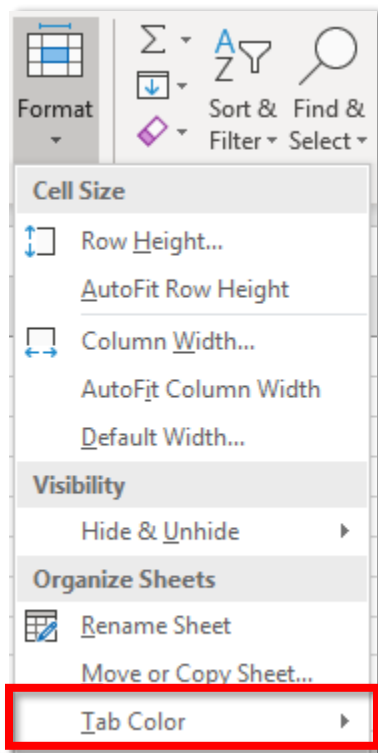
Excel also allows you to change the color of your sheet's tab – the way your sheet is displayed at the bottom. By default, Excel gives it a gray color.

To change the color of your sheet's tab:

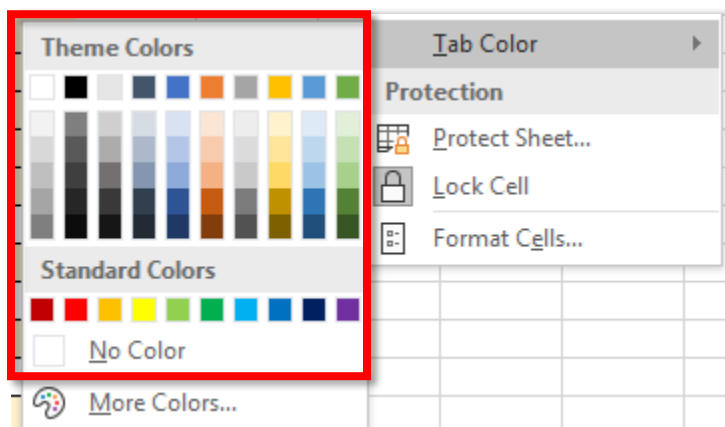
1. Select the **Format** command located in the **Cells** group.



2. From the **Format** drop-down menu, select the **Tab Color** option.

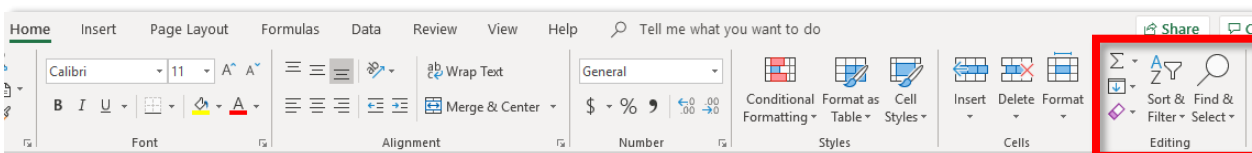


3. The **Tab Color** option will display a gallery of colors. Select the color of your choice to change the color of your sheet's tab.



The Editing Group

Tables can get messy. Nowadays, we work with large tables that contain thousands of entries. The **Editing** group allows you to nicely organize your data.



What is Sorting and why use it?

The Sorting function is one of the most used commands in Excel. It basically lets you organize your table or data, allowing you to dictate a certain order. For example, you can organize your data in the following ways:

1. By date
2. In alphabetical order
3. By the highest or lowest amount
4. By your cells' color

Sorting your entries is important because all the data that follows each entry will be sorted together. In this section, we'll begin exploring the sorting command and the different things you can do in Excel when sorting your data.

How to Sort your Data in Excel

Excel is a smart program and, depending on the type of data that you put in a spreadsheet, Excel will recognize if your information consists of words or numbers. Before you begin sorting your data, make sure that your data has headers. In other words, make sure that your data has labeled each column.

To sort your data in Excel:

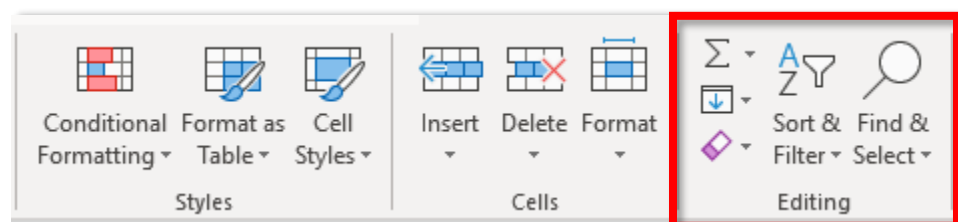
1. Identify how you want to sort your information. In other words, which column will be the source of your sorting.

	A	B	C	D	E
1	Customer Last Name	Customer First Name	Account ID	Account Name	Account Active?
2	Dominguez	Barbara	46941	Howard & Son Inc.	YES
3	Anthony	Rob	42897	Howard & Son Inc.	YES
4	Williams	Debon	19751	The Getaway Franchise	YES
5	Hernandez	Harold	87321	Steele Plumbing Inc.	YES
6	Ochoa	Jose	25829	Steele Plumbing Inc.	YES
7	Houston	Steven	29520	Loma Linda Unified School District	YES

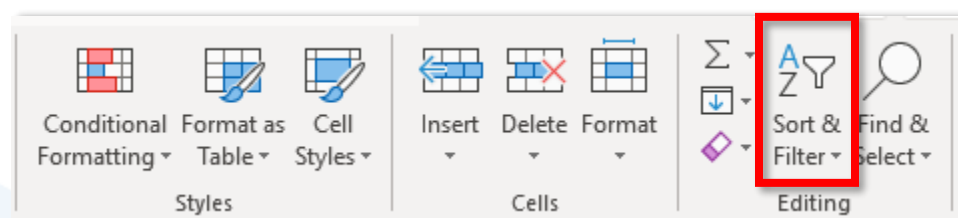
2. In the column that you'll use for sorting, click on any cell in that column *except* for the column header.

	A	B	C	D	E
1	Customer Last Name	Customer First Name	Account ID	Account Name	Account Active?
2	Dominguez	Barbara	46941	Howard & Son Inc.	YES
3	Anthony	Rob	42897	Howard & Son Inc.	YES
4	Williams	Debon	19751	The Getaway Franchise	YES
5	Hernandez	Harold	87321	Steele Plumbing Inc.	YES
6	Ochoa	Jose	25829	Steele Plumbing Inc.	YES
7	Houston	Steven	29520	Loma Linda Unified School District	YES

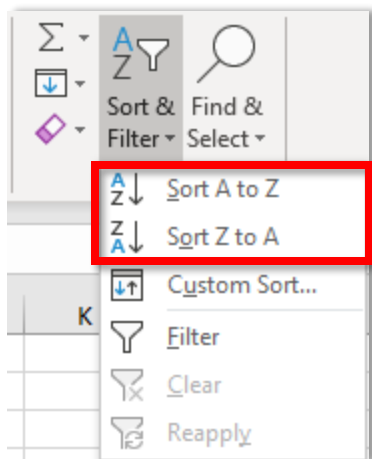
3. Navigate to the **Editing** group in the **Home** tab ribbon.



4. Click on the **Sort & Filter** command.



5. The **Sort & Filter** command will display a drop-down menu. Excel will recognize the data and will allow you to sort your data in alphabetical order, such as 'A to Z' (or ascending order) or 'Z to A' (or descending order). Select the option in which you want to sort your data.



If you followed these steps correctly, you'll find that your data (1) has sorted your data based on your selected criteria and (2) every entry has the correct data in the appropriate cells.

	A	B	C	D	E
1	Customer Last Name	Customer First Name	Account ID	Account Name	Account Active?
2	Aguilar	David	48832	Hut Hut Inn	YES
3	Aguilera	Jose	71285	TheHub.com	YES
4	Alvarado	Alex	84065	RanDeer Partnership	YES
5	Anthony	Rob	42897	Howard & Son Inc.	YES
6	Chin	Jade	41479	Cruz Cruise Ships LLC	YES
7	Christenssen	Heather	40324	Corkie's LLC	YES

Custom Sort

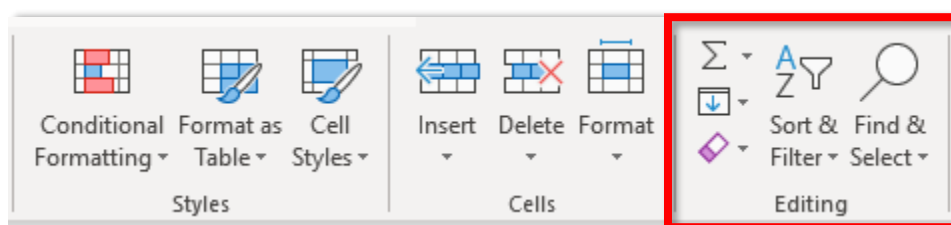
In the previous section, you learned how to sort your data with one criterion. However, there may be instances in which you want to sort your data with multiple criteria, not just one. Excel gives you the flexibility to add as many criteria to your sorting as you need in an organized manner.

To custom sort your data:

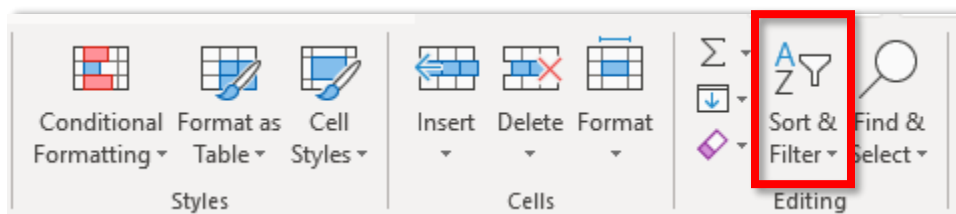
1. Identify how you want to sort your information. In other words, which columns will be the source of your sorting and with what priority.

	A	B	C	D	E
1	Customer Last Name	Customer First Name	Account ID	Account Name	Account Active?
2	Dominguez	Barbara	46941	Howard & Son Inc.	YES
3	Anthony	Rob	42897	Howard & Son Inc.	YES
4	Williams	Debon	19751	The Getaway Franchise	YES
5	Hernandez	Harold	87321	Steele Plumbing Inc.	YES
6	Ochoa	Jose	25829	Steele Plumbing Inc.	YES
7	Houston	Steven	29520	Loma Linda Unified School District	YES

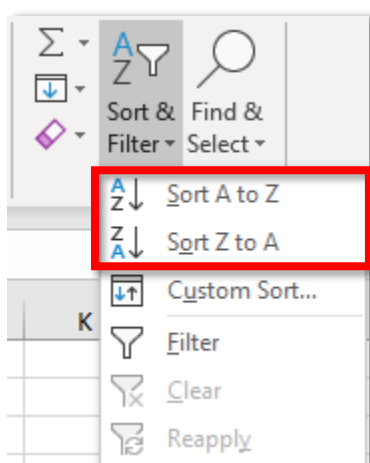
2. Click on any cell within your data
3. Navigate to the **Editing** group in the **Home** tab ribbon.



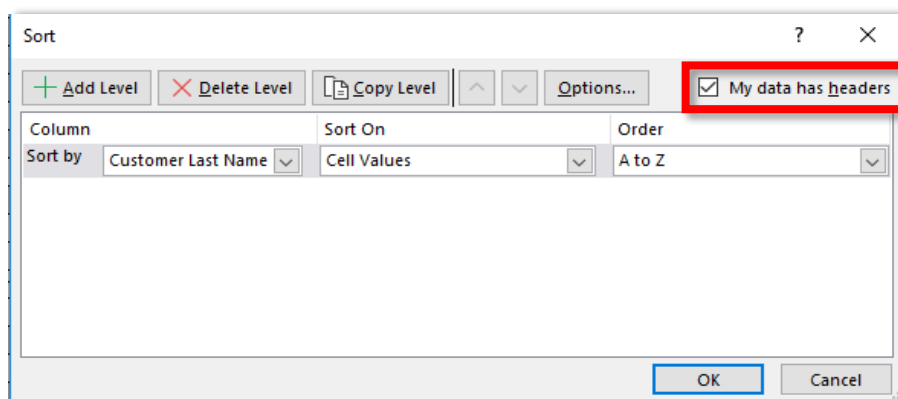
4. Click on the **Sort & Filter** command.



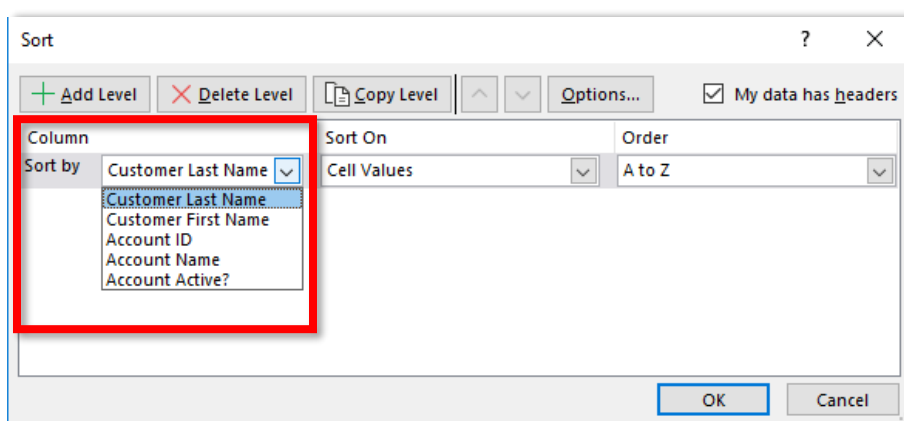
5. The **Sort & Filter** command will display a drop-down menu. Select the **Custom Sort** option.



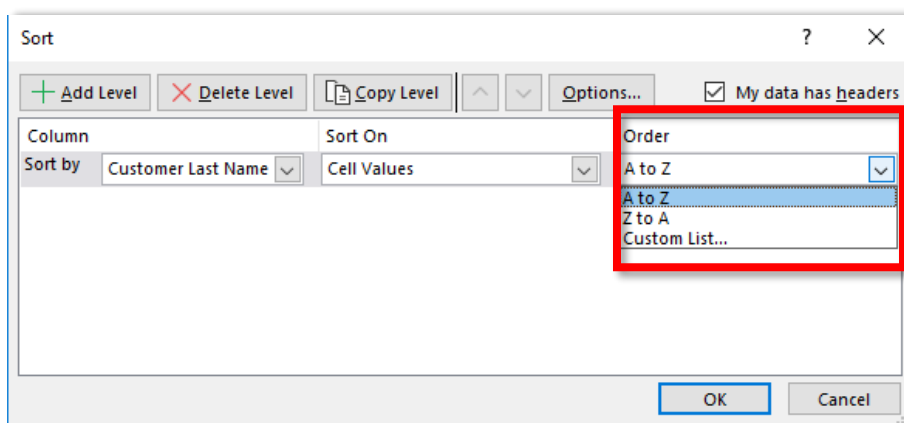
6. Once the **Custom Sort** option is selected, Excel will display a pop-up window. Make sure the **My data has headers** option is checked.



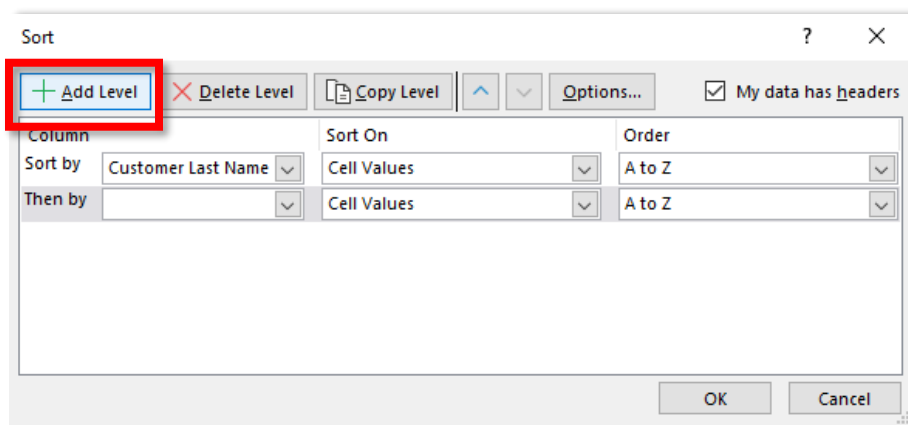
7. Select the column that Excel should sort first by selecting the option from the *Column* section.



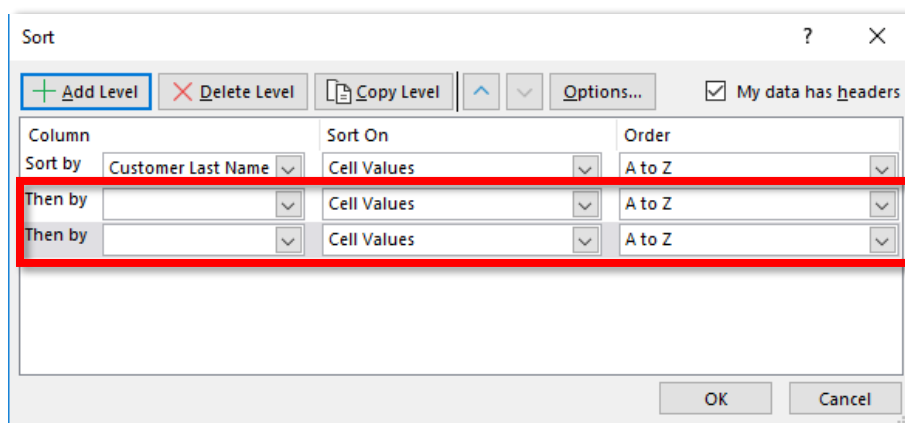
8. Select the sorting order for this first column.



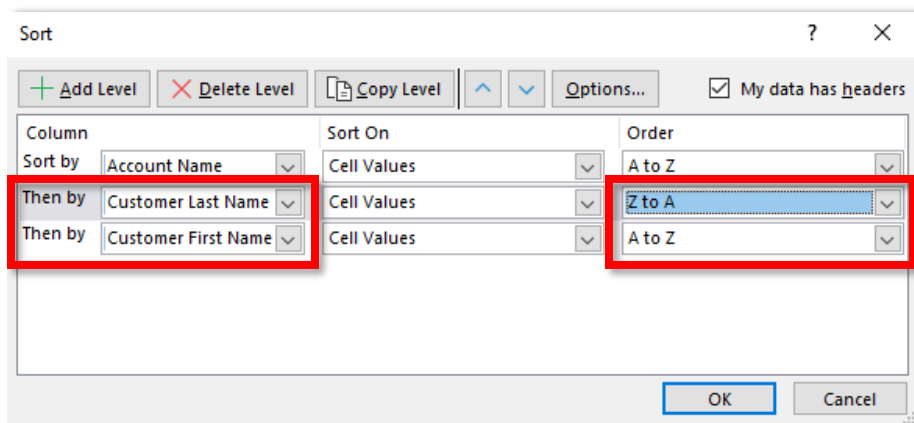
9. To add another level and include more sorting options, click the **Add Level** button in the upper right-hand corner of the window.



10. Once you click on the **Add Level** button, Excel will add another line for you to add an additional column to sort. To add more levels, click the **Add Level** button again.



11. Select the columns you want to sort and make sure to identify the order of the columns in the *Order* section.



12. Press the **OK** button.

If you followed the steps correctly, you'll find that your data has been sorted based on your specific specifications.

	A	B	C	D	E
1	Customer Last Name	Customer First Name	Account ID	Account Name	Account Active?
2	Stevenson	Raymond	86884	ABC Study Group	YES
3	Wilson	Becky	80326	ADA LLC	YES
4	Williams	Hue	66924	Azel Furniture	YES
5	Simpson	David	84894	Azel Furniture	YES
6	Clinton	Todd	91726	Azel Furniture	YES
7	Perez	Vince	95426	Brandy Branding	YES

What Are Filters?

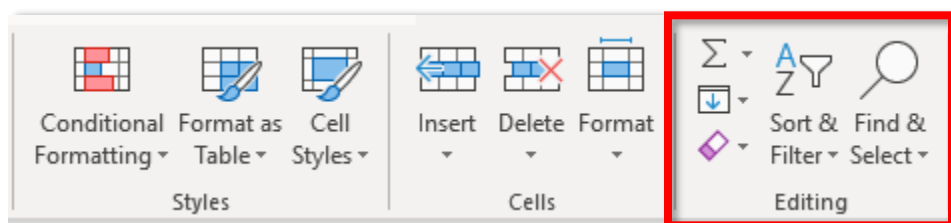
Spreadsheets can contain thousands of entries and at times you may need to analyze or view your data from a different lens. Excel makes this process very easy by adding a feature called **Filters**. **Filters** allow you to isolate the data you want to review or display while *filtering out* the data that you don't want to view.

How to Add Filters to Your Table

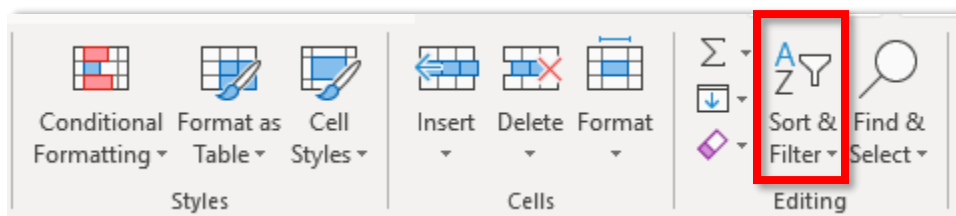
To add filters to your table, you'll first need to organize your data with headers.

Then to add filters to your table:

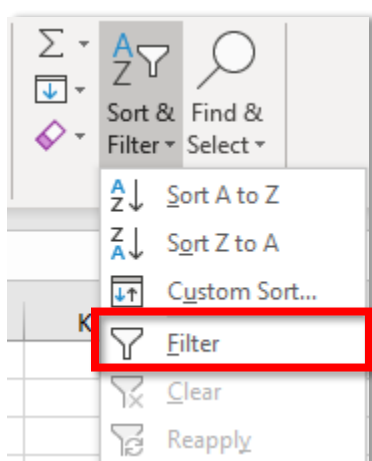
1. Click on any cell within your data.
2. Navigate to the **Editing** group in the **Home** tab ribbon.



3. Click on the **Sort & Filter** command.



4. The **Sort & Filter** command will display a drop-down menu. Select the **Filter** option.



You'll know that you successfully added filters because your headers will now have filter icons displayed.

	A	B	C	D	E
1	Customer Last Name ▼	Customer First Name ▼	Account ID ▼	Account Name	Account Active? ▼
2	Stevenson	Raymond	86884	ABC Study Group	YES
3	Wilson	Becky	80326	ADA LLC	YES
4	Williams	Hue	66924	Azel Furniture	YES
5	Simpson	David	84894	Azel Furniture	YES
6	Clinton	Todd	91726	Azel Furniture	YES
7	Perez	Vince	95426	Brandy Branding	YES

How to Use Filters

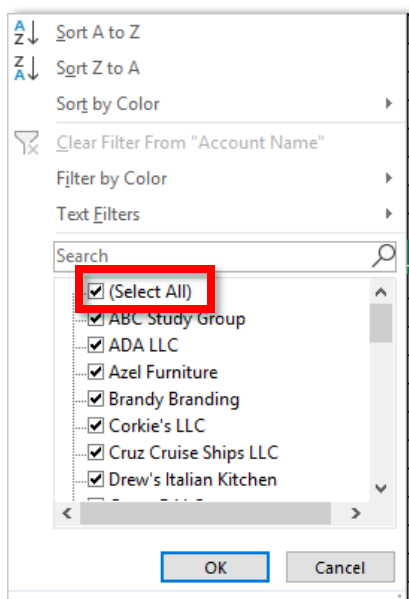
Previously, you learned how to add filters to your data. In this section, you'll learn how to use the filters you just added.

To use filters:

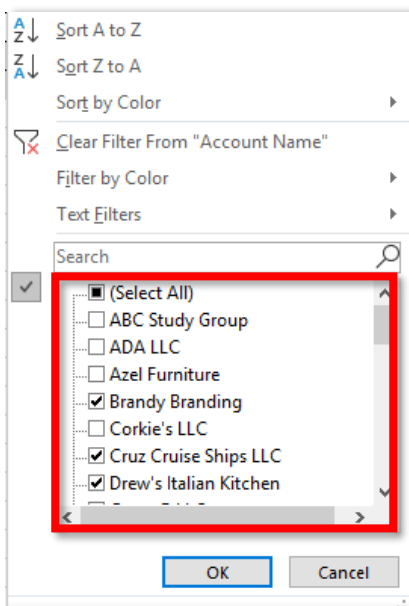
1. Select a filter from a header you want to use and click on the header's filter.

	A	B	C	D	E
1	Customer Last Name ▼	Customer First Name ▼	Account ID ▼	Account Name	Account Active? ▼
2	Stevenson	Raymond	86884	ABC Study Group	YES
3	Wilson	Becky	80326	ADA LLC	YES
4	Williams	Hue	66924	Azel Furniture	YES
5	Simpson	David	84894	Azel Furniture	YES
6	Clinton	Todd	91726	Azel Furniture	YES
7	Perez	Vince	95426	Brandy Branding	YES

- The filter icon will display a drop-down menu. By default, all the data is displayed but you don't want to display all your data since you want to view specific data instead. Uncheck the **Select All** checkbox to unselect all entries.



- Check the boxes for the entries you want Excel to display. The rest of the boxes will remain unchecked.



After you selected your entries, Excel will only display the data you selected. Excel does not remove the data that you didn't check but simply doesn't display it. You can use more than one filter in Excel. You can also tell that your data is filtered because a filter icon will appear in the filtered column.

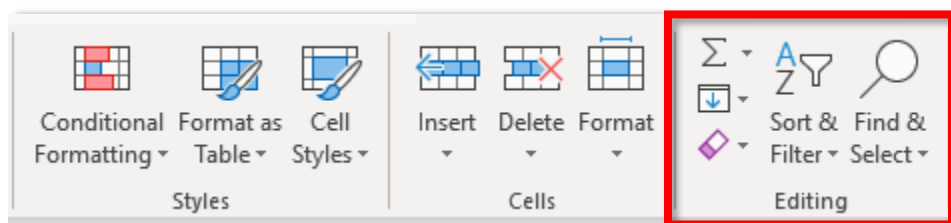
	A	B	C	D	E
1	Customer Last Name ▼	Customer First Name ▼	Account ID ▼	Account Name	Account Active? ▼
7	Perez	Vince	95426	Brandy Branding	YES
9	Chin	Jade	41479	Cruz Cruise Ships LLC	YES
10	Washington	Mario	65373	Drew's Italian Kitchen	YES
43					
44					
45					

How to Unfilter Your Data

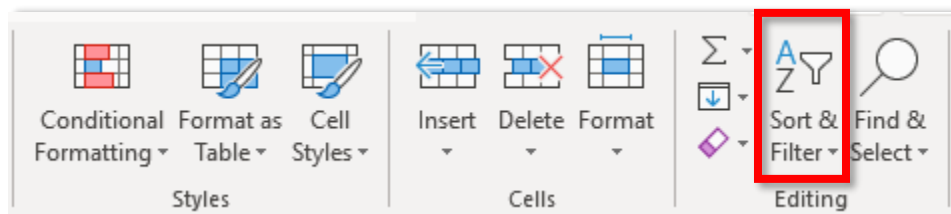
If you want Excel to display all your data instead of just the ones you selected, you will need to *unfilter* your data.

To unfilter your data:

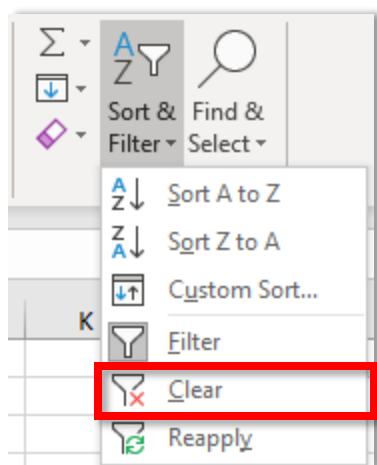
1. Click on any cell within your data.
2. Navigate to the **Editing** group in the **Home** tab ribbon.



3. Click on the **Sort & Filter** command.



4. The **Sort & Filter** command will display a drop-down menu. Select the **Clear** option from the drop-down menu.



Once you select the **Clear** option, all your data entries will display, and your data will no longer be filtered by specific selections.

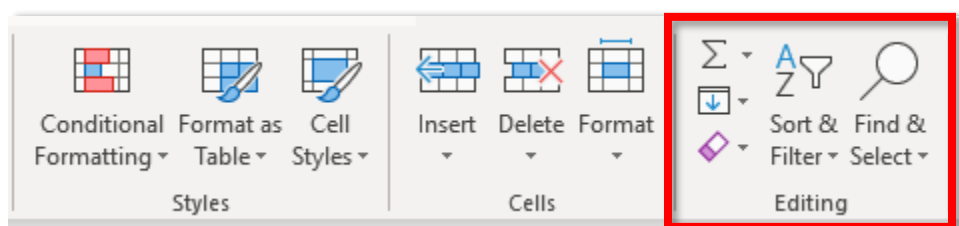
	A	B	C	D	E
1	Customer Last Name ▾	Customer First Name ▾	Account ID ▾	Account Name ▾	Account Active? ▾
2	Stevenson	Raymond	86884	ABC Study Group	YES
3	Wilson	Becky	80326	ADA LLC	YES
4	Williams	Hue	66924	Azel Furniture	YES
5	Simpson	David	84894	Azel Furniture	YES
6	Clinton	Todd	91726	Azel Furniture	YES
7	Perez	Vince	95426	Brandy Branding	YES

How to Remove Filters

You can remove the filters if you no longer want your headers to display them.

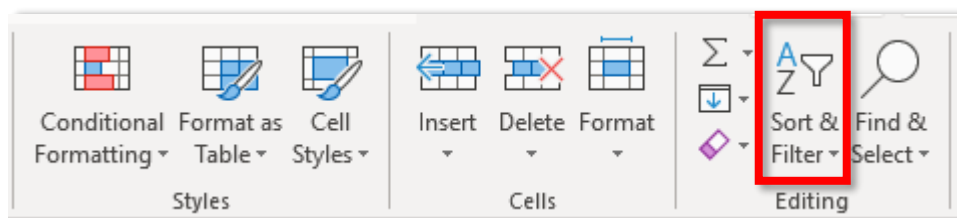
To remove your filters:

1. Click on any cell within your data.

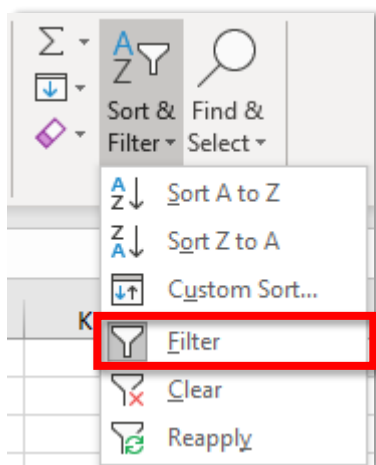


2. Navigate to the **Editing** group in the **Home** tab ribbon.

- Click on the **Sort & Filter** command.



- The **Sort & Filter** command will display a drop-down menu. Un-select the **Filter** option from the drop-down menu.



If you removed your filters from your data correctly, you will no longer see the filter icons in each one of your columns.

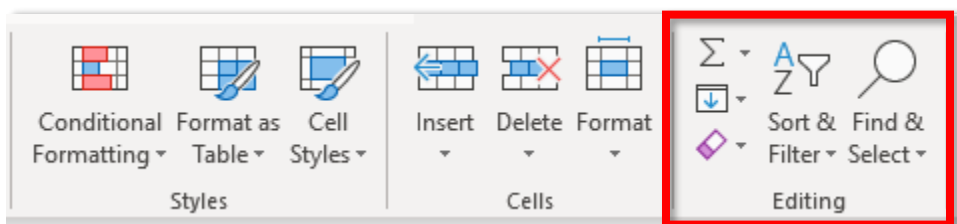
	A	B	C	D	E
1	Customer Last Name	Customer First Name	Account ID	Account Name	Account Active?
2	Stevenson	Raymond	86884	ABC Study Group	YES
3	Wilson	Becky	80326	ADA LLC	YES
4	Williams	Hue	66924	Azel Furniture	YES
5	Simpson	David	84894	Azel Furniture	YES
6	Clinton	Todd	91726	Azel Furniture	YES
7	Perez	Vince	95426	Brandy Branding	YES

The Find Command

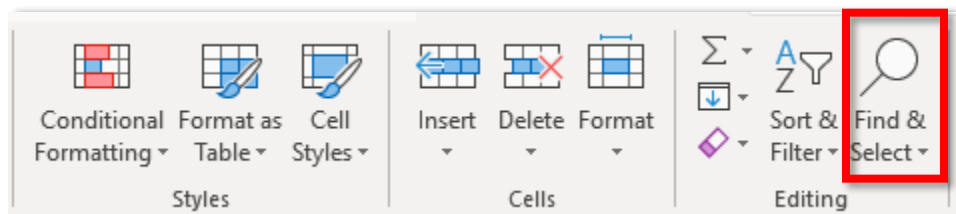
Finding words on a page is a universal functionality provided throughout all types of software, as well as online. The **Find** command is helpful because it allows you to use a search bar to find certain words, numbers or content on a specific page or spreadsheet. Excel allows you to find words, or content, on the current spreadsheet or the entire workbook. The **Find** feature can be accessed in Excel in multiple ways but in this section, you'll learn how to access the **Find** command via the ribbon.

To use the **Find** command:

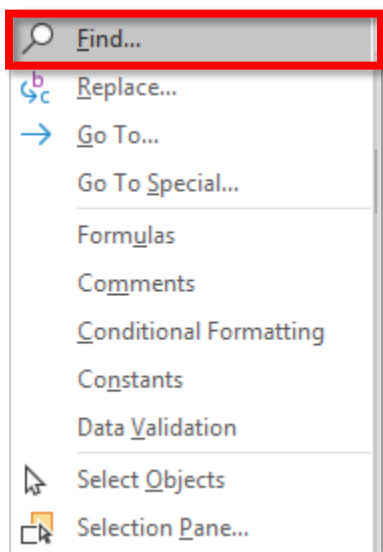
1. Navigate to the **Editing** group in the **Home** tab ribbon.



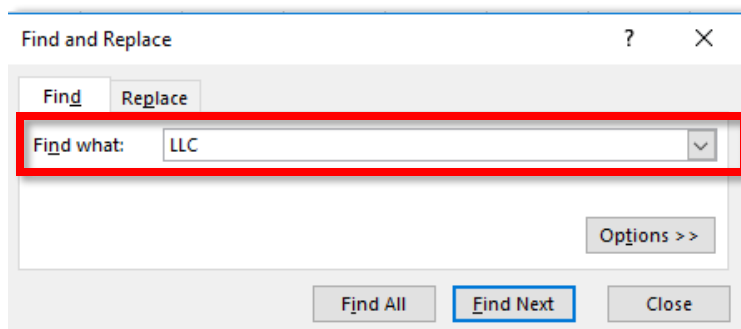
2. Click on the **Find & Select** command.



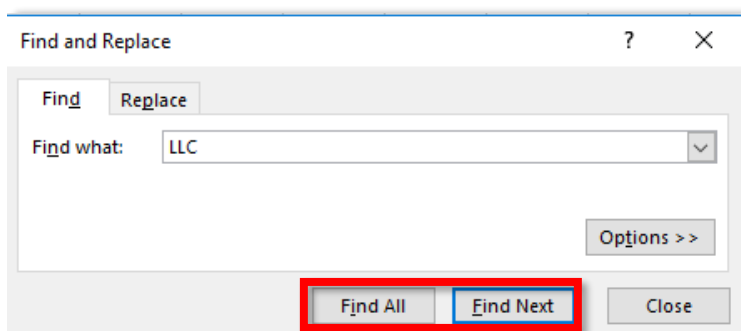
3. Once you click on the **Find & Select** button, you'll have a dropdown menu. Choose the **Find** option.



4. Upon selecting the **Find** option, you will be presented with a pop-up window that closely resembles a search bar you may typically find on the web. In the pop-up bar, type the words, numbers or letters you are looking for in the *Find what* search bar.



- After typing your search words, you then have the option to display a list of all instances where your text is found (by selecting the **Find All** button), or to search each instance of your search individually (by selecting the **Find Next** button).

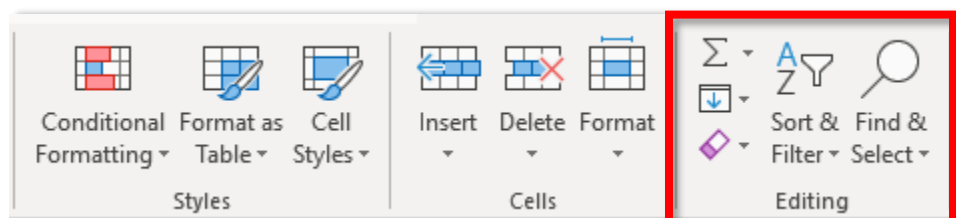


Find & Replace

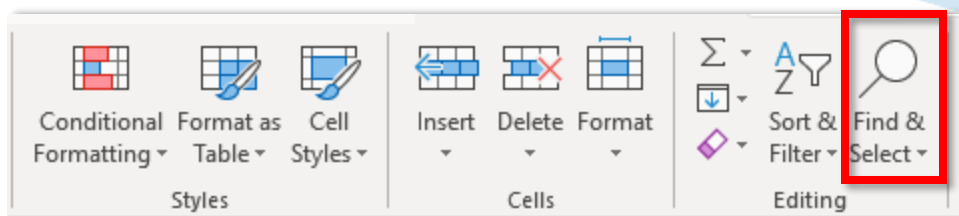
Now that you have learned how to use the **Find** command, there is another command that is typically used with the **Find** function. The **Replace** allows you to replace certain words, texts or numbers with the words, texts or numbers of your choice. In other words, you're telling Excel to find something, and replace it with something else (typically called a *Find & Replace*). The

To use the **Replace** command:

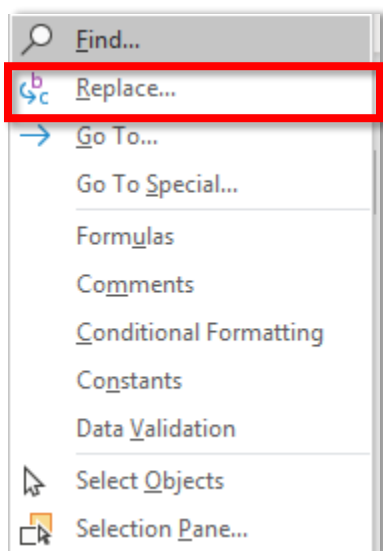
- Navigate to the **Editing** group in the **Home** tab ribbon.



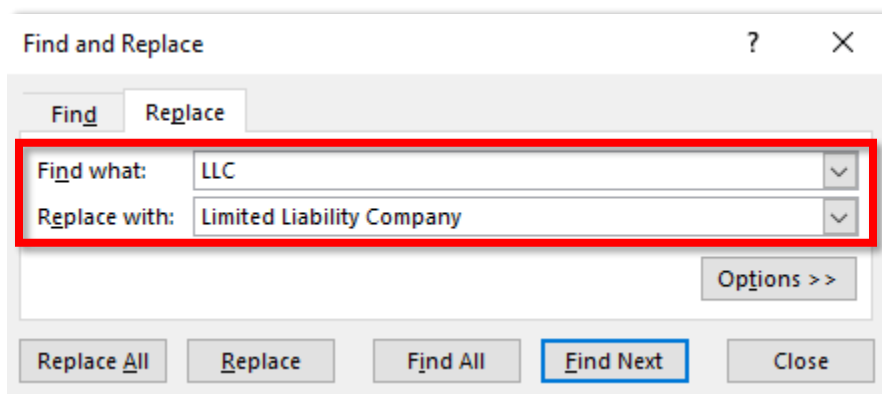
- Click on the **Find & Select** command.



- Once you click on the **Find & Select** button, you'll have a dropdown menu. Choose the **Replace** option.



- The **Replace** command will display a pop-up window, like the **Find** command. In the window, type the word(s) you want Excel to find in the *Find what* search box and type the word(s) you want to replace them with in the *Replace with* box.

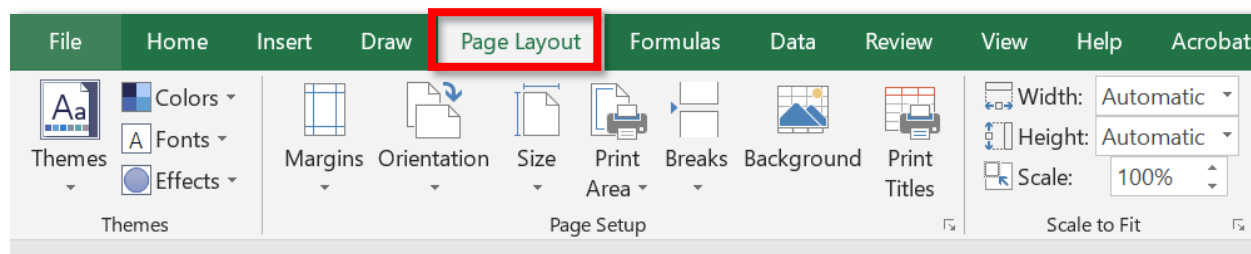


- Next, you can decide if you want Excel to replace all entries immediately without checking them one by one (by selecting the **Replace All** command) or you can check each instance of the replacements individually (by selecting the **Replace** command).

If you followed these steps correctly, Excel will replace all instances of the words it found with the words you decided to replace them with.

Customizing Your Page Layout

To change the layout of your sheet, you'll have to navigate to the **Page Layout** tab to make edits. The **Page Layout** tab will help you make changes to your spreadsheet so that you can print the sheet according to your specifications.



Page Setup

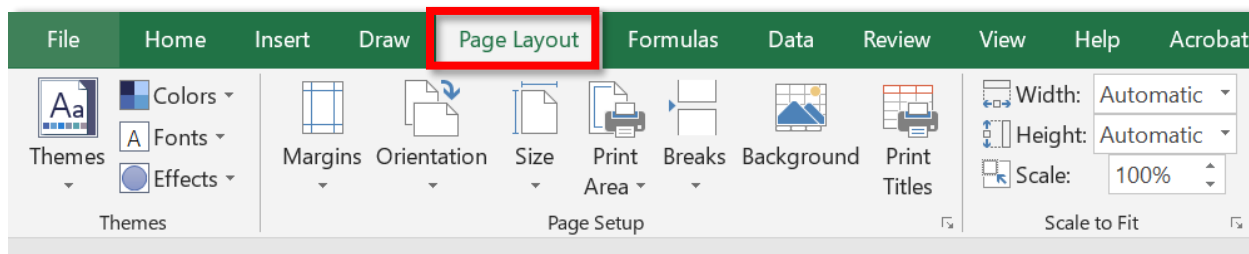
The **Page Setup** group of the **Page Layout** tab helps you change your print settings and the default settings of your spreadsheet. Changes made in this section only pertain to the sheet you're working on and won't affect the entire workbook (i.e. other sheets). Let's explore some functionalities available in this section.

Changing the Page Margins

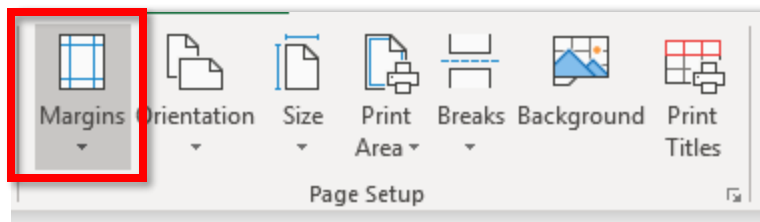
The margins of your spreadsheet default to *Normal* which allows you to print your sheet with a set space at the top, bottom, left and right of the page. You can also make the margins wide or narrow. By making the margins narrower, it will allow you to fit more of your spreadsheet into one page.

To change the margins of your sheet:

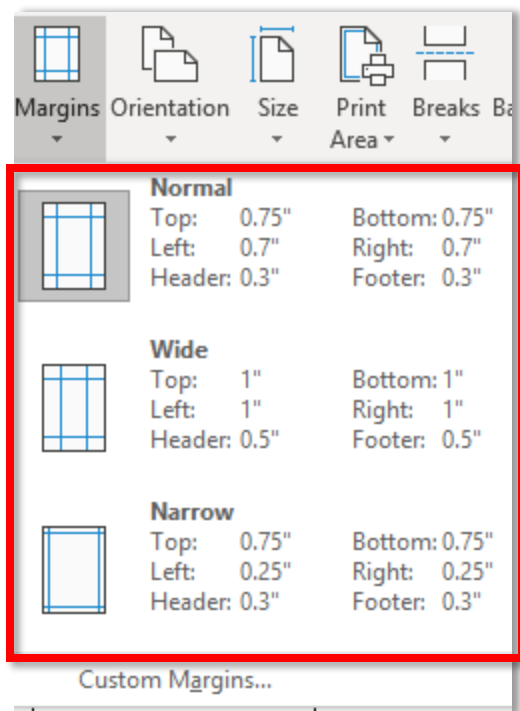
1. Navigate to the **Page Layout** tab



2. In the **Page Setup** group, select the **Margins** command.



3. The **Margins** button will display a drop-down menu. Select the option if you want your margins to be **Normal**, **Wide** or **Narrow**.

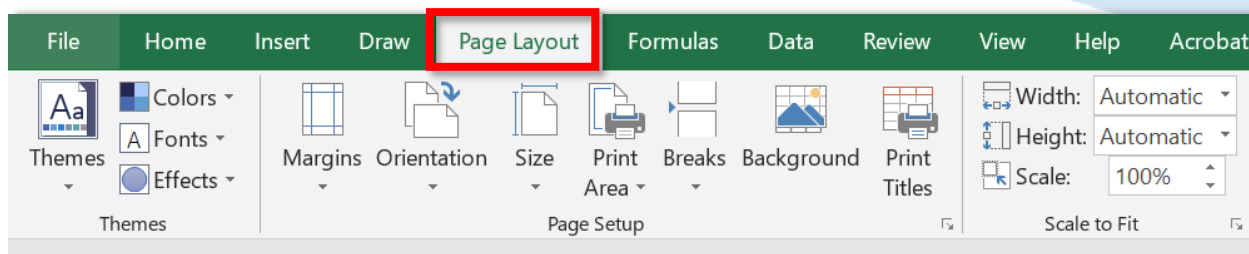


How to Customize your Page Margins

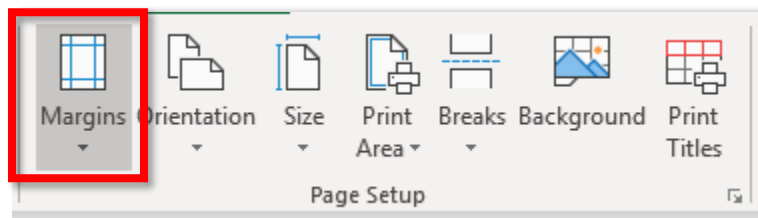
Excel also gives you the option to customize your margins. However, note that the closer your margins are to 0, there is a likelihood that your printer will not be able to print the edges. You might have to make changes to the settings of your printer or adjust your margins accordingly.

To customize your page margins in Excel:

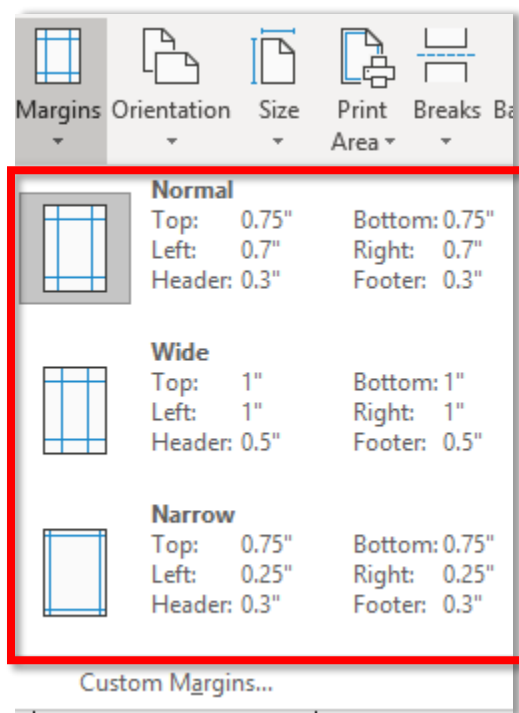
1. Navigate to the **Page Layout** tab



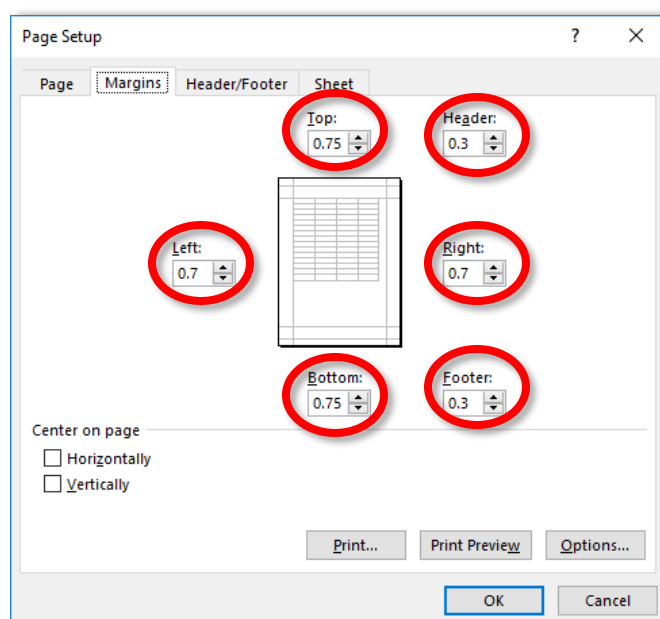
2. In the **Page Setup** group, select the **Margins** command.



3. The **Margins** button will display a drop-down menu. Select the **Custom Margins...** option.



4. The **Custom Margins...** option will display a new window. Here, you can change the top, header, left, right, bottom and footer margins. You can also see a preview of your changes by clicking on the **Print Preview** option. Once you're done customizing the



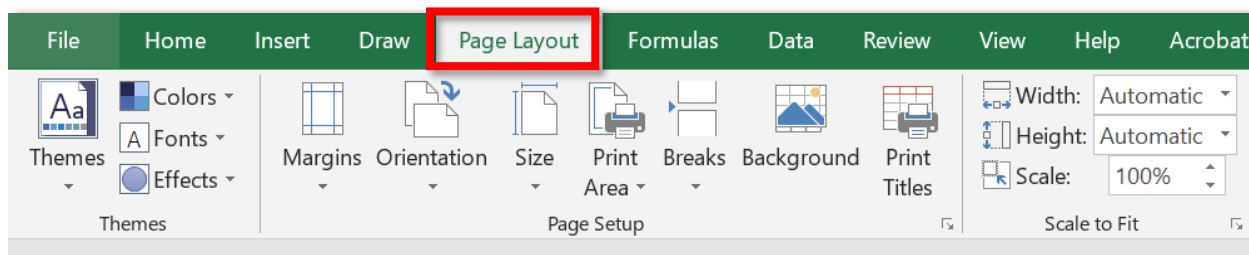
margins for each section, click on the **OK** button to apply your changes to your spreadsheet.

Changing the Page Orientation

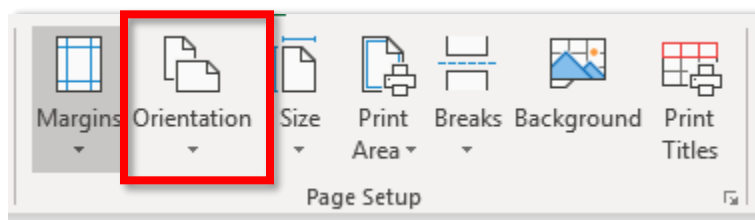
By default, your spreadsheet will print in a *Portrait* style. This, of course can be changed.

To change the orientation of your page:

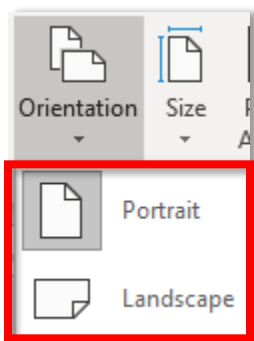
1. Navigate to the **Page Layout** tab



2. In the **Page Setup** group, select the **Orientation** command.



3. To change your page's orientation, select from the following two options: **Portrait** or **Landscape**



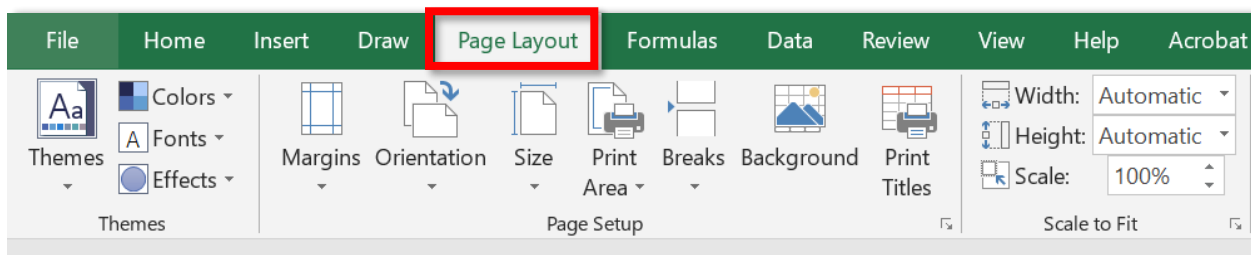
When changing any of the Page settings, you will see a dotted line on your spreadsheet appear which will demonstrate where the page ends for your spreadsheet. There is no way to get rid of the dotted line once it appears.

Choosing the Size of the Paper

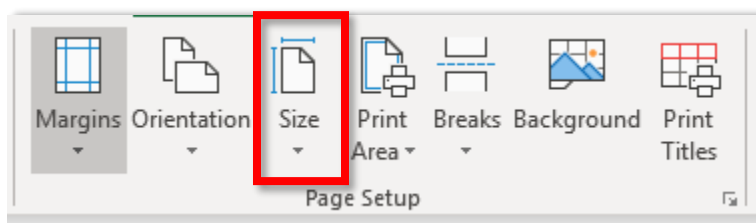
At times, you might need to print your spreadsheet on a different sized paper, such as ledger paper. Excel defaults to the typical 8x11 letter size paper, but you can change this option and select a different paper size.

To change the size of the paper:

1. Navigate to the **Page Layout** tab



2. In the **Page Setup** group, select the **Size** command.



3. Select the paper size you want to use from the drop-down menu.

Using the Print Area

Excel also allows you to print a chosen selection from your spreadsheet exclusively, instead of printing the entire spreadsheet.

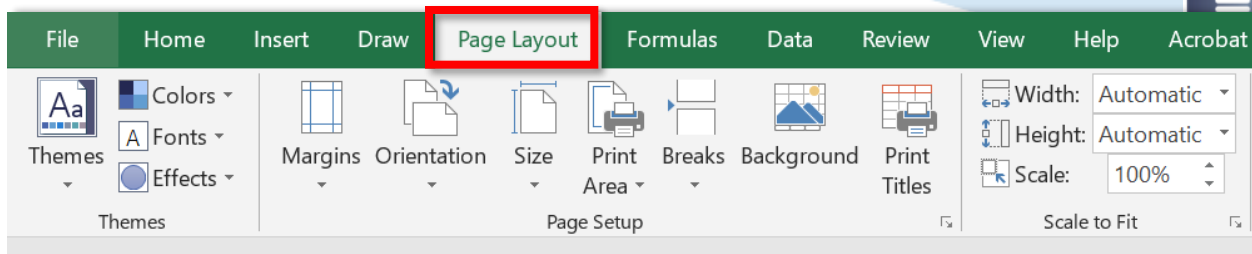


To print a selected area from your spreadsheet:

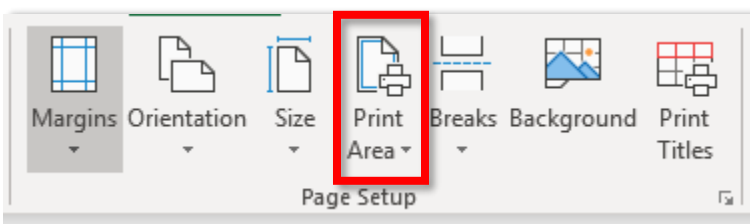
1. Select the area you want to print from your spreadsheet.

	A	B	C	D	E	F
1	Contact Person	Social Security Number	Account Number	Account Name	Account Active?	Phone Number
2	Dominguez, Barbara	904-58-5448	161778	Howard & Son Inc.	YES	(916) 964 - 3998
3	Dominguez, Barbara	904-58-5448	161778	Howard & Son Inc.	YES	(916) 964 - 3998
4	Anthony, Rob	655-84-6444	788491	The Getaway Franchise	NO	(207) 634 - 9210
5	Williams, Debon	378-29-3448	367918	Steele Plumbing Inc.	YES	(668) 163 - 1740
6	Williams, Debon	378-29-3448	367918	Steele Plumbing Inc.	YES	(939) 945 - 1321
7	Hernandez, Harold	176-32-4664	289512	Loma Linda Unified School District	YES	(411) 677 - 9365
8	Ochoa, Jose	853-82-7337	225340	ABC Study Group	YES	(887) 528 - 4549
9	Houston, Steven	469-18-1748	686881	Valley Way LLC	NO	(343) 542 - 3625

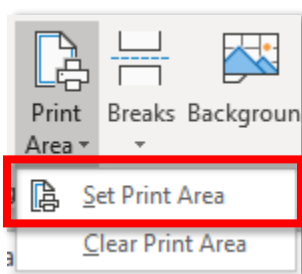
2. Navigate to the **Page Layout** tab



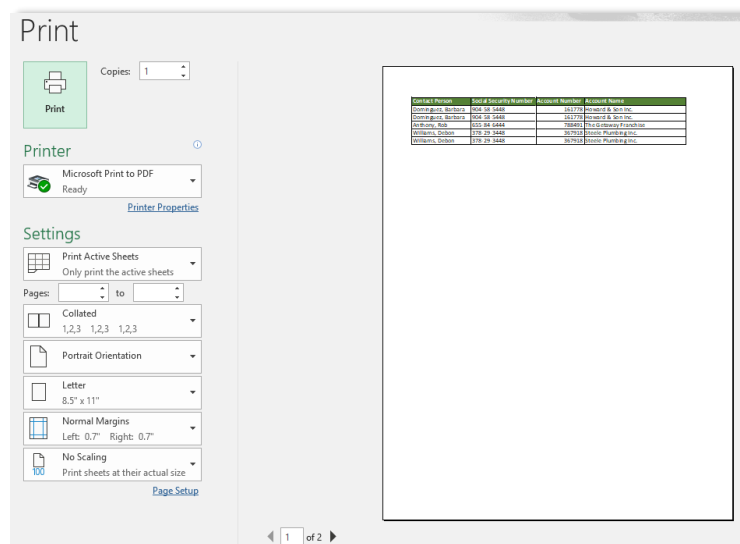
3. In the **Page Setup** group, select the **Print Area** command.



4. The **Print Area** command will display a drop-down menu. Select the **Set Print Area** option.



Now, if you print your spreadsheet, you will notice that only the selected area will print and everything else in your spreadsheet will be excluded from printing.

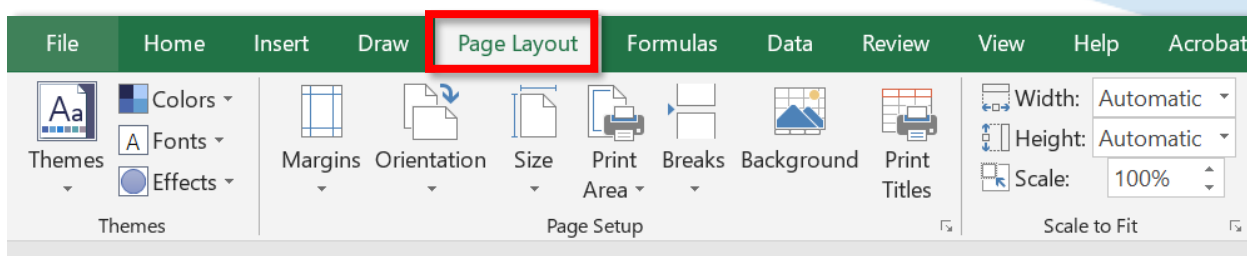


How to Clear the Print Area

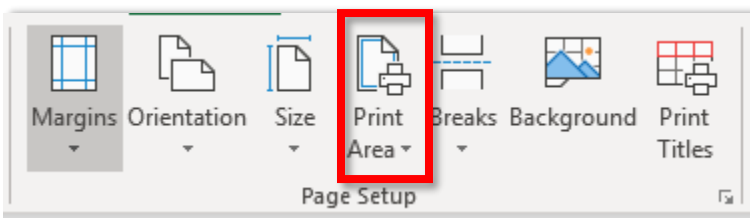
If you've used the **Print Area** option to print a selected area in your spreadsheet, but would prefer to print the entire spreadsheet instead, then you'll need to clear your print area.

To clear your print area:

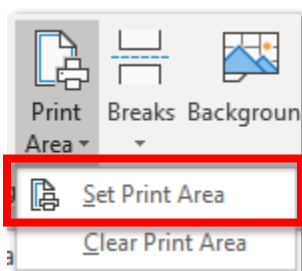
1. Navigate to the **Page Layout** tab



2. In the **Page Setup** group, select the **Print Area** command.



3. The **Print Area** command will display a drop-down menu. Select the **Clear Print Area** option.

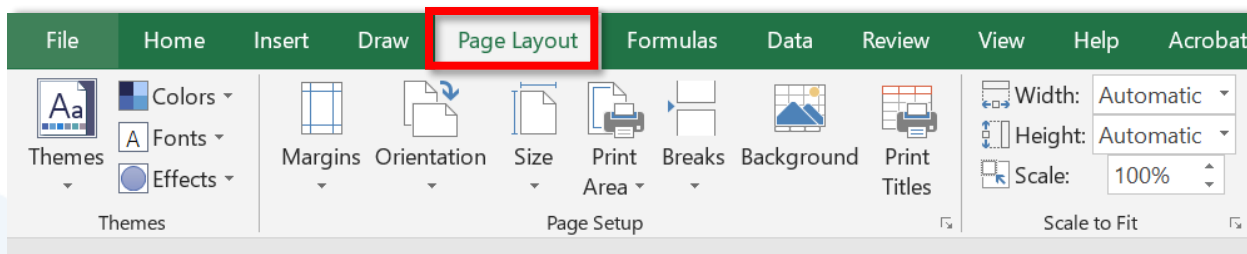


Printing Titles

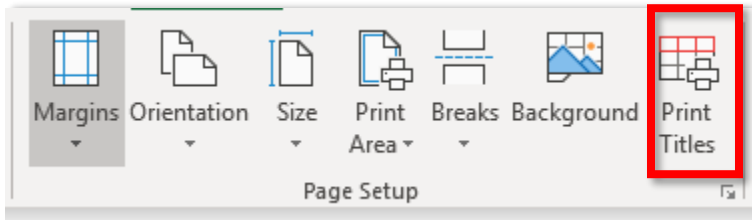
Most of us work with lots of data which means that if we decide to print a spreadsheet, the spreadsheet will most likely need to be printed in more than one page. When this happens, only page one will include your table's headers, but the rest of the pages will only print the data without the table's headers. The good news is that you can print the table's headers on every page.

To include/print your table's headers on every page:

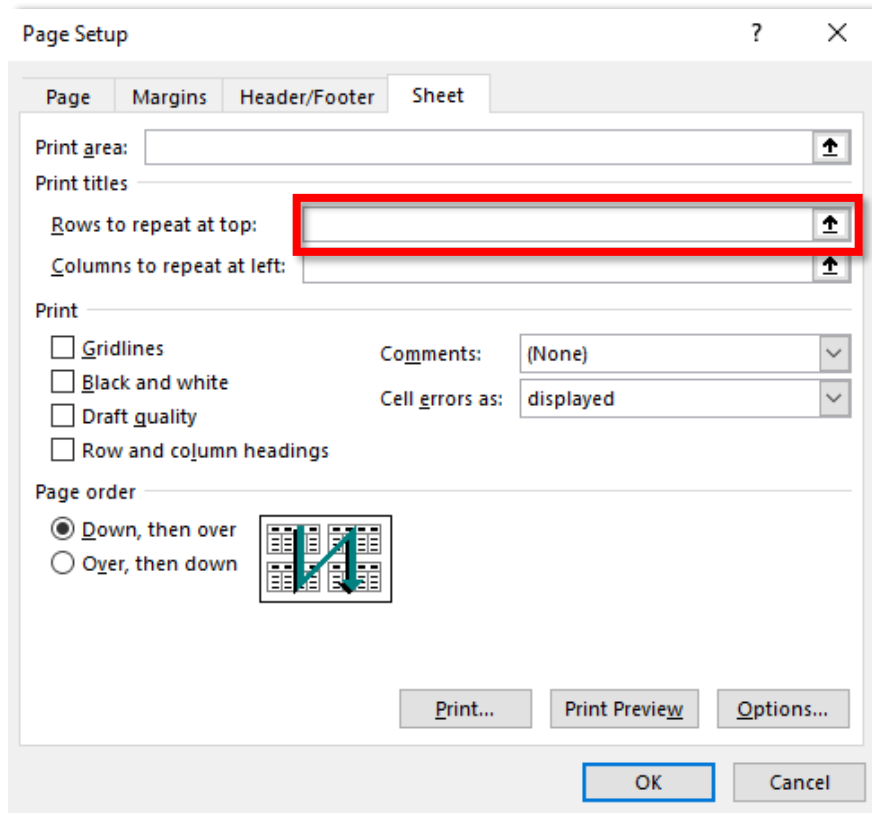
1. Navigate to the **Page Layout** tab



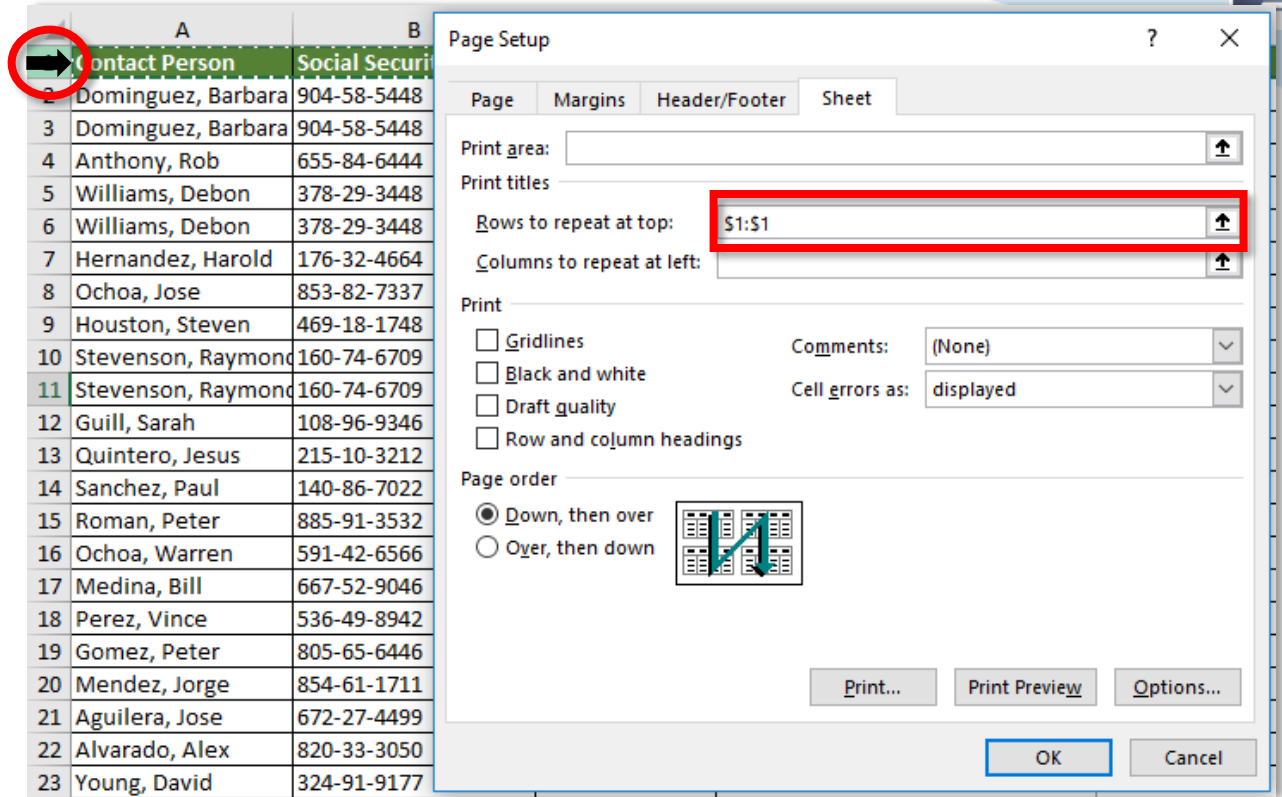
2. In the **Page Setup** group, select the **Print Titles** command.



3. Selecting the **Print Titles** command will display a new window. Click in the area titled *Rows to repeat at top*.



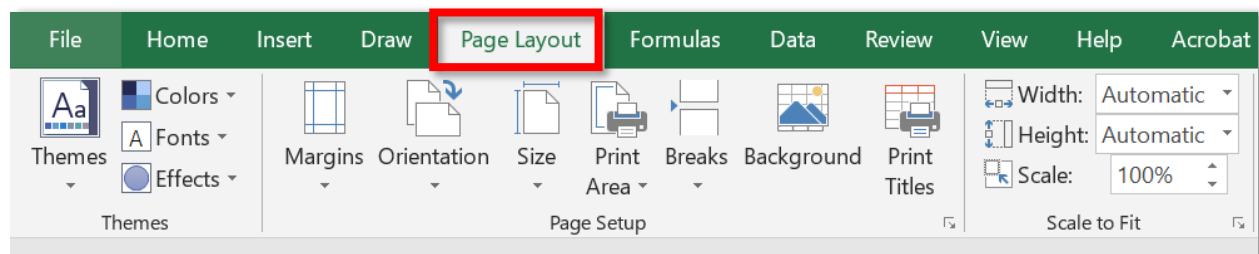
4. Move your cursor outside of the window to select the row *number* that has your table's headers.
5. Select the **OK** button.



If you followed these steps correctly, you'll see how every page you print will include your table's headers.

Printing Spreadsheets

To change the layout of your sheet, you'll have to navigate to the **Page Layout** tab to make edits. The **Page Layout** tab will help you make changes to your spreadsheet so that you can print the sheet based on your needs.



Other Sheet Options

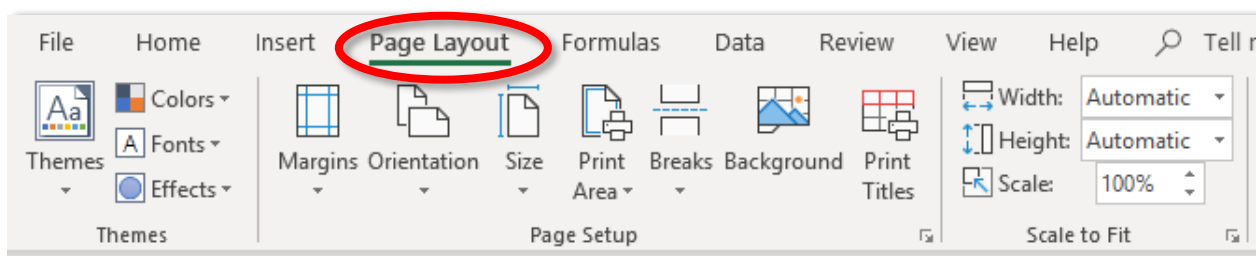
As described before, the ribbons can only fit a limited number of buttons. However, you can continue to customize the print options by checking a few options on the **Sheet Options** group.

How to Remove the Gridlines

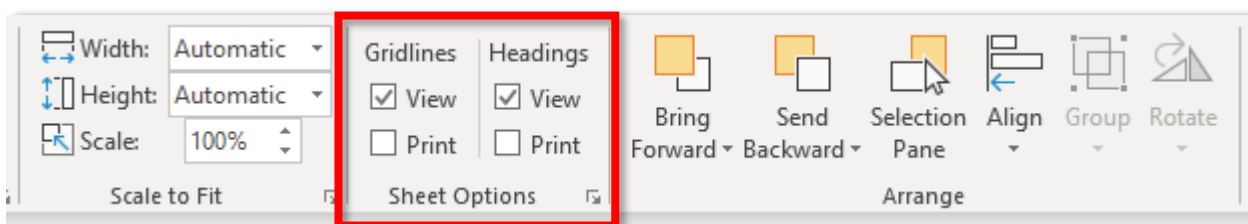
By default, Excel spreadsheets will show the gridlines, but they won't print unless you specify that you want the gridlines to print.

To remove the gridlines from your spreadsheet:

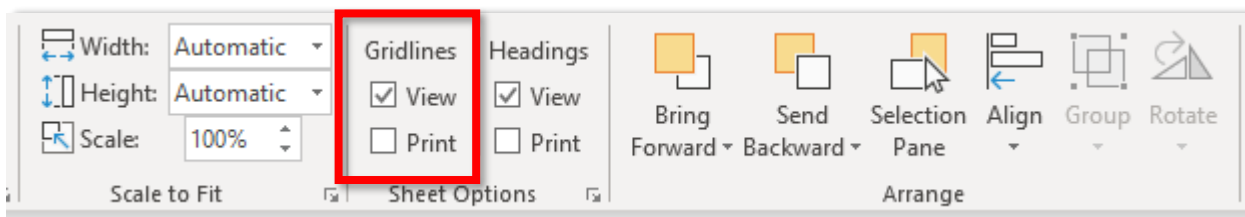
1. Navigate to the **Page Layout** tab.



2. Locate the **Sheet Options** group.



3. Uncheck the *View* checkbox in the **Gridlines** section.

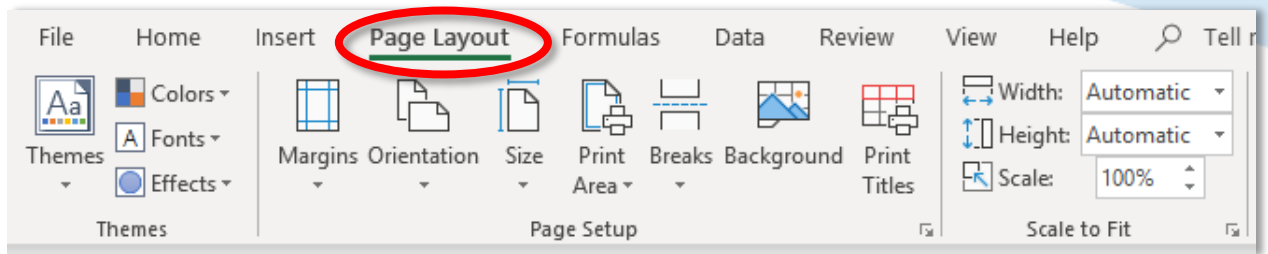


How to Remove the Headings

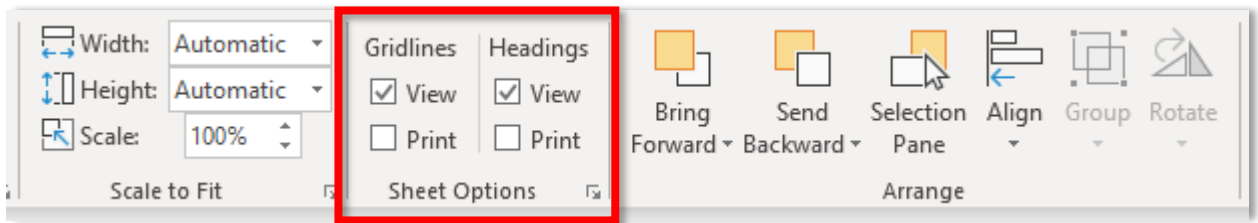
By defaults, Excel will show you the column letters and the row numbers. These are called **Headings** and they can also be removed from your view.

To remove the headings from your spreadsheet:

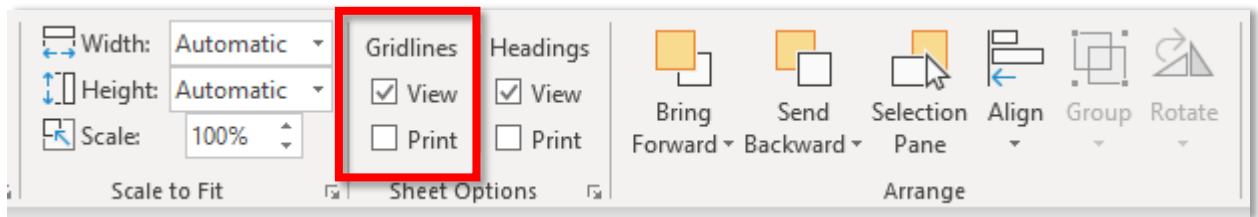
1. Navigate to the **Page Layout** tab.



2. Locate the **Sheet Options** group.



3. Uncheck the **View** checkbox in the **Headings** section.



Scaling to Fit

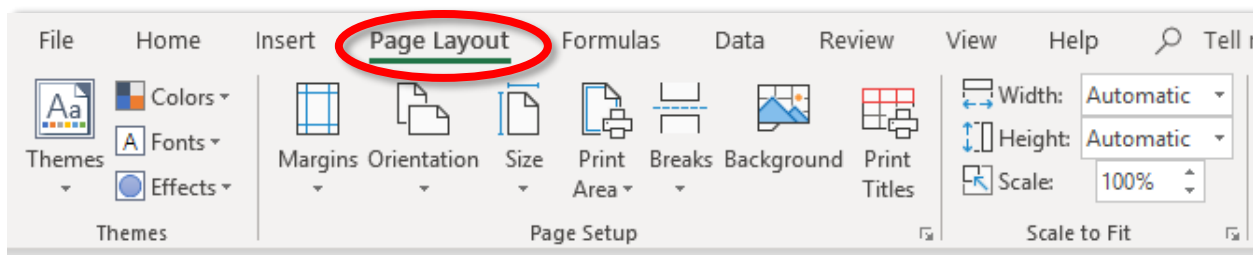
In the **Page Layout** tab, there is a **Scale to Fit** section where you can customize your sheet to make it fit in one page. Sometimes, when you try to print a spreadsheet, some columns may not fit into the first page and will print on the second page instead.

How to Change the Width and Height of Your Sheet to Print

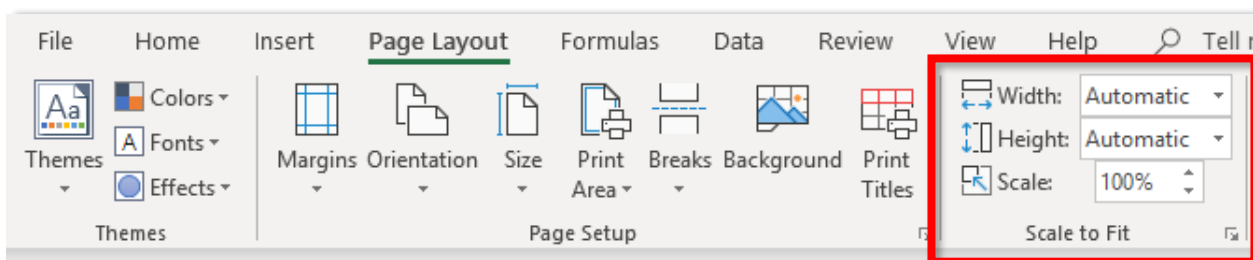
The width and height of a sheet can be customized so that you can try to fit your sheet into one or multiple pages. Most likely, when using these features, the size of the font or your table will decrease, making it harder to read. By default, Excel makes the width and height automatic.

To change the width and height of your sheet:

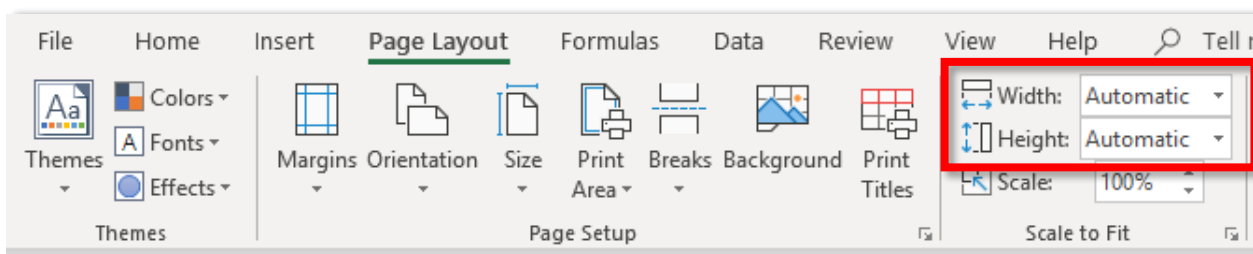
1. Navigate to the **Page Layout** tab.



2. Locate the **Scale to Fit** group.



3. Change the *Width* and *Height* by clicking on the drop-down box.

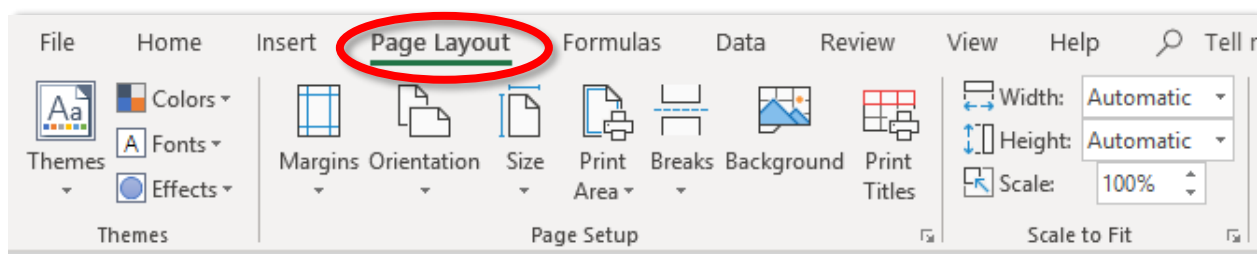


Changing the Scale

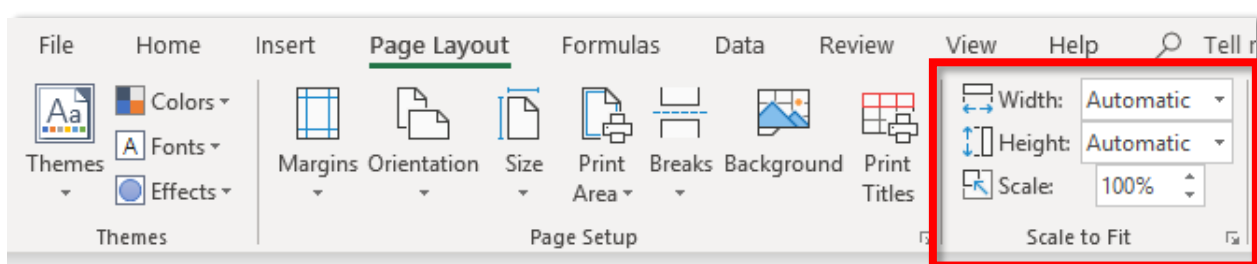
The best option to make your sheet fit in one page (or in several desired pages) is by changing the scale percentage. Be careful when you also use this option because your table will shrink as you decrease the percentage. Anything lower than 70% may start to look too small and the table will be aligned to the left of the sheet.

To change the scale of your sheet:

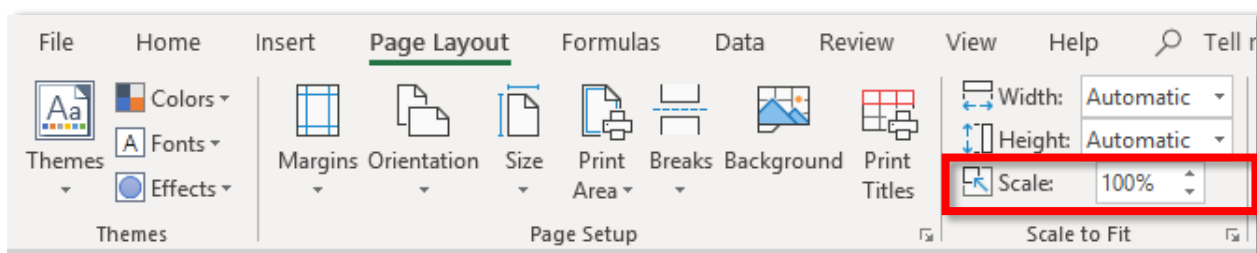
1. Navigate to the **Page Layout** tab.



2. Locate the **Scale to Fit** group.

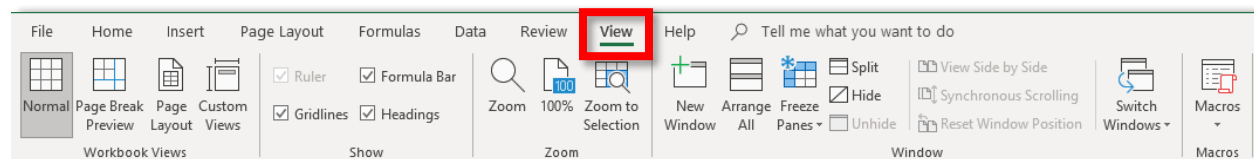


3. Change the *Scale* by clicking on the drop-down box.



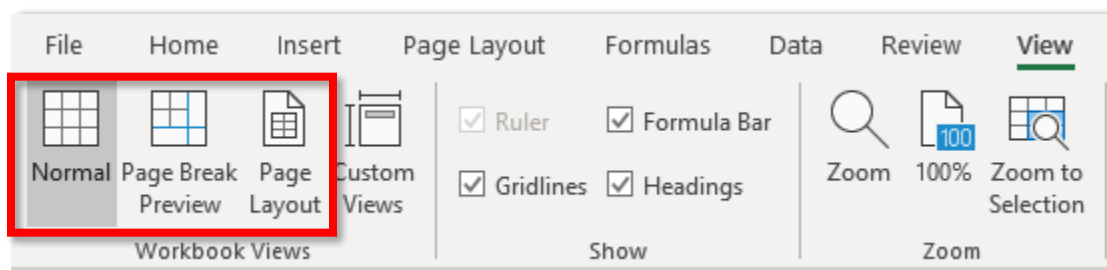
Navigating the View Tab

The **View** tab allows you to view a spreadsheet from different angles, zoom in and out of your spreadsheet, and focus on areas within your spreadsheet. In this section, you'll explore the options that the **View** tab provides.



Workbook Views

There are three diverse types of Workbook views in Excel. Each view allows you to see your spreadsheet from a different point of view to help you edit, zoom out and understand how your spreadsheet will look when printed. Let's explore the three types of views available in Excel by exploring the **Workbook Views** group.

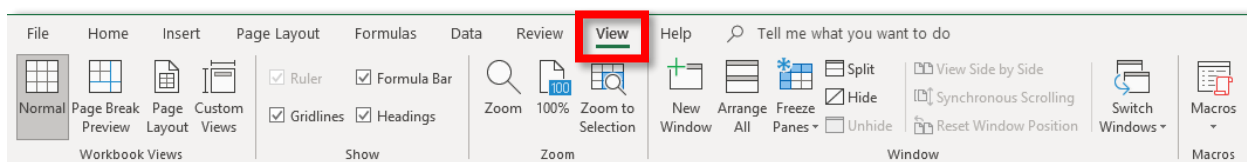


Normal View

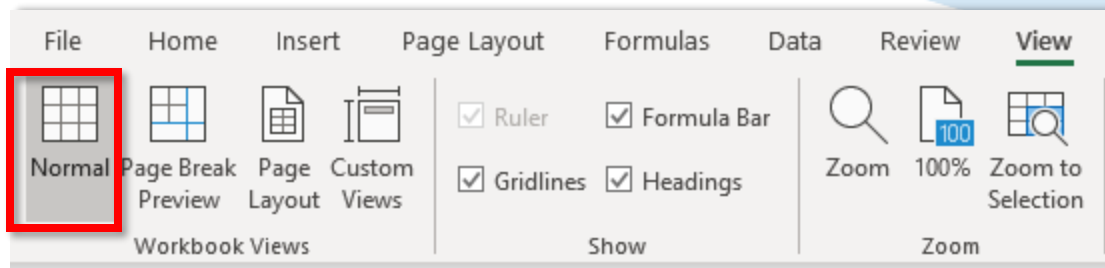
By default, the **Normal** view is what Excel displays when you work on a spreadsheet. If you use a different view, most likely, you will want to come back to the Normal View to edit formulas, manipulate the cells and change the sizes of your columns or rows. The Normal view is the most common view to use when working on Excel.

If you are in another view and need to get back to the **Normal** view, this is how you access the **Normal** view:

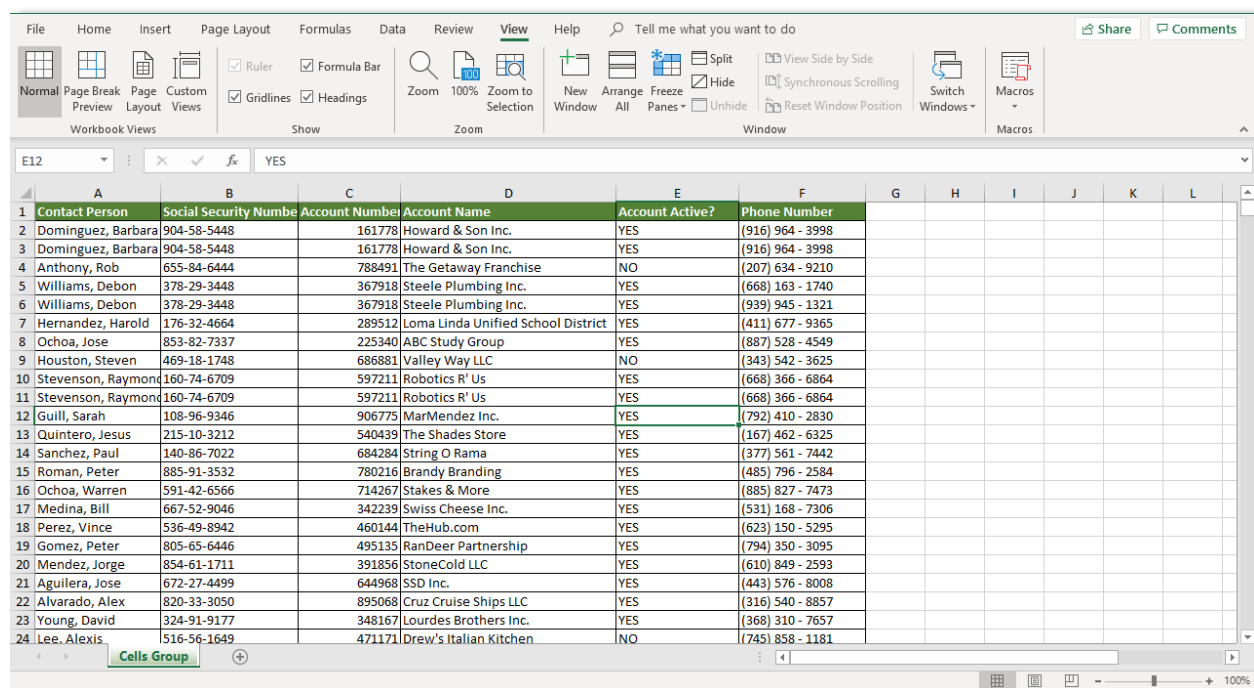
1. Select the **View** tab



2. In the **Workbook Views** group, select the **Normal** view.



The **Normal** will display the view that you are most familiar with in Excel.

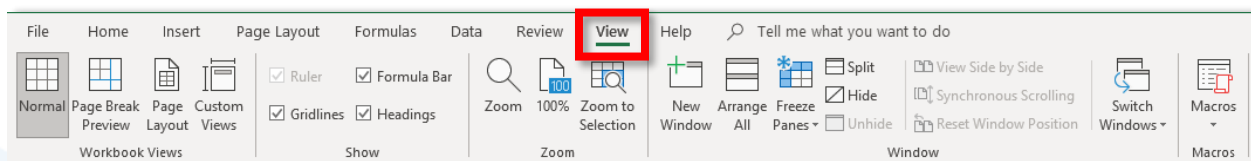


Page Break Preview

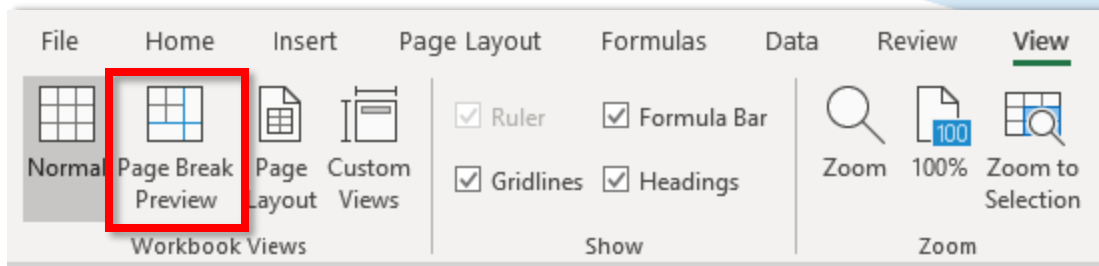
The **Page Break Preview** allows you to see your workbook's pages and the breaks within each page. This view is helpful when printing your work because it helps you visualize the number of pages per spreadsheet and where your content may get cut off.

To use the **Page Break Preview**:

1. Select the **View** tab



2. In the **Workbook Views** group, select the **Page Break Preview** option.



The **Page Break Preview** will display blue lines, indicating where your pages start and end.

	A	B	C	D	E	F
1	Contact Person	Social Security	Account Number	Account Name	Account Active	Phone Number
2	Dominguez, Barbara	904-58-5448	161778	Howard & Son Inc.	YES	(916) 964 - 3998
3	Dominguez, Barbara	904-58-5448	161778	Howard & Son Inc.	YES	(916) 964 - 3998
4	Anthony, Rob	655-84-6444	788491	The Getaway Franchise	NO	(207) 634 - 9210
5	Williams, Debon	378-29-3448	367918	Steele Plumbing Inc.	YES	(668) 163 - 1740
6	Williams, Debon	378-29-3448	367918	Steele Plumbing Inc.	YES	(939) 945 - 1321
7	Hernandez, Harold	176-32-4664	289512	Loma Linda Unified School Dist	YES	(411) 677 - 9365
8	Ochoa, Jose	853-82-7337	225340	ABC Study Group	YES	(887) 528 - 4549
9	Houston, Steven	469-18-1748	686881	Valley Way LLC	NO	(343) 542 - 3625
10	Stevenson, Raym	160-74-6709	597211	Robotics R' Us	YES	(668) 366 - 6864
11	Stevenson, Raym	160-74-6709	597211	Robotics R' Us	YES	(668) 366 - 6864
12	Guill, Sarah	108-96-9346	906775	MarMendez Inc.	YES	(792) 410 - 2830
13	Quintero, Jesus	215-10-3212	540439	The Shades Store	YES	(167) 462 - 6325
14	Sanchez, Paul	140-86-7022	684284	String O Rama	YES	(377) 561 - 7442
15	Roman, Peter	885-91-3532	780216	Brandy Branding	YES	(485) 796 - 2584
16	Ochoa, Warren	591-42-6566	714267	Stakes & More	YES	(885) 827 - 7473
17	Medina, Bill	667-52-9046	342239	Swiss Cheese Inc.	YES	(531) 168 - 7306
18	Perez, Vince	536-49-8942	460144	TheHub.com	YES	(623) 150 - 5295
19	Gomez, Peter	805-65-6446	495135	RanDeer Partnership	YES	(794) 350 - 3095
20	Mendez, Jorge	854-61-1711	391856	StoneCold LLC	YES	(610) 849 - 2593
21	Aguilera, Jose	672-27-4499	644968	SSD Inc.	YES	(443) 576 - 8008
22	Alvarado, Alex	820-33-3050	835068	Cruz Cruise Ships LLC	YES	(316) 540 - 8857
23	Young, David	324-91-9177	348167	Lourdes Brothers Inc.	YES	(368) 310 - 7657
24	Lee, Alexis	516-56-1643	471171	Drew's Italian Kitchen	NO	(745) 858 - 1181
25	Chin, Jade	423-34-5434	765631	XLT Inc.	YES	(656) 744 - 6392
26	Jefferson, Erica	855-38-6695	145650	Mutual Real Investments	YES	(259) 190 - 7535
27	Jefferson, Erica	855-38-6695	145650	Mutual Real Investments	YES	(545) 558 - 1618
28	Washington, Mari	174-76-7081	391146	Hut Hut Inn	YES	(840) 648 - 6554
29	Fernandez, Juan	467-89-1558	178402	Lou D Consulting	YES	(941) 673 - 7939
30	Perez, Oscar	104-92-1740	324424	Plaques Inc.	YES	(747) 859 - 6992
31	Salazar, Rudy	144-52-6164	168405	Love Notes & More	YES	(671) 341 - 6542
32	Aguilar, David	158-46-9774	857093	Sky Is The Limit Inc.	YES	(829) 941 - 8584
33	Valenzuela, Pedro	379-33-6540	737945	N.O.E.L. Inc.	YES	(599) 438 - 5585
34	Nikomo, Lee	270-96-9914	787669	Green B LLC	YES	(829) 615 - 9611
35	Ramirez, Xavi	949-53-9039	542581	Azel Furniture	NO	(762) 912 - 4727
36	Ramirez, Xavi	949-53-9039	542581	Azel Furniture	NO	(762) 912 - 4727
37	Ramirez, Xavi	949-53-9039	542581	Azel Furniture	NO	(318) 443 - 5219
38	Lauren, Sophia	589-97-2449	311403	KLIM Inc.	YES	(859) 148 - 4597
39	Stankevich, Loren	332-66-1290	769147	ADA LLC	YES	(659) 642 - 1758
40	Wilson, Johnny	110-61-1868	881603	Corkie's LLC	YES	(444) 226 - 8305
41	Williams, Hue	615-72-7376	107028	Howard's Restaurante	YES	(660) 942 - 9658
42	Clinton, Todd	791-49-2470	218966	Six Sigma Edu	YES	(756) 833 - 6043

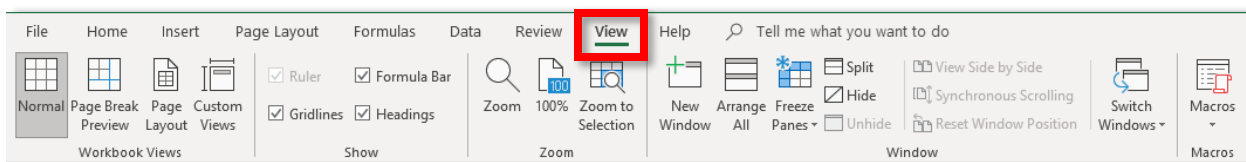
Page Layout View

The **Page Layout** view will automatically include the ruler at the top that will help you measure the length of the page in inches. This specific view is helpful when editing the **Header** and **Footer** of your page. If you decide to edit the **Header** or **Footer** of a spreadsheet, Excel will automatically take you to this view. The **Page Layout** view will also

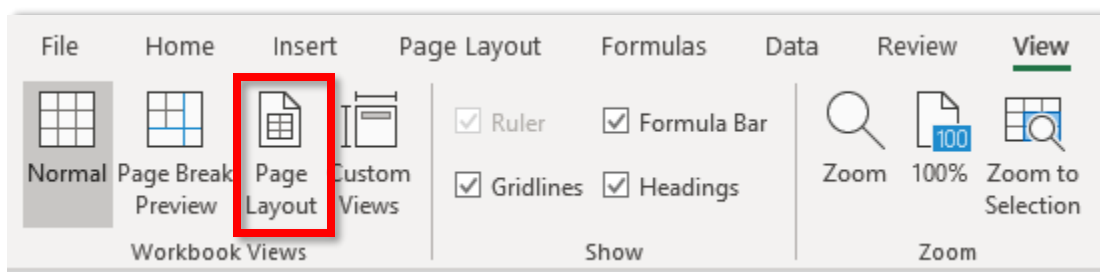
help you visualize the different pages that make up your spreadsheet when printing. However, this view will not allow you to consolidate pages.

To use the **Page Layout** view:

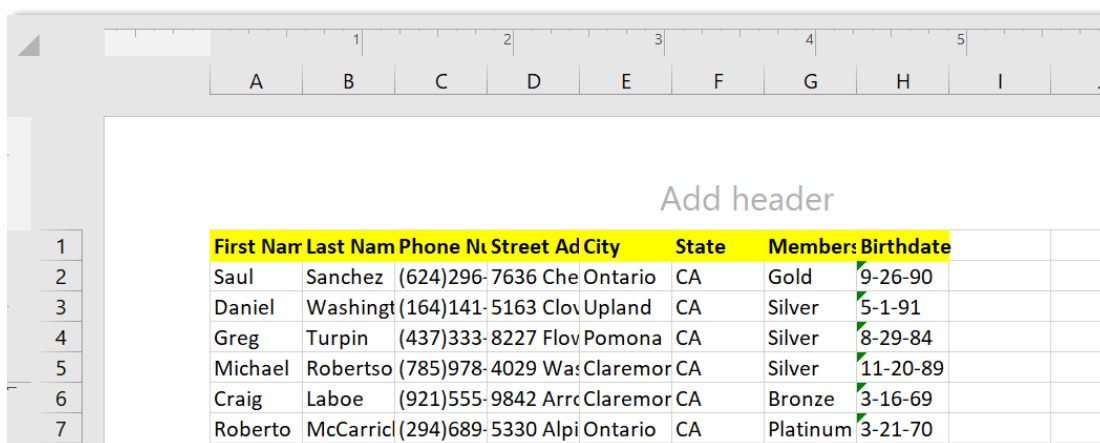
1. Select the **View** tab



2. In the **Workbook Views** group, select the **Page Layout** option.



The **Page Layout** view is great to use when using **Headers** and **Footers**.

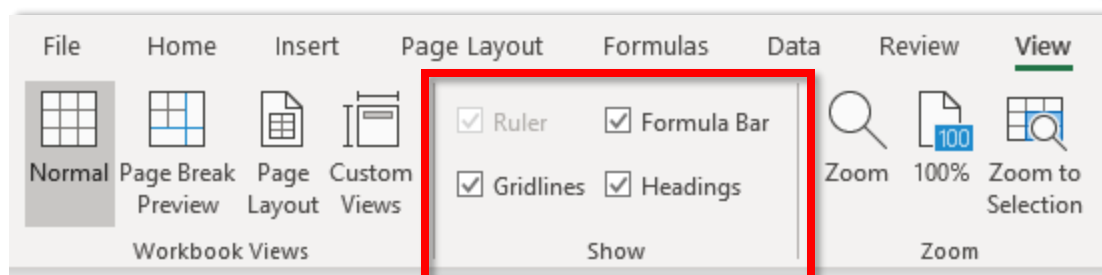


The screenshot shows an Excel spreadsheet in Page Layout view. The table has the following data:

	First Name	Last Name	Phone Number	Street Address	City	State	Member	Birthdate
1	Saul	Sanchez	(624)296-7636	Chester	Ontario	CA	Gold	9-26-90
2	Daniel	Washington	(164)141-5163	Clover	Upland	CA	Silver	5-1-91
3	Greg	Turpin	(437)333-8227	Florence	Pomona	CA	Silver	8-29-84
4	Michael	Robertson	(785)978-4029	Washington	Claremore	CA	Silver	11-20-89
5	Craig	Laboe	(921)555-9842	Arrington	Claremore	CA	Bronze	3-16-69
6	Roberto	McCarroll	(294)689-5330	Alpine	Ontario	CA	Platinum	3-21-70

Show Group

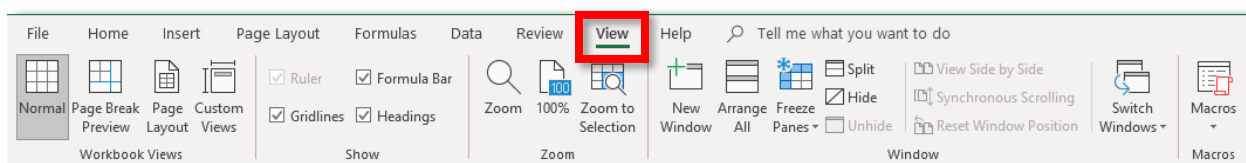
Although you learned how to hide the **Gridlines** and the **Headings** in a previous section of this booklet, the **View** tab has this option and other options available. Let's explore some of the settings in the **Show** group.



How to Hide the Gridlines in a Spreadsheet

To hide the gridlines from your spreadsheet:

1. Select the **View** tab



2. In the **Show** group, unselect the **Gridlines** option.

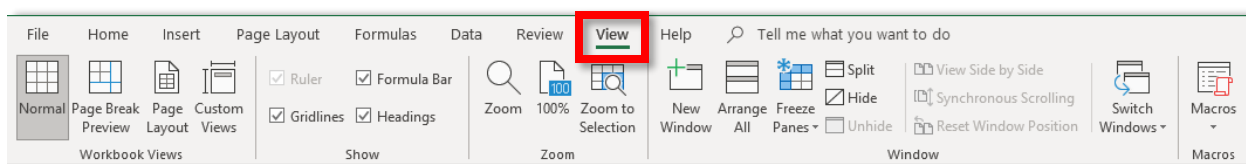


How to Hide the Formula Bar

We recommend that you always display the Formula Bar, but Excel does give you the option to hide it from plain sight.

To hide the **Formula Bar**:

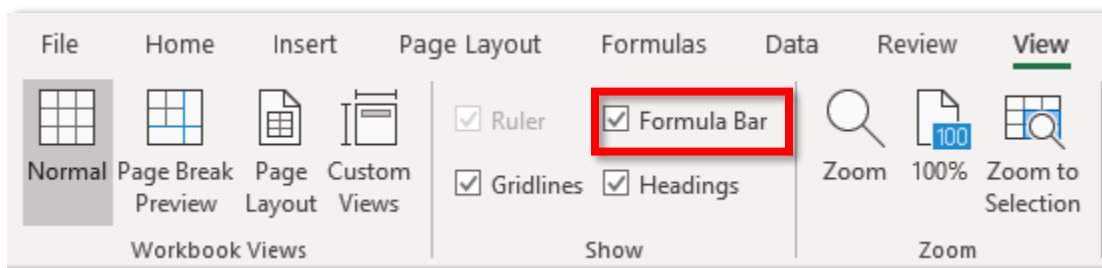
1. Select the **View** tab



2. In the **Show** group, unselect the **Formula Bar** option.

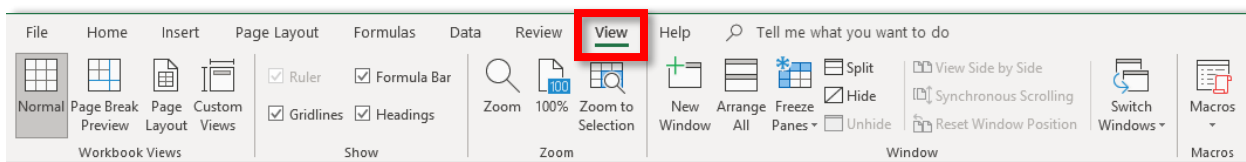
How to Hide the Headings in Your Spreadsheet

The **Headings** in Excel are the column *letters* and the row *numbers*.

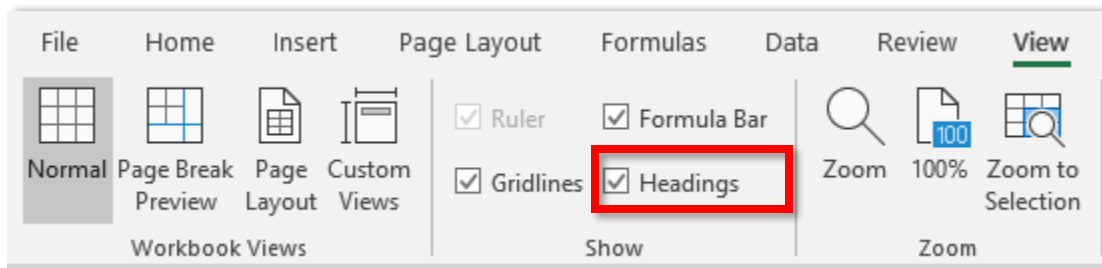


To hide the headings in your spreadsheet:

1. Select the **View** tab



2. In the **Show** group, unselect the **Headings** option.

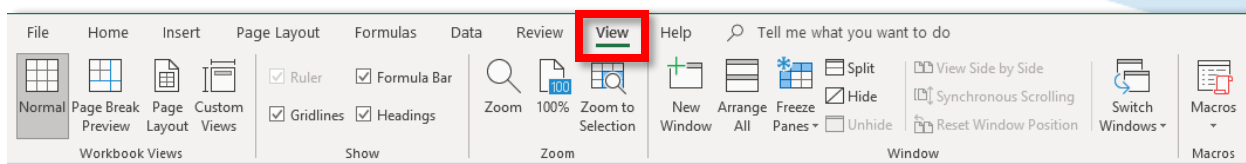


How to Hide the Ruler in Excel

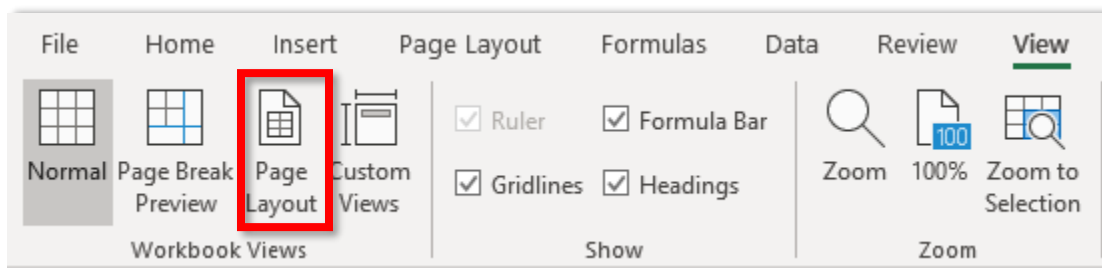
When using the **Page Layout** view, Excel displays a ruler that helps you measure the cells, columns or data in your spreadsheet. You can also hide the **Ruler** in Excel, but this can only be done in the **Page Layout** view. If you are using any other view the **Ruler** will be grayed out.

To hide the **Ruler** in Excel:

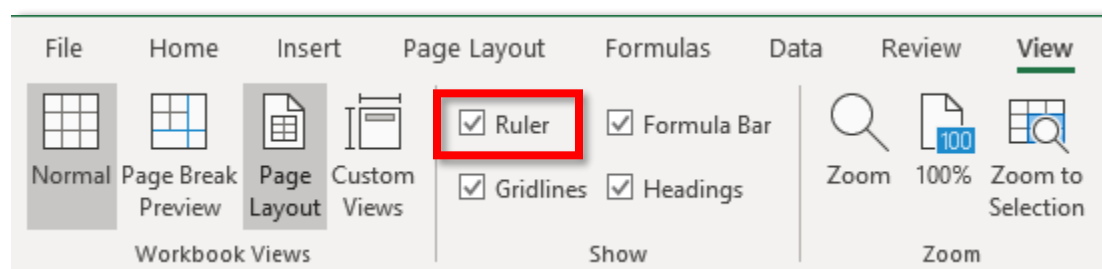
1. Select the **View** tab



2. In the **Workbook Views** select the **Page Layout** view.

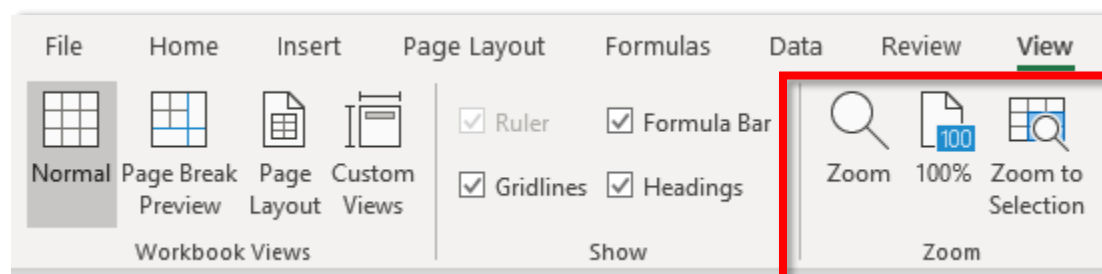


3. In the **Show** group, unselect the **Ruler** option.



Zoom Group

The **Zoom** group of the **View** tab has three options that allow you to magnify the content of your spreadsheet. This section is useful when the font or content is too small or if your vision isn't that great and you need to see things in a much larger scale. Let's explore the commands available in this group.

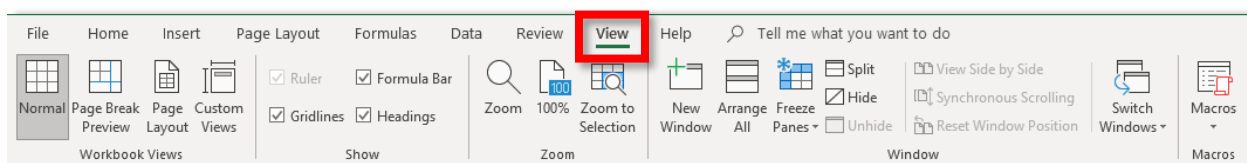


The Zoom (Magnifying Glass) Command

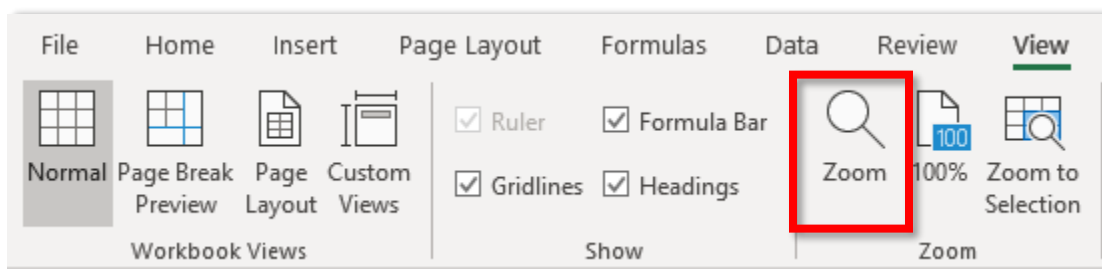
The magnifying glass located in the **Zoom** group allows you to zoom in and out of your spreadsheet. Excel defaults to a 100% view. The 100% view is a good representation of the printed version of your spreadsheet.

To use the **Zoom** command (or magnifying glass):

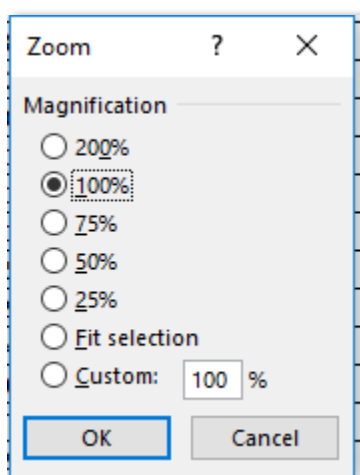
1. Select the **View** tab



2. In the **Zoom** group click on the **Zoom** command.



3. After selecting the **Zoom** button, Excel will prompt a window where you can select the magnification of your choice. Select the best option and click on the **OK** button.



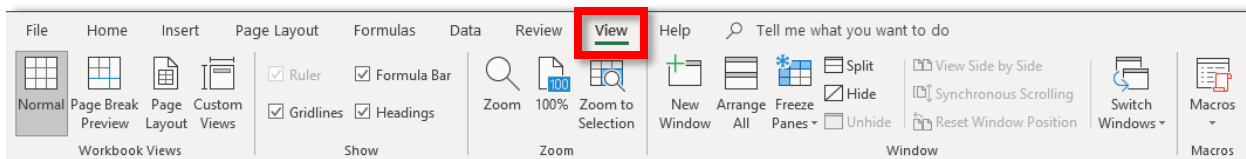
Remember – you can also use the Zoom bar located in the lower right-hand corner of your spreadsheet.

100% Zoom

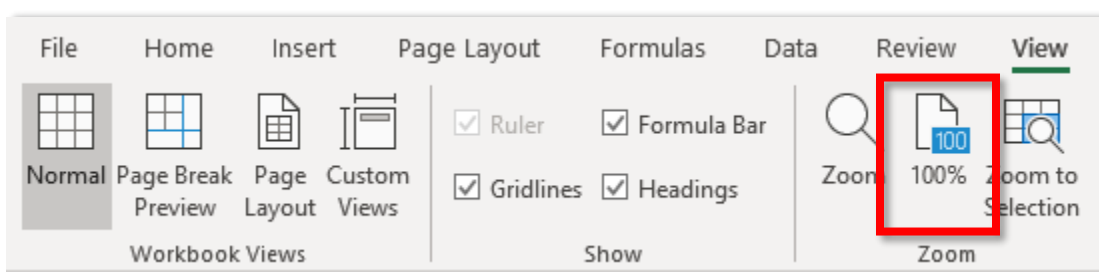
If you zoomed in or out and need to get back to the original zoom settings in Excel, you can use the **100%** zoom command.

To use the **100%** zoom button:

1. Select the **View** tab



2. In the **Zoom** group click on the **100%** command.



Zoom to Selection

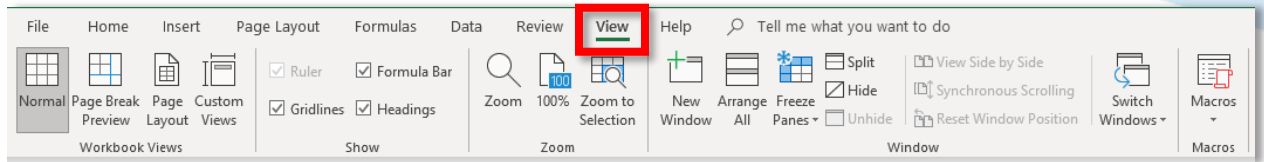
The **Zoom to Selection** command allows you to super-magnify the cell(s) you are currently working on. When clicking on this button, Excel can magnify up to 400%, allowing you to get a closer look at the cells you're currently working on.

To use the **Zoom to Selection** button:

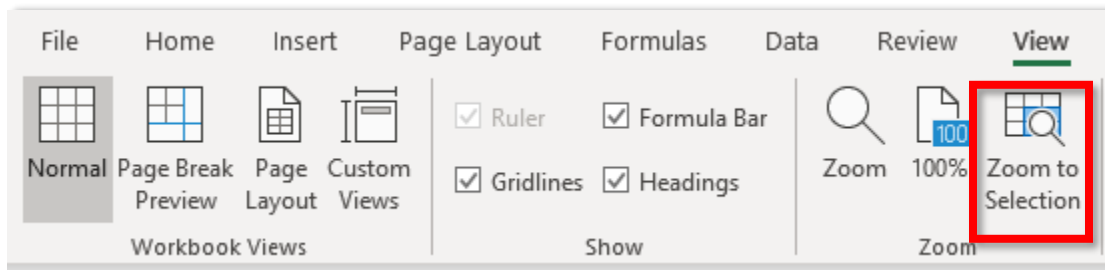
1. Click on a cell or range of cells where you plan to zoom super-magnify the content.

D	E	F
Account Name	Account Active?	Phone Number
Howard & Son Inc.	YES	(916) 964 - 3998
Howard & Son Inc.	YES	(916) 964 - 3998
The Getaway Franchise	NO	(207) 634 - 9210
Steele Plumbing Inc.	YES	(668) 163 - 1740
Steele Plumbing Inc.	YES	(939) 945 - 1321
Loma Linda Unified School District	YES	(411) 677 - 9365
ABC Study Group	YES	(887) 528 - 4549
Valley Way LLC	NO	(343) 542 - 3625
Robotics R' Us	YES	(668) 366 - 6864
Robotics R' Us	YES	(668) 366 - 6864
MarMendez Inc.	YES	(792) 410 - 2830
The Shades Store	YES	(167) 462 - 6225

2. Select the **View** tab



3. In the **Zoom** group, select the **Zoom to Selection** button

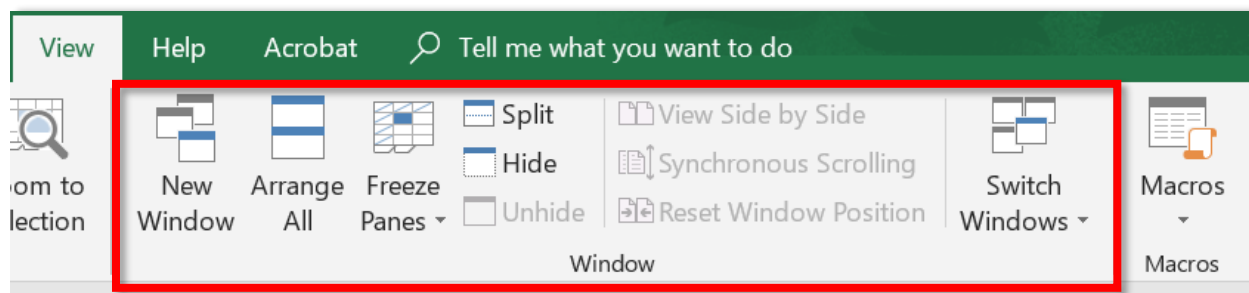


If you followed these steps correctly, you'll see your data magnified.

	D	E
6	Steele Plumbing Inc.	YES
7	Loma Linda Unified School District	YES
8	ABC Study Group	YES
9	Valley Way LLC	NO
10	Robotics R' Us	YES
11	Robotics R' Us	YES
12	MarMendez Inc.	YES

The Window Group

Excel allows you to customize how you toggle back and forth between files and spreadsheets. The **Window** group allows you to personalize the way you view data from your workbook, other Excel files, or parts of your spreadsheet.

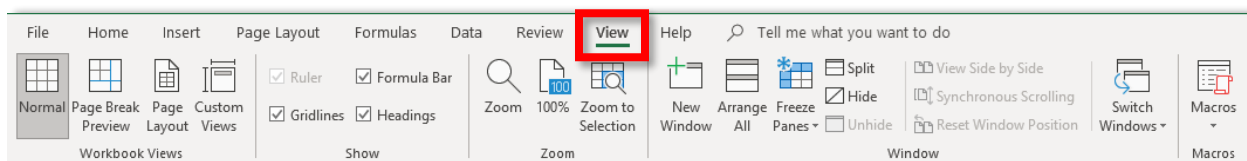


How to Use the New Window Command

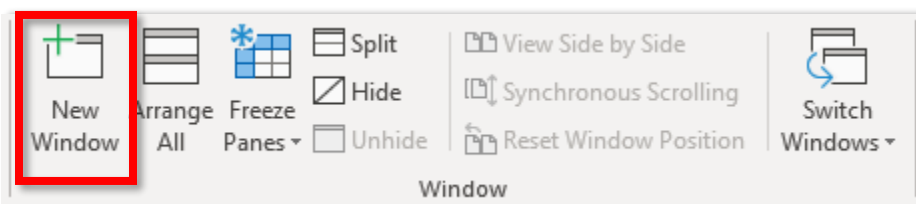
The **New Window** command will open a second window for the file you are currently working on. This option is supposed to facilitate the way you work between sheets. This way, you can see two spreadsheets from the same file across two windows. Excel will name the second window with the name of your file but with the number '2' next to it. You'll be able to toggle between both windows through the bottom view of your screen.

To open a second window (aka a new window):

1. Select the **View** tab



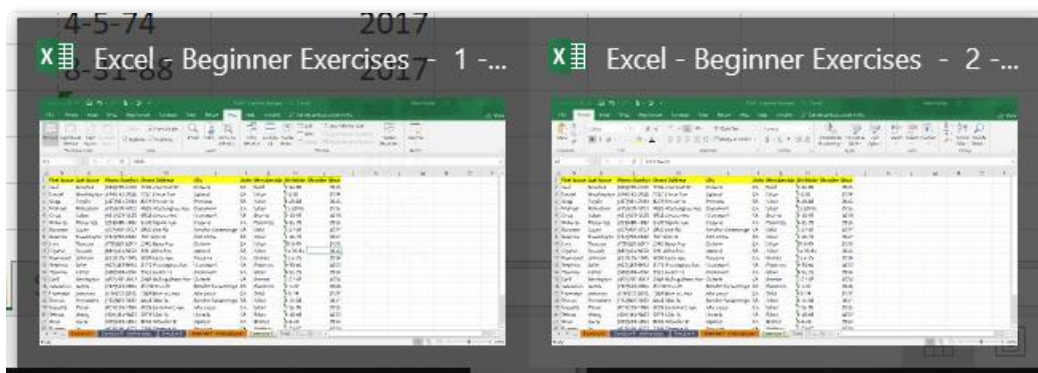
2. From the **Window** group, select the **New Window** command.



If you followed these steps correctly, you'll be able to see your spreadsheet across two windows.

Using the 'Arrange All' Window View

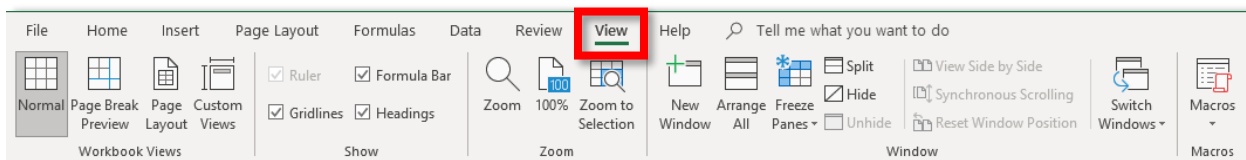
If you are working across multiple windows, you can customize the way the windows are



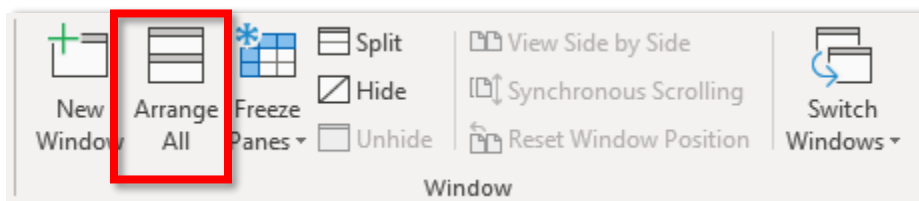
arranged. You can split your screen in half so that one window takes up the left half of your screen and the other window covers the right half of your screen. You can also choose to have one window cover the top half of the screen while the other window covers the bottom half of your screen.

To arrange your windows in Excel:

1. Select the **View** tab

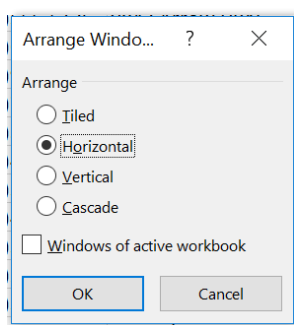


2. From the **Window** group, select the **Arrange All** command.



3. After clicking the **Arrange All** button a window will appear where you get to select the arrangement of your windows. Select the best option and click the **OK** button.

You can always edit the size of any window even after you select a certain arrangement. You can change the size of the window by dragging the little arrow on the edges. This may be a good option, for example, if there is a window you'd prefer to cover most of your screen.

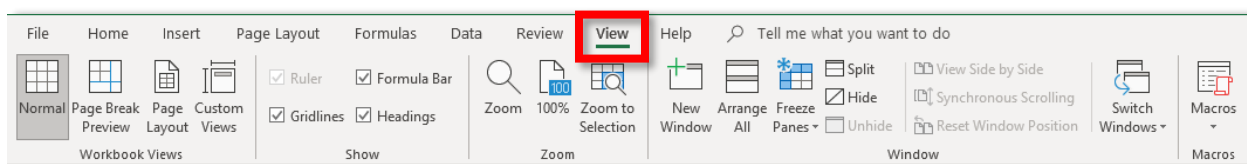


How to Freeze Panes

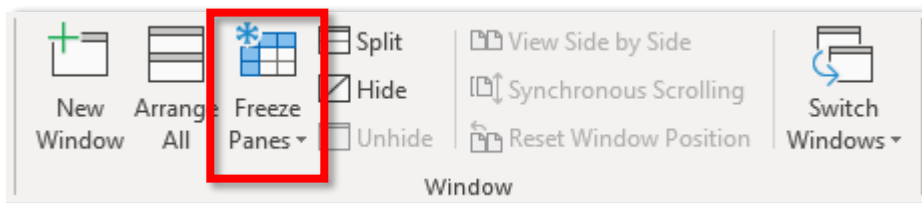
When we work with very long spreadsheets, we may find ourselves scrolling down for quite a long time but realize that we no longer see our table's headers. Excel always provides a way to make your headers visible by using the **Freeze Panes** option. By using the **Freeze Panes** button, you can *freeze* the top row and have it visible as you scroll down your table.

To use the **Freeze Panes** command:

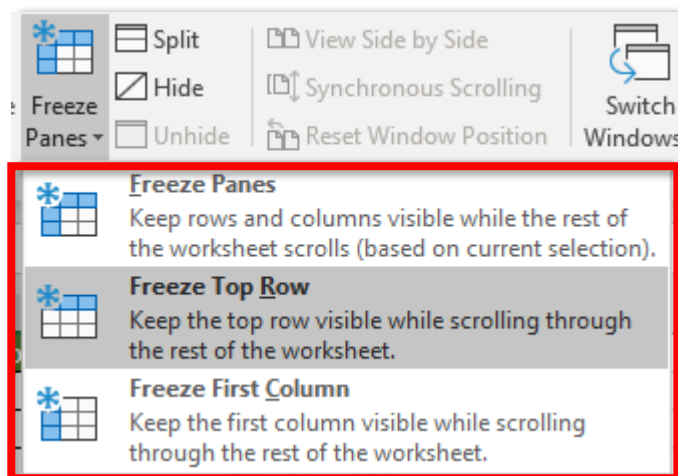
1. Select the **View** tab



2. From the **Window** group, select the **Freeze Panes** command.



3. The **Freeze Panes** command will display a drop-down menu with different options. Select the panes you want to freeze.

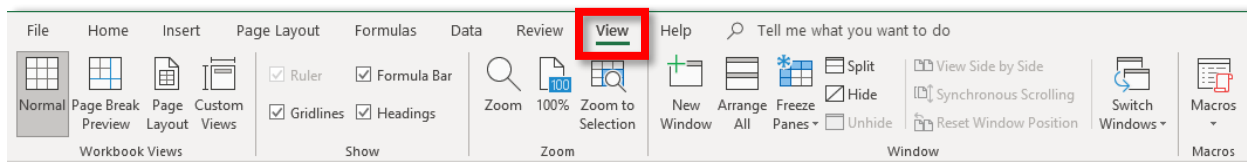


If you followed these steps correctly, you'll be able to move around your spreadsheet and still see the panes that you froze.

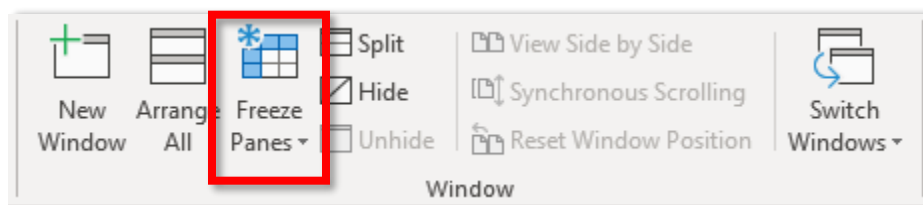
How to Unfreeze Panes

If you want to remove the frozen panes for your column or row, you'll need to follow these steps:

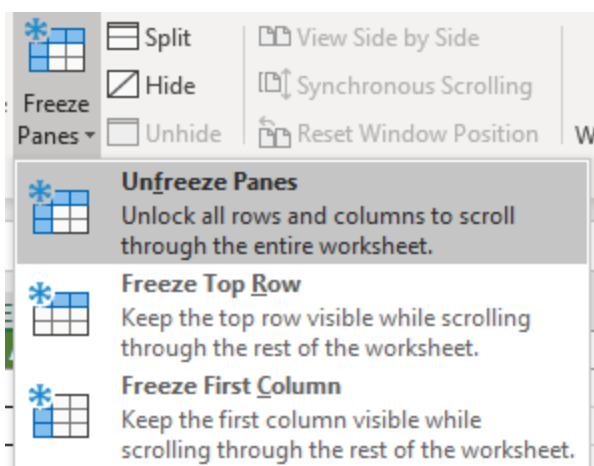
1. Select the **View** tab



2. From the **Window** group, select the **Freeze Panes** command.



- After selecting the **Freeze Panes** button, Excel will display a drop-down menu. Select the **Unfreeze Panes** option to remove the frozen panes.



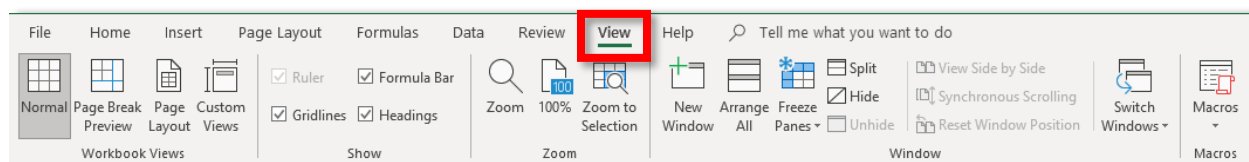
If you haven't used the **Freeze Panes** button, you will not see the **Unfreeze Panes** option from the dropdown menu. The **Unfreeze Panes** option only shows when you have used the **Freeze Panes** button.

The Split (Window) View

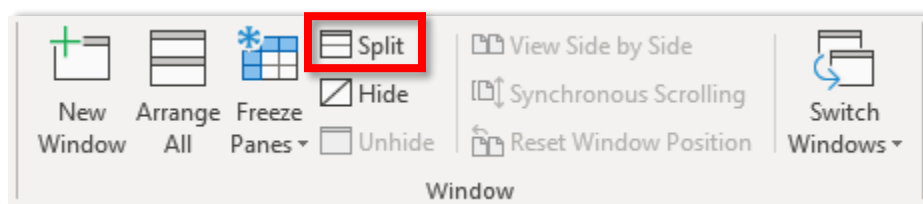
Previously, you learned how to use the **New Windows** option. Similarly, you can use the **Split** window option to view your spreadsheet across two windows. One reason you may want to use the **Split** window option is to use one window to view a still image of your data while you scroll to find information in the other window.

To use the **Split** window option:

- Select the **View** tab



- From the **Window** group, select the **Split** command.



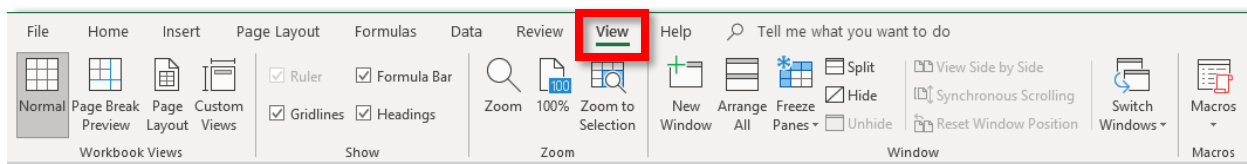
If you've followed these steps correctly, you'll see your spreadsheet visible in two screens (or windows).

E7					YES
	A	B	C	D	E
1	Customer Last Name	Customer First Name	Account ID	Account Name	Account Active?
2	Dominguez	Barbara	46941	Howard & Son Inc.	YES
3	Anthony	Rob	42897	Howard & Son Inc.	YES
4	Williams	Debon	19751	The Getaway Franchise	YES
5	Hernandez	Harold	87321	Steele Plumbing Inc.	YES
6	Ochoa	Jose	25829	Steele Plumbing Inc.	YES
7	Houston	Steven	29520	Loma Linda Unified School District	YES
8	Stevenson	Raymond	86884	ABC Study Group	YES
9	Guill	Sarah	68587	Valley Way LLC	YES
10	Quintero	Jesus	80761	Robotics R' Us	YES
11	Sanchez	Paul	64914	Robotics R' Us	YES
12	Roman	Peter	70275	MarMendez Inc.	YES

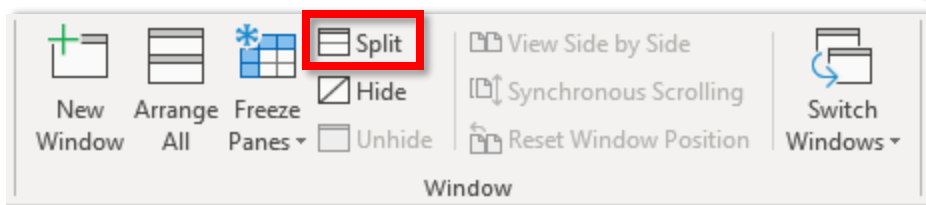
How to remove the Split Window View

To remove the Split view:

1. Select the **View** tab



2. From the **Window** group, select the **Split** command to unselect it.

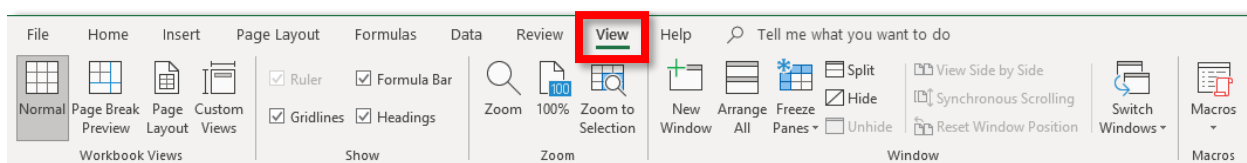


How to Hide Your Current Workbook

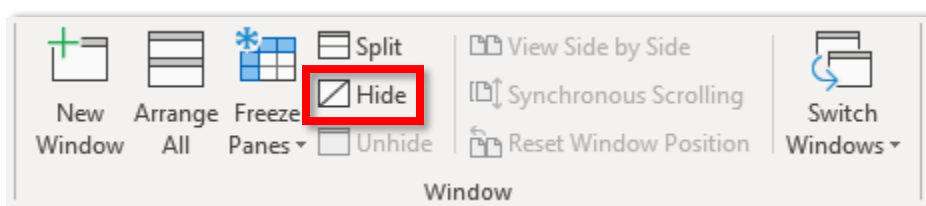
Excel allows you to hide your current workbook. Although it is unlikely that you will need to do this, you can use this feature to not display the current spreadsheet on your screen.

To hide your current workbook:

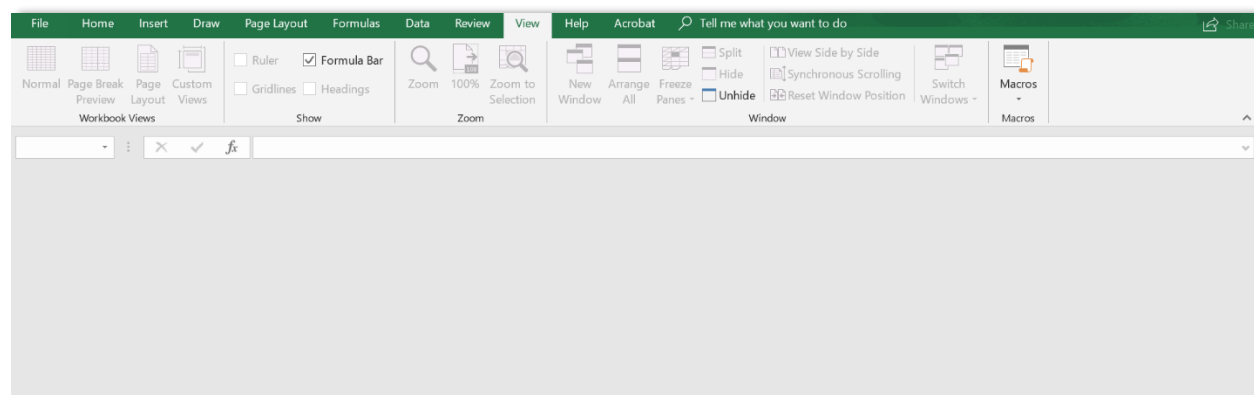
1. Select the **View** tab



2. From the **Window** group, select the **Hide** command to hide your window.



If you've followed these steps correctly, you'll find that your spreadsheet seemed to have disappeared.

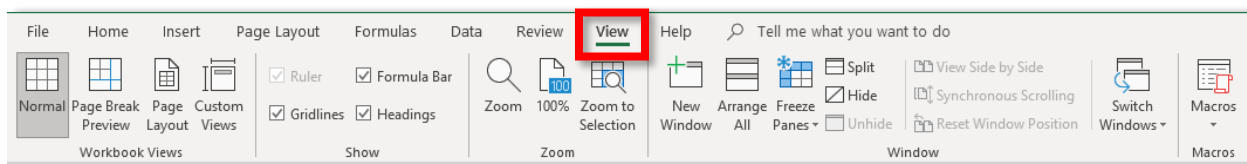


How to Unhide a Hidden Workbook

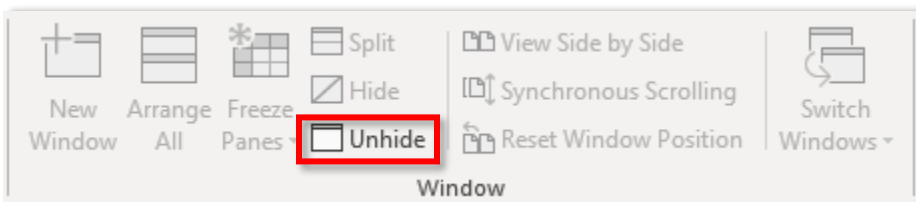
The **Unhide** window command is typically grayed out and can't be selected unless you have used the **Hide** option.

To unhide a hidden window:

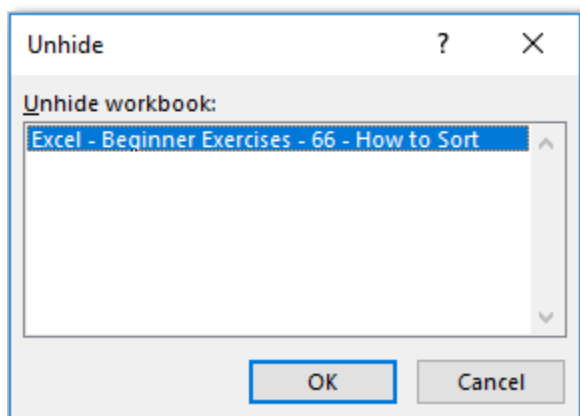
1. Select the **View** tab



2. From the **Window** group, select the **Unhide** command.



3. After selecting the **Unhide** command, Excel will display a small window with the list of windows that are hidden from your view. Select the window you want to unhide and click the **OK** button to display your workbook.



Additional Excel Functions

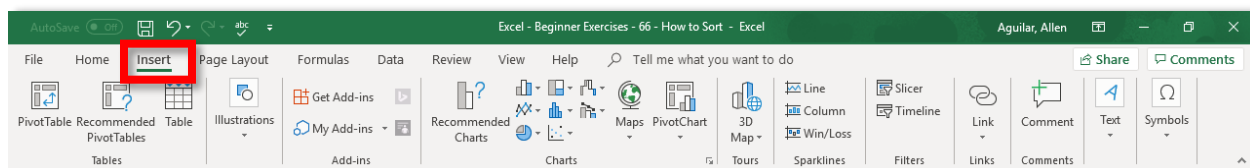
In this section, you'll learn additional Excel functions that any Excel user can use. These functions are easy to learn and can help improve efficiency when using the Excel program.

Inserting A Header to Your Sheet

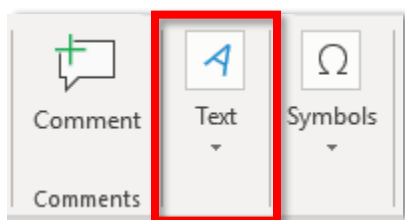
Just like with most documents, you can add a tile to your file that will print on every page. In Excel, you can add this title so that it will appear on every page after you print. This title is called a **Header**.

To add a **Header** to your spreadsheet:

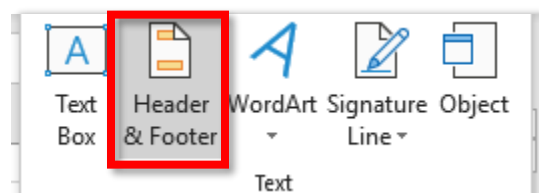
1. Click on the **Insert** tab.



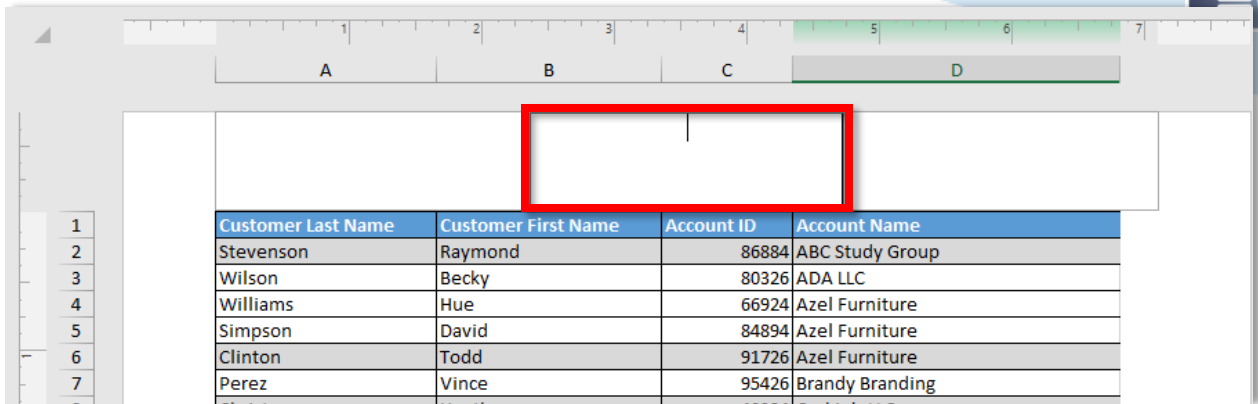
2. Select the **Text** command from the ribbon.



3. The **Text** command will display a drop-down menu with options. Select the **Header & Footer** option.



4. The **Header & Footer** command will display the **Page Layout** view. At the top of your sheet, you'll be able to type your **Header**.



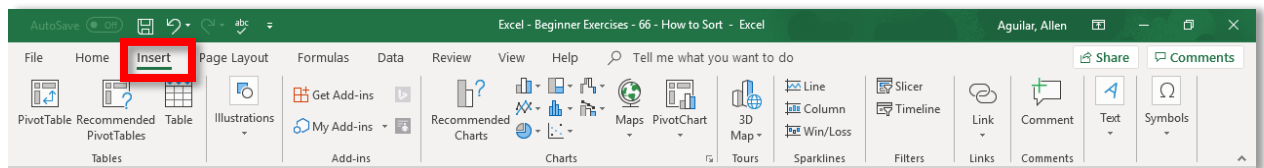
Customer Last Name	Customer First Name	Account ID	Account Name
Stevenson	Raymond	86884	ABC Study Group
Wilson	Becky	80326	ADA LLC
Williams	Hue	66924	Azel Furniture
Simpson	David	84894	Azel Furniture
Clinton	Todd	91726	Azel Furniture
Perez	Vince	95426	Brandy Branding

Inserting a Footer to Your Sheet

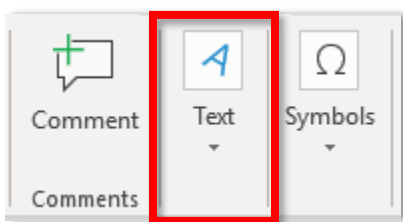
The **Footer** is an area at the bottom of your spreadsheet that you can include on every single page when you print your workbook.

To add a **Footer** to your spreadsheet:

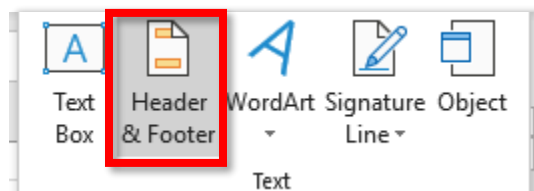
1. Click on the **Insert** tab.



2. Select the **Text** command from the ribbon.



3. The **Text** command will display a drop-down menu with options. Select the **Header & Footer** option.



4. The **Header & Footer** command will display the **Page Layout** view. Scroll down to the bottom of the spreadsheet until you see an area with the words *Add Footer*. Click on the *Add Footer* section to add your **Footer**.

	A	B	C	D
33	Ochoa	Jose	25829	Steele Plumbing Inc.
34	Hernandez	Harold	87321	Steele Plumbing Inc.
35	Young	David	34131	StoneCold LLC
36	Medina	Bill	23668	String O Rama
37	Mendez	Jorge	84284	Swiss Cheese Inc.
38	Williams	Debon	19751	The Getaway Franchise
39	Ochoa	Warren	94827	The Shades Store
40	Aguilera	Jose	71285	TheHub.com
41	Guill	Sarah	68587	Valley Way LLC
42	Fernandez	Juan	51680	XLT Inc.
43				
44				
45				
46				
47				
48				
49				

Add footer

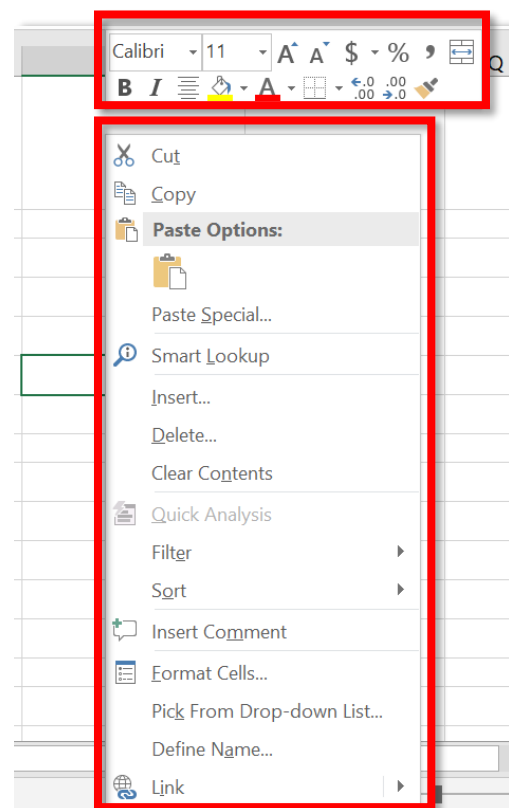
Right-Clicking

Currently, we have covered most of the ribbon on the **Home** tab. Obviously, it's difficult to memorize where all these buttons are located when using Excel. This is why we also recommend to use shortcuts when using Excel. Although some shortcuts require you to press a few buttons on your keyboard, another alternative is to right-click on a cell, column or row.

When right-clicking on a cell, column, or row you will find that two menus will appear for you to use. Most of the options in these two menus are exactly what you would find in the **Home** tab.

To try this out, just right-click on a cell and compare the top menu and the bottom menu to the commands available in the **Home** tab ribbon. Notice that the top menu is used for font changes, number styles and format painting. The bottom menu allows you to cut, copy, insert and delete items.

As you continue to learn more about the different functions of Excel, try using the right-click option to speed up the process of getting things done. This might help you save some time instead of continuously navigating through the



different ribbons that Excel has available. Plus, Excel is constantly changing the user interface, but the right-click menus typically stay the same.

Hiding & Grouping Commands

Previously, you learned how to hide columns, rows and sheets. In Excel, it is very common to hide columns or rows you don't need to see. As stated previously, there is an alternative to hiding your data, and that alternative is called **Grouping**.

Hiding vs Grouping Columns and Rows

Hiding columns can be problematic when working with a lot of data because you may forget that you hid a few columns, or you may be sharing an Excel file and were never informed that there were some rows hidden. In this case, the better option is to use the *Outline* functionality called **Grouping**. **Grouping** columns or rows allows you to collapse or expand your hidden columns or rows and makes it clear where data is hidden.

	A	B	C	D	E
1	Customer Last Name	Customer First Name	Account ID	Account Name	Account Active?
2	Stevenson	Raymond	86884	ABC Study Group	YES
3	Wilson	Becky	80326	ADA LLC	YES
4	Williams	Hue	66924	Azel Furniture	YES
5	Simpson	David	84894	Azel Furniture	YES

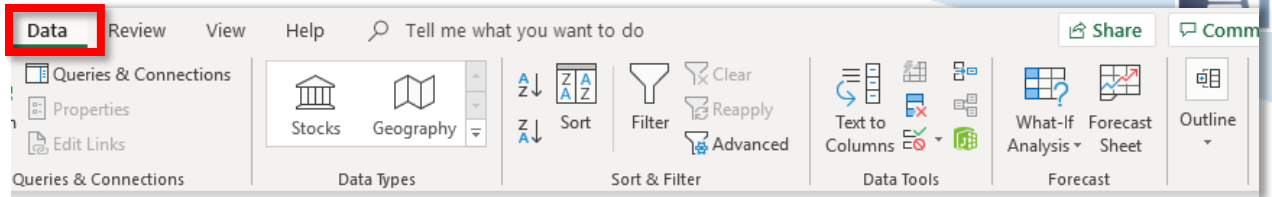
How to Use the Group Function

To use the **Group** function:

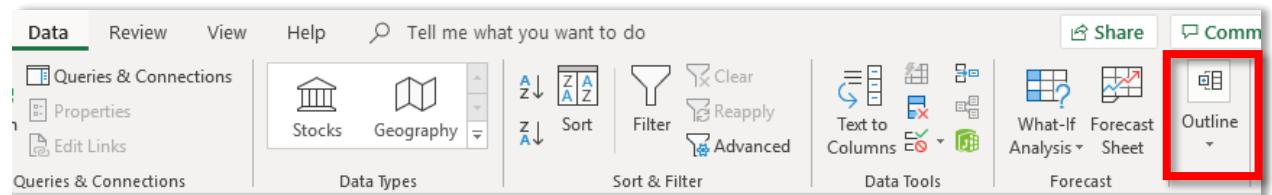
1. Select the column(s) or row(s) you want to group.

	A	B	C	D	E
1	Customer Last Name	Customer First Name	Account ID	Account Active?	Account Name
2	Stevenson	Raymond	86884	YES	ABC Study Group
3	Wilson	Becky	80326	YES	ADA LLC
4	Williams	Hue	66924	YES	Azel Furniture
5	Simpson	David	84894	YES	Azel Furniture
6	Clinton	Todd	91726	YES	Azel Furniture
7	Perez	Vince	95426	YES	Brandy Branding

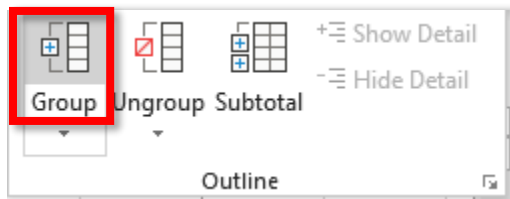
2. Navigate to the Data Tab



3. Select the **Outline** command. In some Excel versions, there may not be an **Outline** command, in which you'll just need to skip to step 4.



4. The **Outline** command will display a drop-down menu. From the drop-down menu, select the **Group** option.



5. Selecting the **Group** command will add an *outline* or an expandable line across the columns or rows you selected. Click on the minus symbol to contract the columns or rows.

	A	B	C	D	E
1	Customer Last Name	Customer First Name	Account ID	Account Active?	Account Name
2	Stevenson	Raymond	86884	YES	ABC Study Group
3	Wilson	Becky	80326	YES	ADA LLC
4	Williams	Hue	66924	YES	Azel Furniture
5	Simpson	David	84894	YES	Azel Furniture

6. If you followed these steps correctly, you'll find that the columns or rows that you selected are now hidden or grouped. To display the grouped columns or rows, click on the plus symbol.

1			
2			
	A	B	E
1	Customer Last Name	Customer First Name	Account Name
2	Stevenson	Raymond	ABC Study Group
3	Wilson	Becky	ADA LLC
4	Williams	Hue	Azel Furniture
5	Simpson	David	Azel Furniture

Ungrouping Columns or Rows

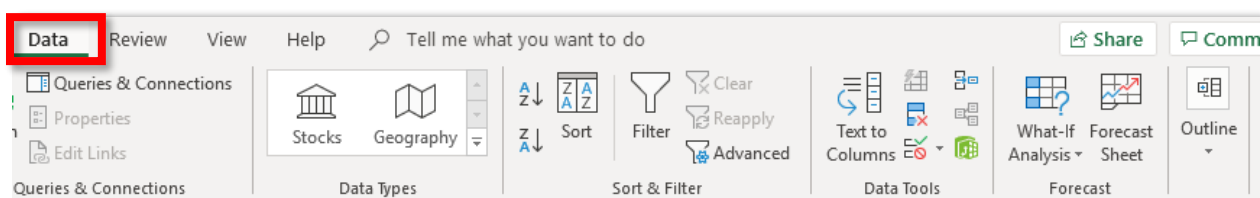
If you no longer want your columns or rows grouped, you'll need to ungroup those columns or rows.

To ungroup columns or rows:

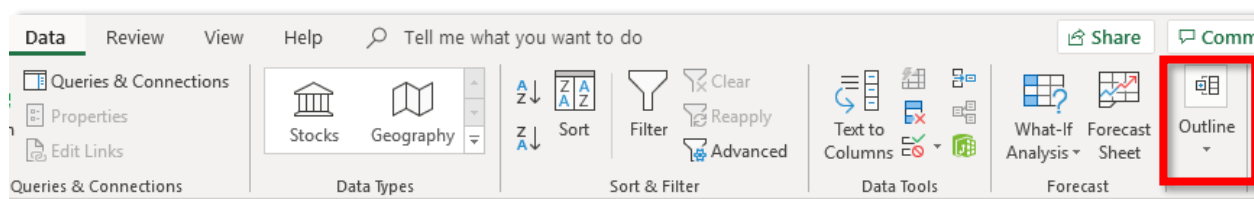
1. Select the column(s) or row(s) you want to ungroup.

1				
2				
	A	B	C	D
1	Customer Last Name	Customer First Name	Account ID	Account Active?
2	Stevenson	Raymond	86884	YES
3	Wilson	Becky	80326	YES
4	Williams	Hue	66924	YES
5	Simpson	David	84894	YES

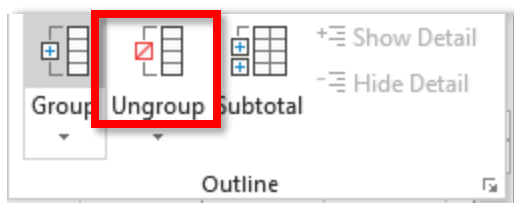
2. Navigate to the Data Tab



3. Select the **Outline** command. In some Excel versions, there may not be an **Outline** command, in which you'll just need to skip to step 4.



4. The **Outline** command will display a drop-down menu. From the drop-down menu, select the **Ungroup** option.



5. Selecting the **Ungroup** command will remove the *outline* feature and your columns or rows will no longer be grouped.

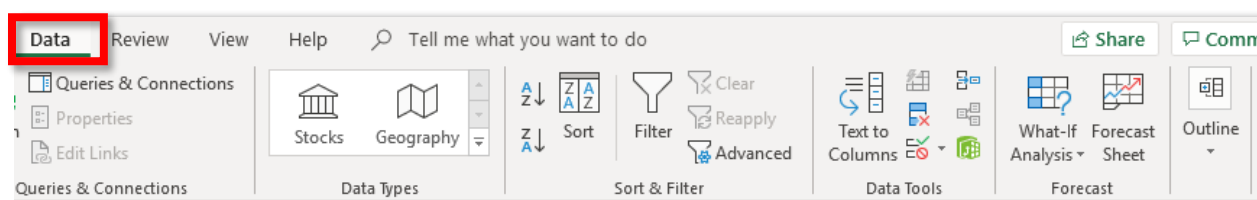
	A	B	C	D	E
1	Customer Last Name	Customer First Name	Account ID	Account Active?	Account Name
2	Stevenson	Raymond	86884	YES	ABC Study Group
3	Wilson	Becky	80326	YES	ADA LLC
4	Williams	Hue	66924	YES	Azel Furniture
5	Simpson	David	84894	YES	Azel Furniture
6	Clinton	Todd	91726	YES	Azel Furniture
7	Perez	Vince	95426	YES	Brandy Branding

Removing Duplicates

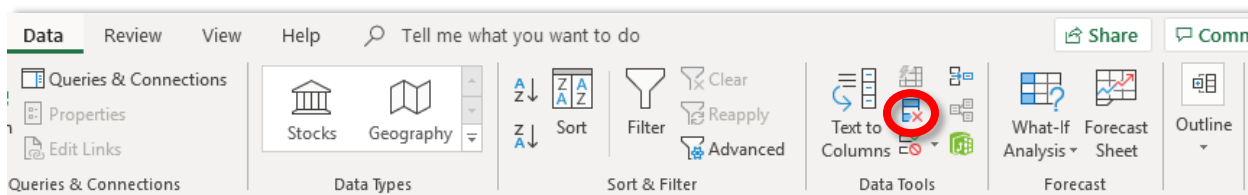
Excel understand that we sometimes make mistakes, which is why there are many functions that users can use to correct mistakes. One such mistake that most Excel users commonly make is misspelling or accidentally creating duplicate entries. In this section you'll learn how to use the **Remove Duplicates** command in Excel. The **Remove Duplicates** function in Excel will identify all duplicate entries and remove them from your table or data.

To use the **Remove Duplicates** command:

1. Click in any cell within your data.
2. Navigate to the Data Tab

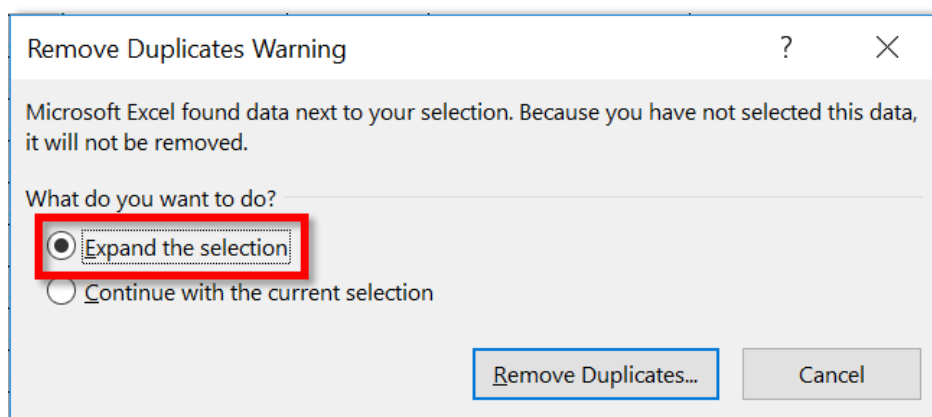


3. In the **Data Tools** group, select the **Remove Duplicates** command.

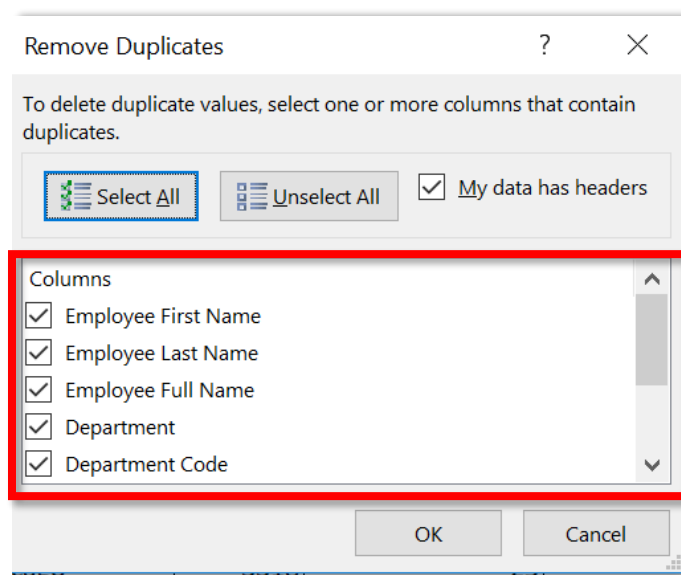


4. Selecting the **Remove Duplicates** command will display a dialog box. Excel will identify that you have more data than one cell and wants to expand your selection

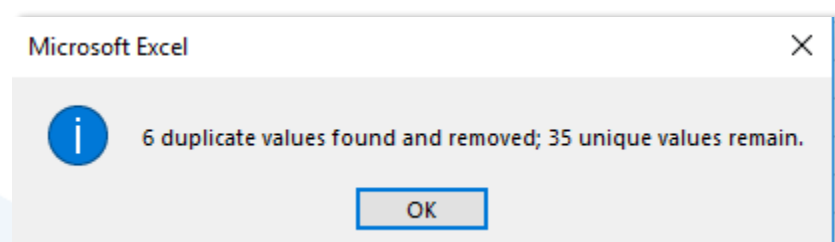
to include all your data, which will allow you to select additional criteria. Select the *Expand the selection* option and click on the **Remove Duplicates** button.



5. Selecting the **Expand the selection** option will prompt another pop-up window where you get to pick and choose which data will determine the duplicate entries to remove. Check the appropriate boxes and select the **OK** button.



6. Excel will then remove your duplicates and display a box with the number of duplicates that it removed and the number of entries that remain. Select the **OK** button to complete the process.



Data Validation

Many times, spreadsheets are shared within an organization, department or coworkers and with so many hands using one spreadsheet, things can go wrong. This is particularly true when spreadsheets are heavily used for data entry. When many people enter data onto spreadsheets, there could be a lot of misspellings and errors. To control the input from users, you can use the **Data Validation** function. The **Data Validation** function allows you to use drop-down lists or to limit the type of data used for entry. This helps keep the spreadsheet clean and improves the data integrity of the users.

Things to Consider When Using Data Validation

Before you set up a criterion for your **Data Validation**, decide what type of validation you want. Can users type any number? Should entries be restricted to certain digits or characters? Should entries be restricted to certain choices? Do you want to exclusively provide the entries for users instead of relying on their typing?

These questions will help you better set up the **Data Validation** feature in Excel.

How to Restrict Entries in Cells

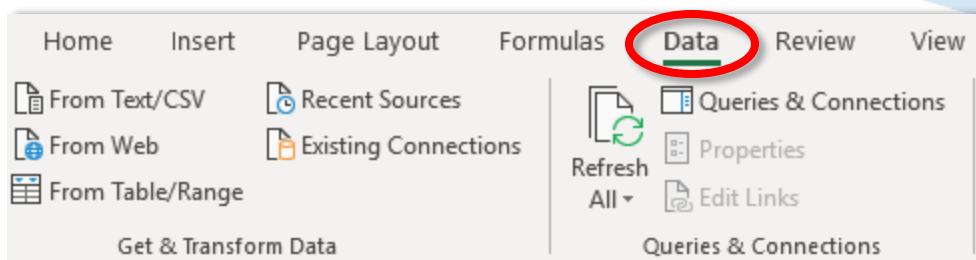
After you made your decision on how you want to use **Data Validation**, it is time to restrict the type of entries available to people who use your spreadsheet.

To restrict the type of entries in your cells and set up **Data Validation**:

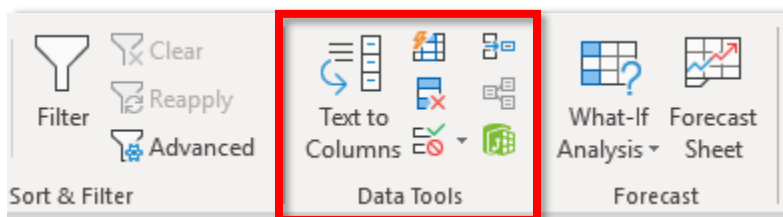
1. Select the cell(s) or column(s) where you want to include a drop-down menu to validate the data.

	A	B	C	D
1	Customer Last Name ▾	Customer First Name ▾	Account ID ▾	Membership Type ▾
2	Dominguez	Barbara	46941	
3	Anthony	Rob	42897	
4	Williams	Debon	19751	
5	Hernandez	Harold	87321	
6	Ochoa	Jose	25829	
7	Houston	Steven	29520	
8	Stevenson	Raymond	86884	
9	Guill	Sarah	68587	
10	Quintero	Jesus	80761	

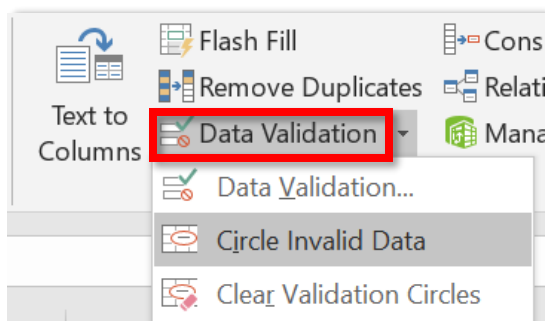
2. Navigate to the **Data** tab.



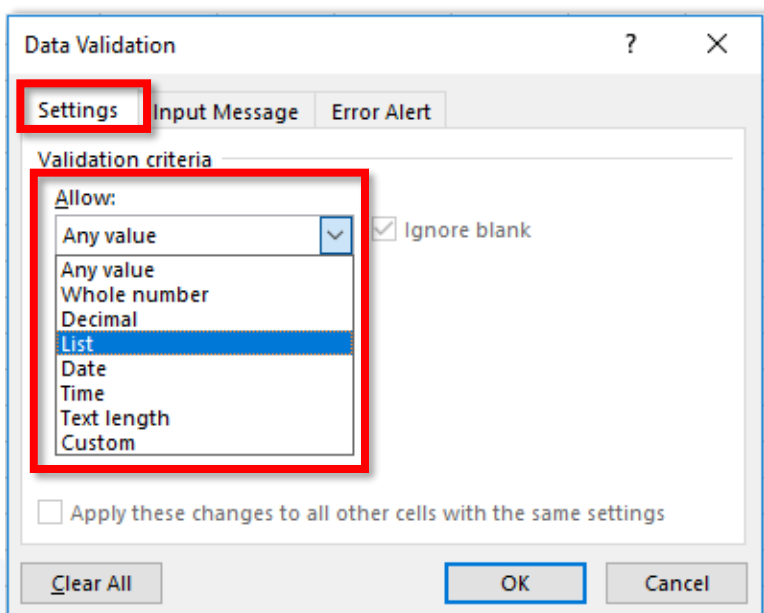
3. Locate the **Data Tools** group.



4. Select the **Data Validation** command.



5. Selecting **Data Validation** will display a window. Select the type of validation you want to allow in the cells that you selected and make additional changes to your settings in this window.



You can decide to only allow users to input whole numbers, dates, or restrict the number of characters they can enter by choosing the *Text length* option. The most popular type of **Data Validation** is the *List* which we will explore further in the next section.

How to Use A Manual List for Data Validation

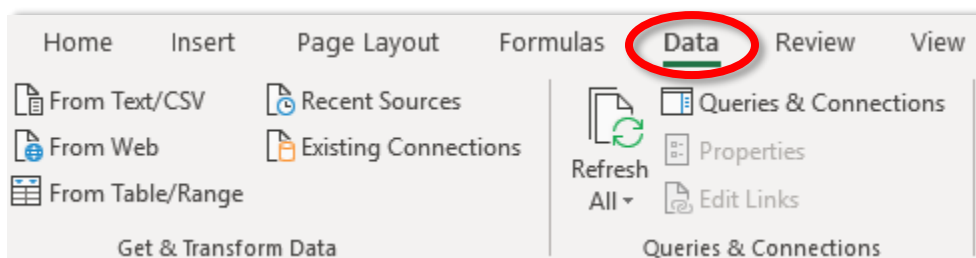
The **Data Validation** function is easy to set up and will help control the data integrity of your spreadsheet. In this section you'll learn how to create a drop-down menu inside the cells that allows users to pick the entry allowed in that cell while prohibiting the user from typing any other data.

To set up a list for your **Data Validation**:

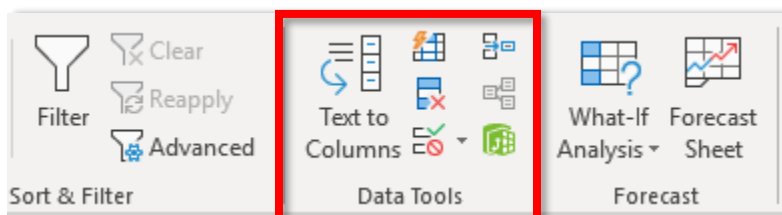
1. Select the cell(s) or column(s) where you want to include a drop-down menu to validate the data.

	A	B	C	D
1	Customer Last Name	Customer First Name	Account ID	Membership Type
2	Dominguez	Barbara	46941	
3	Anthony	Rob	42897	
4	Williams	Debon	19751	
5	Hernandez	Harold	87321	
6	Ochoa	Jose	25829	
7	Houston	Steven	29520	
8	Stevenson	Raymond	86884	
9	Guill	Sarah	68587	
10	Quintero	Jesus	80761	

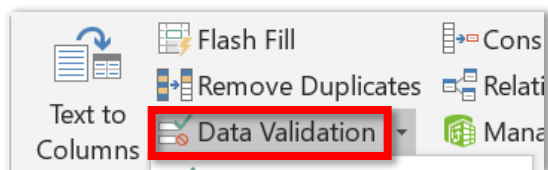
2. Navigate to the **Data** tab.



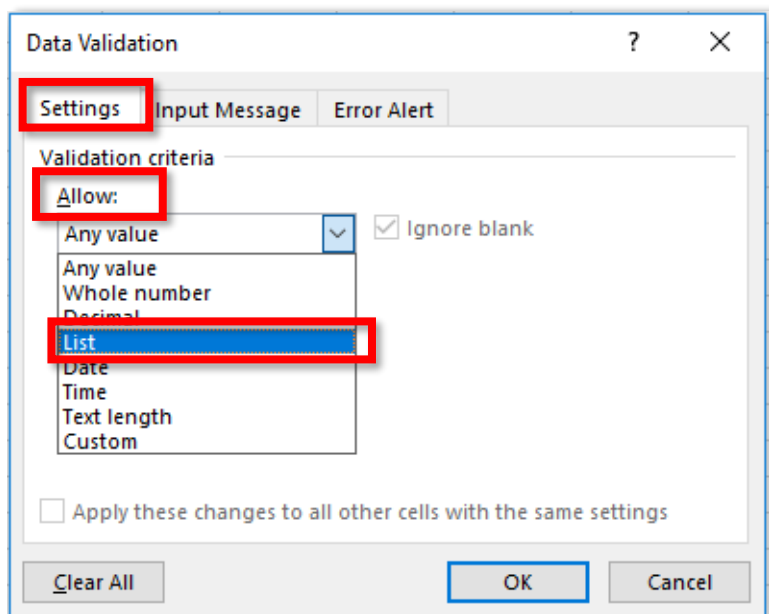
3. Locate the **Data Tools** group.



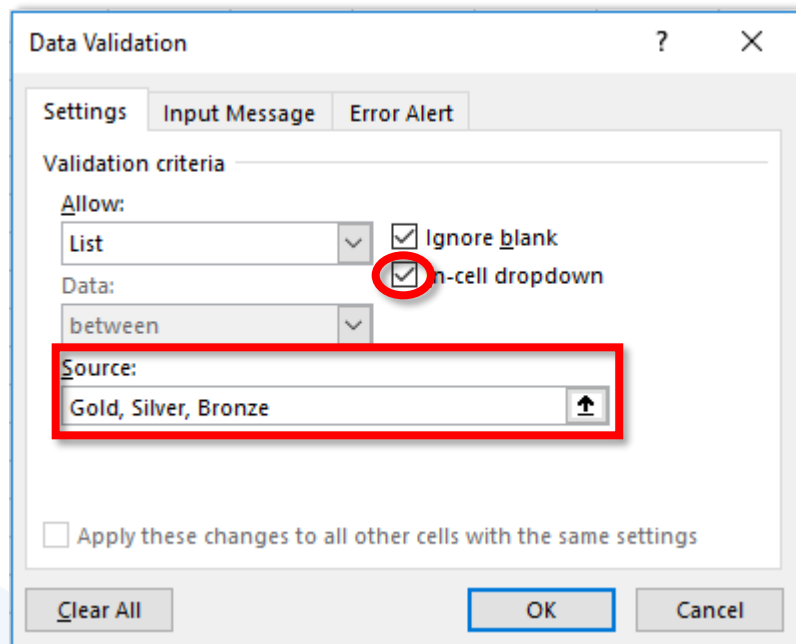
4. Select the **Data Validation** command.



5. Selecting **Data Validation** will display a window. In the *Allow* area, change the option to *List* to restrict your values to a list that you provide.



6. After selecting *List* as your option, type the available entries for these cells by separating them by a comma in the *Source* section of the window. To allow a drop-down menu in the cells, make sure to check the box that says *In-cell dropdown*.



- Click the **OK** button when finished.

You will know that you followed these steps correctly if your cells now include a drop-down menu with the options you manually typed as a list.

	A	B	C	D	
1	Customer Last Name ▼	Customer First Name ▼	Account ID ▼	Membership Type ▼	Acc
2	Dominguez	Barbara	46941		Ho
3	Anthony	Rob	42897		Ho
4	Williams	Debon	19751		
5	Hernandez	Harold	87321	Gold	
6	Ochoa	Jose	25829	Silver	
7	Houston	Steven	29520	Bronze	Lor
8	Stevenson	Raymond	86884		AB

How to Use A Table or List for Data Validation

If you have a long list you would like to include as a drop-down menu in a cell or your list is constantly changing or growing, then you may want to use a table as a source instead of manually typing your list.

To use a table or list for **Data Validation**:

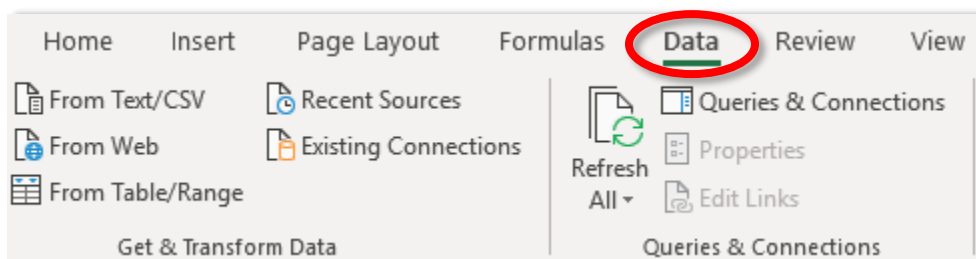
- Create or locate a table that you have available in your workbook.

	A	B
1	January	
2	February	
3	March	
4	April	
5	May	
6	June	
7	July	
8	August	

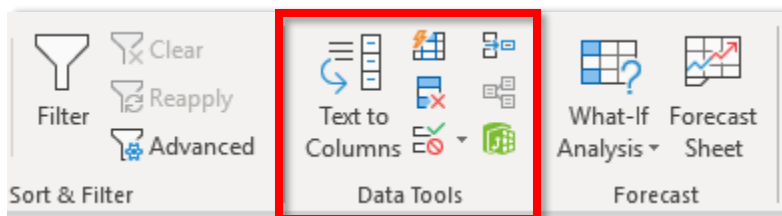
- Select the cell(s) or column(s) where you want to include a drop-down menu to validate the data.

1	Customer Last Name	Customer First Name	Account ID	Membership Type
2	Dominguez	Barbara	46941	
3	Anthony	Rob	42897	
4	Williams	Debon	19751	
5	Hernandez	Harold	87321	
6	Ochoa	Jose	25829	
7	Houston	Steven	29520	
8	Stevenson	Raymond	86884	
9	Guill	Sarah	68587	
10	Quintero	Jesus	80761	

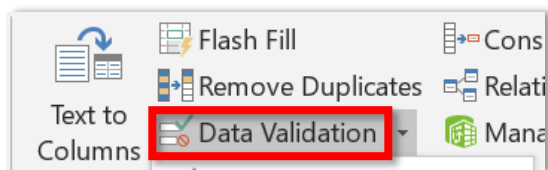
3. Navigate to the **Data** tab.



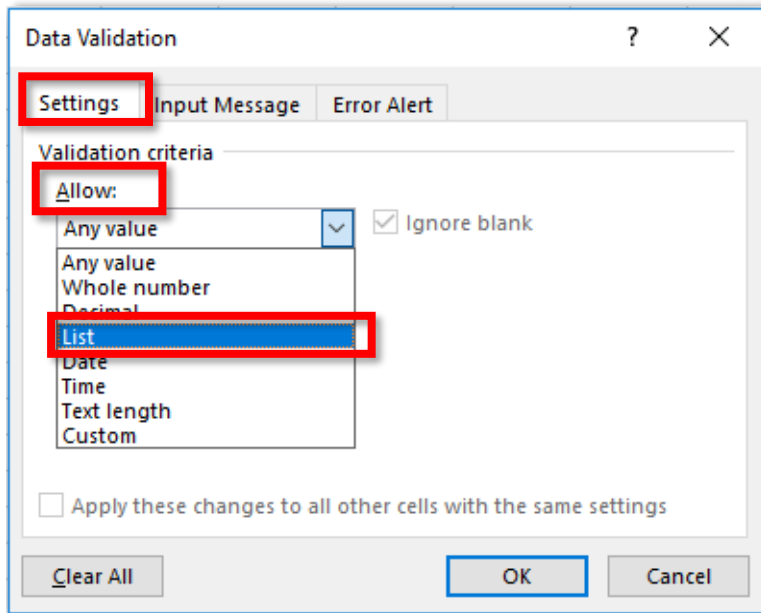
4. Locate the **Data Tools** group.



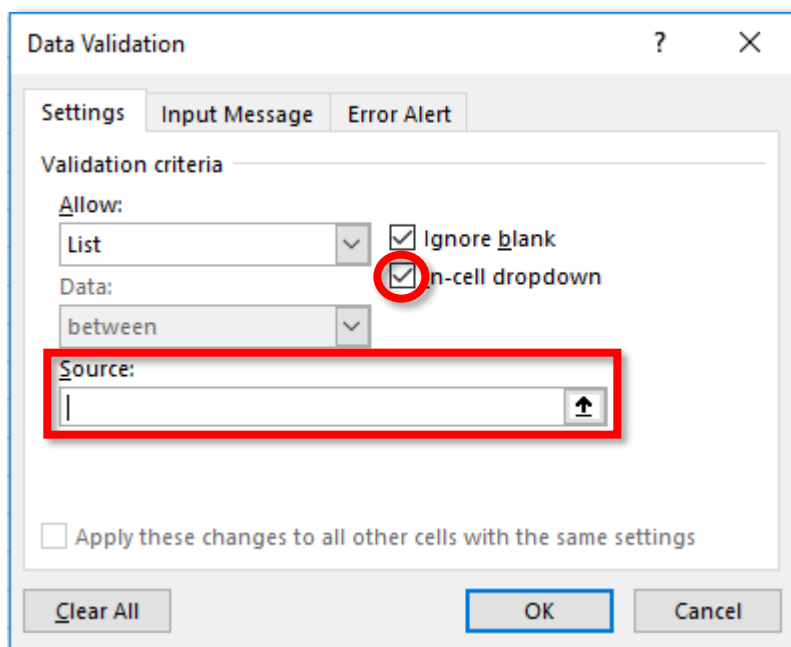
5. Select the **Data Validation** command.



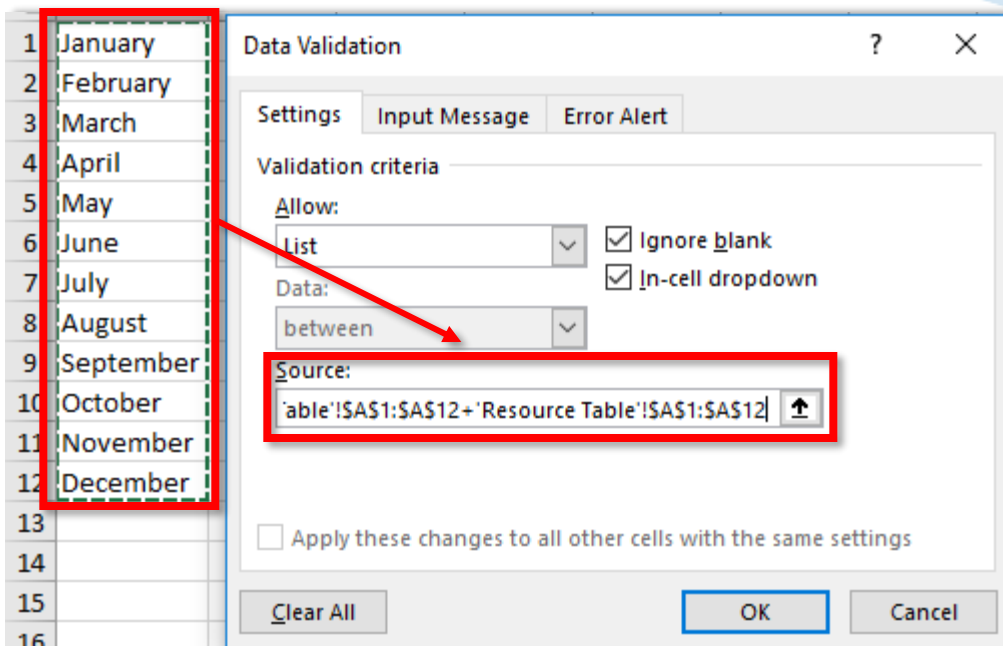
6. Selecting **Data Validation** will display a window. In the *Allow* area of the **Settings** section, change the option to *List* which will change the cells' restriction from any input to values only available in a list that you provide.



7. After selecting *List* as your option make sure that the *In-cell dropdown* box is checked. Click in the *Source* section of the window.

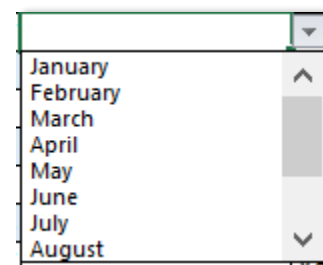


8. After clicking on the *Source* section of the window, select the list you created (from Step 1).



9. Click the **OK** button when you are finished.

You will know that you followed these steps correctly if your cells now include a drop-down menu that align with the table that you selected.



How to Change the Input Message When Entering Data

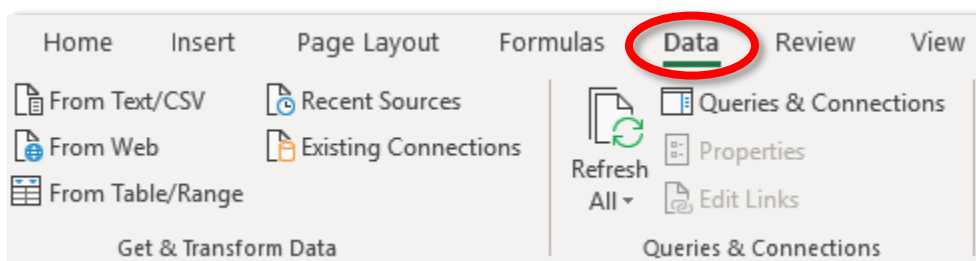
Excel gives you the option to provide an **Input Message**, which is more like a Help window for the users entering data in cells where you use **Data Validation**. The **Input Message** may appear any time that someone clicks on a cell that has the **Data Validation** enabled. For example, we can include an **Input Message** as a quick explanation of what someone should enter in this cell.

To change the **Input Message** for your **Data Validation** cells:

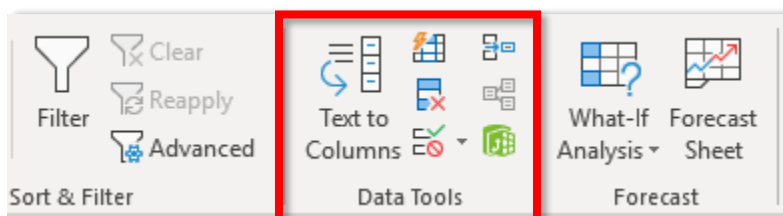
1. Select the cell(s) or column(s) where you want to include an **Input Message**.

1	Customer Last Name	Customer First Name	Account ID	Membership Type
2	Dominguez	Barbara	46941	
3	Anthony	Rob	42897	
4	Williams	Debon	19751	
5	Hernandez	Harold	87321	
6	Ochoa	Jose	25829	
7	Houston	Steven	29520	
8	Stevenson	Raymond	86884	
9	Guill	Sarah	68587	
10	Quintero	Jesus	80761	

2. Navigate to the **Data** tab.



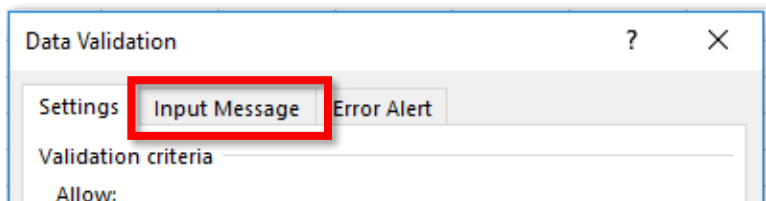
3. Locate the **Data Tools** group.



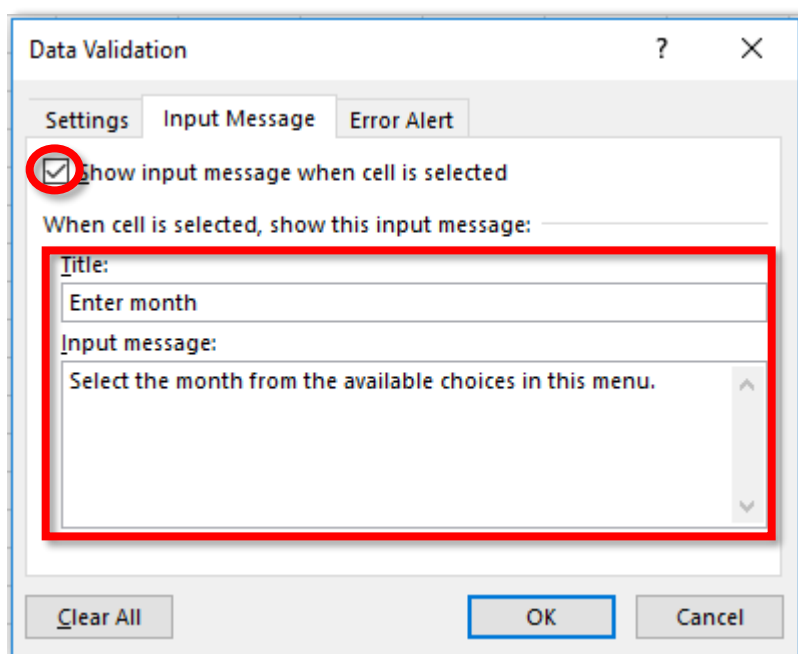
4. Select the **Data Validation** command.



5. Selecting **Data Validation** will display a window. By default, you will view the *Settings* section. Make sure that you click on the *Input Message* section instead.

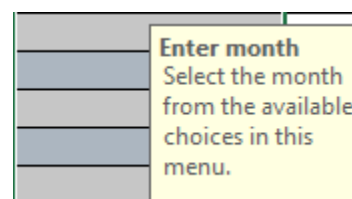


- After selecting the *Input Message* section, make sure that the *Show input message when cell is selected* box is checked. Add a title for your message and include the message in the boxes available.



- Click the **OK** button when finished.

You'll know that you followed these steps correctly because your message will appear anytime someone clicks on any of the cells with **Data Validation**.



How to Customize the Error Alert in a Data Validation List

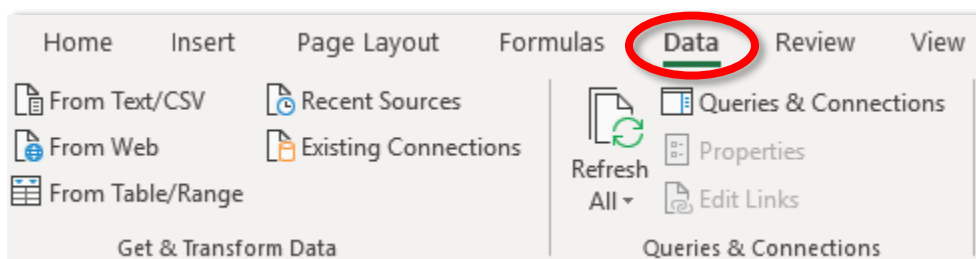
Another thing you can customize when using **Data Validation** is the error message that users receive when they type something that is not included in your **Data Validation** list.

To customize the **Error Alert** of your **Data Validation** list:

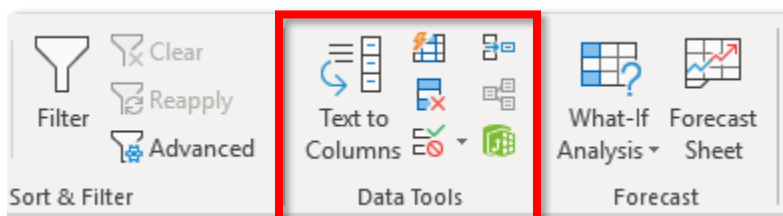
1. Select the cell(s) or column(s) where you want to include your **Error Alert**.

1	Customer Last Name	Customer First Name	Account ID	Membership Type
2	Dominguez	Barbara	46941	
3	Anthony	Rob	42897	
4	Williams	Debon	19751	
5	Hernandez	Harold	87321	
6	Ochoa	Jose	25829	
7	Houston	Steven	29520	
8	Stevenson	Raymond	86884	
9	Guill	Sarah	68587	
10	Quintero	Jesus	80761	

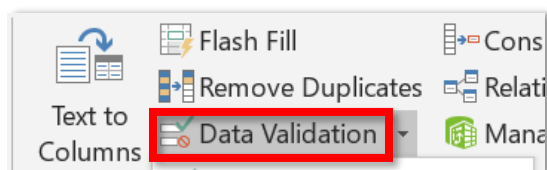
2. Navigate to the **Data** tab.



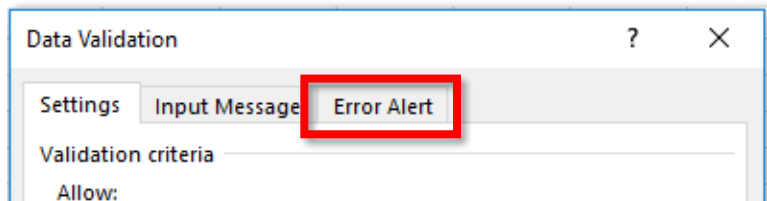
3. Locate the **Data Tools** group.



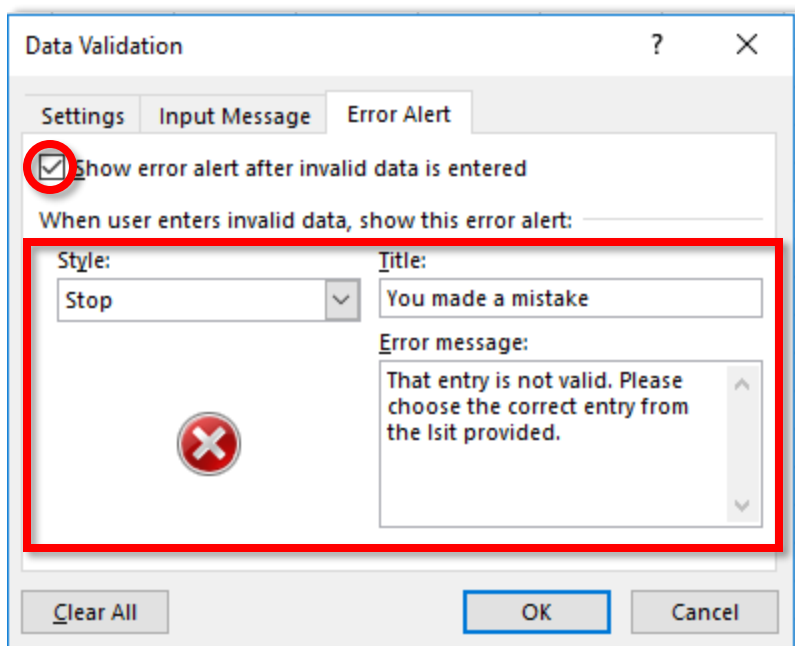
4. Select the **Data Validation** command.



5. Selecting **Data Validation** will display a window. By default, you will view the *Settings* section. Make sure that you click on the *Error Alert* section instead.

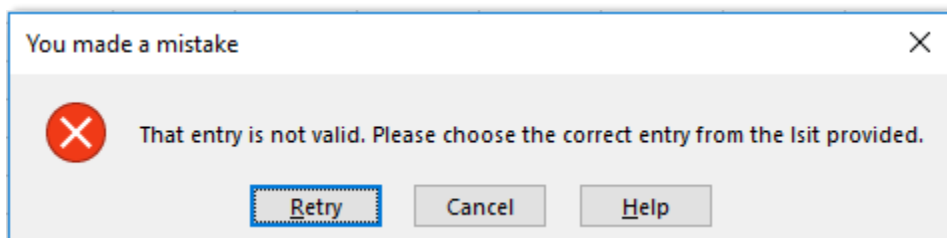


- After selecting the *Error Alert* section, make sure that the *Show error alert after invalid data is entered* box is checked. Afterwards, select the style of the error icon, include a title and write your error message in the spaces provided.



- Click the **OK** button when finished.

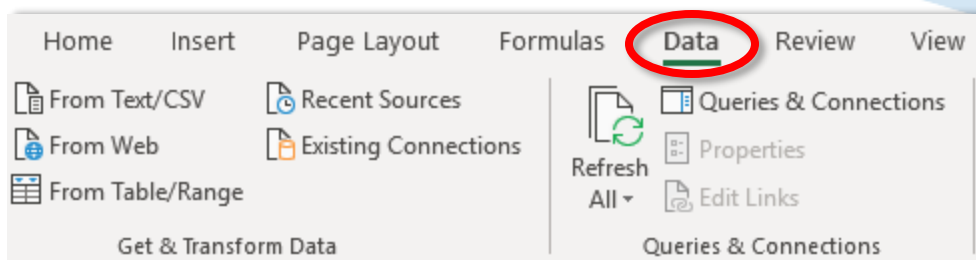
You'll know that you followed these steps correctly if your error message displays when entering an invalid value in the cells you selected.



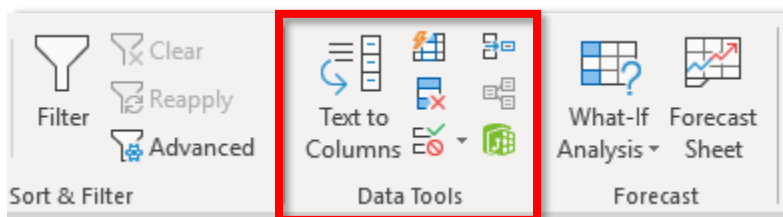
The Circle Invalid Data Option

If you use a **Data Validation** list, Excel will not allow anyone to type any entries that are not included in your list. However, if there were already entries in those cells before you enabled your **Data Validation** list, Excel will not remove those entries that were in those cells prior to your **Data Validation** setup. Yet, Excel does have an option where you can easily identify which cells include invalid entries. This option is called the **Circle Invalid Data** option.

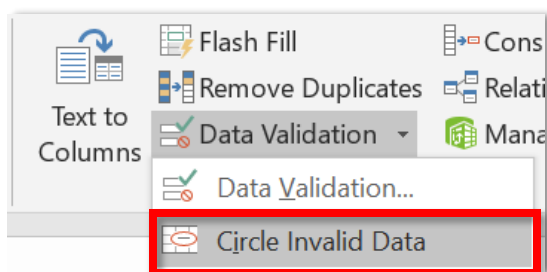
- Navigate to the **Data** tab.



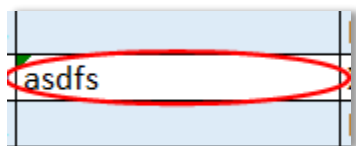
2. Locate the **Data Tools** group.



3. Select the **Data Validation** command and choose the **Circle Invalid Data** option from the drop-down menu.



You'll know that you followed the steps correctly because any invalid inputs will be automatically circled in red.

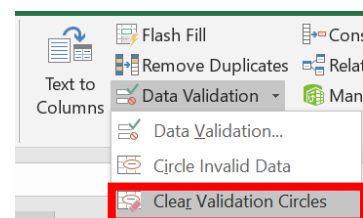


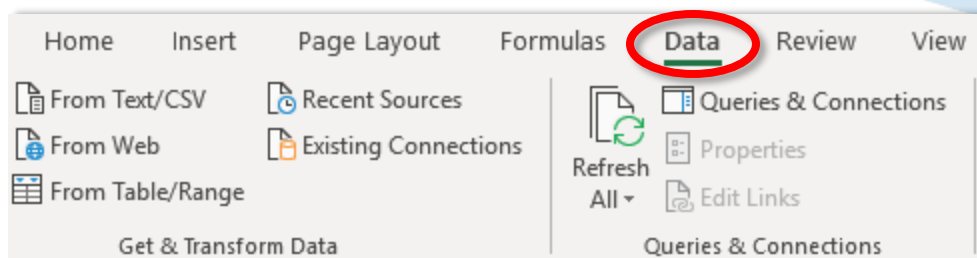
Clear Validation Circles

If you added the circles for invalid data, Excel gives you the option to remove those circles.

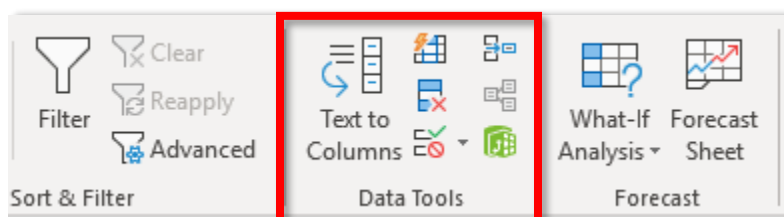
To remove the validation circles:

1. Navigate to the **Data** tab.

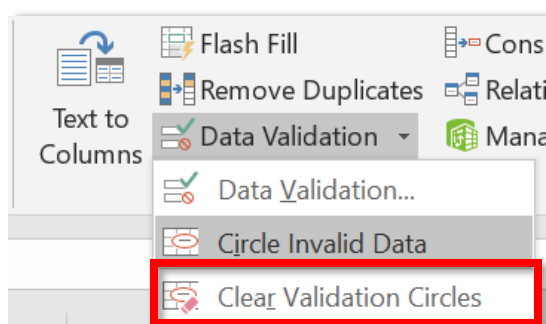




2. Locate the **Data Tools** group.



3. Select the **Data Validation** command and choose the **Clear Validation Circles** option from the drop-down menu.



You'll know that you followed these steps correctly if your validation circles disappear.

Protecting Your Sheet or Workbook

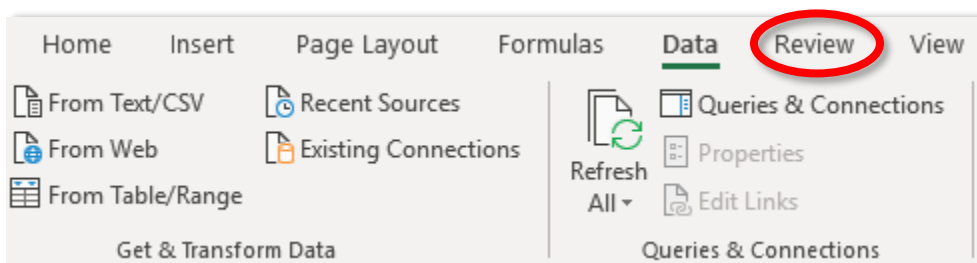
Microsoft understand that many organizations want to ensure that their data is safe especially when it is shared across staff, departments or customers. Microsoft easily allows its users to password-protect the data. In this section we will cover a few ways that you can protect your sheet and workbook.

How to Password-Protect Your Workbook

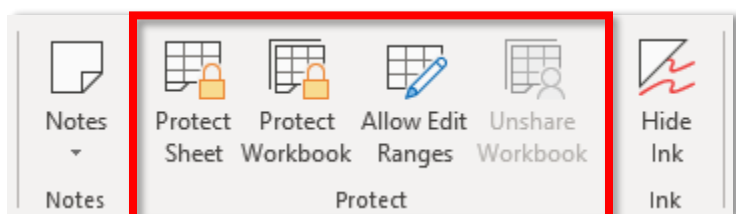
More and more companies are taking extra measures to make sure that their data doesn't fall into the wrong hands. Even if your spreadsheet will be shared with a client, it is best to password-protect your workbook, especially if you're sending the file via email. Basically, if you protect the workbook, you protect the file.

To password-protect your workbook:

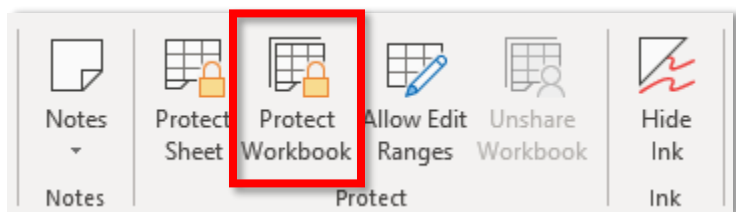
1. Navigate to the **Review** tab



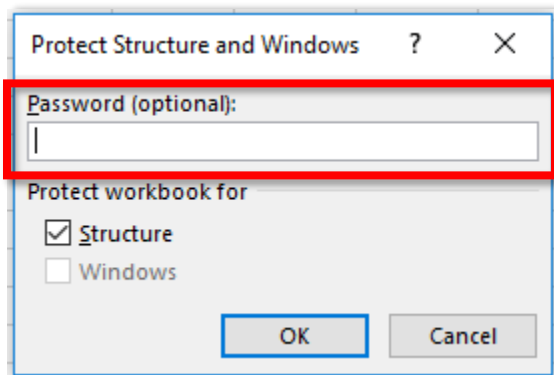
2. Locate the **Protect** group.



3. Select the **Protect Workbook** command.



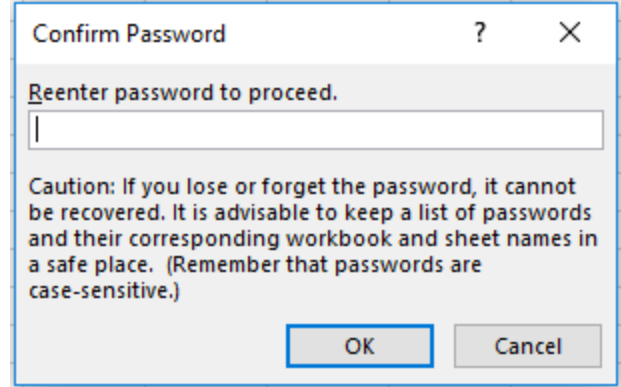
4. After selecting **Protect Workbook**, a small window will appear, asking you enter a password. Type the password of your choice.



5. Select the **OK** button.

- After pressing the **OK** button, a second window will appear, asking you to re-enter the password. Re-enter your password and press **OK**.

Please note that there is no way to recover this password. If you forget this password, you will not be able to open this file any more. You'll know that you followed these steps correctly because any time that someone opens this file, Excel will ask for the password.

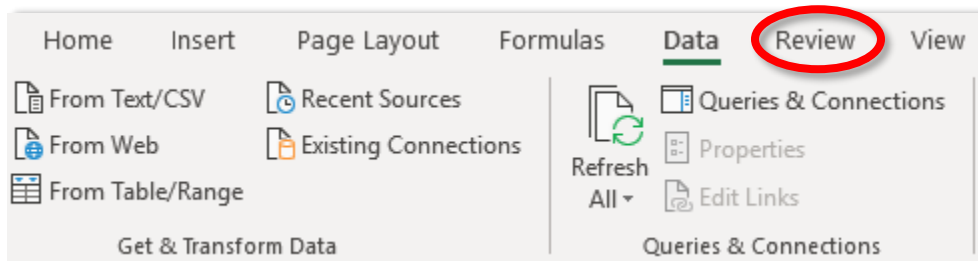


How to Remove the Password-Protection of Your Workbook

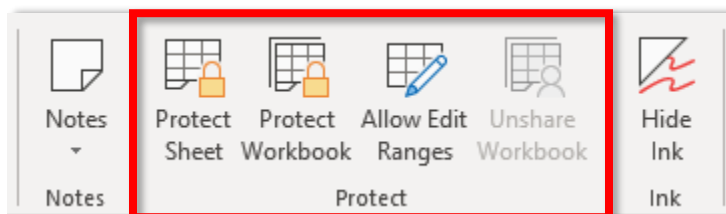
If you no longer want the workbook to be password-protected, you can easily remove it. However, you will need the original password you used to protect the workbook.

To remove the password-protection of your workbook:

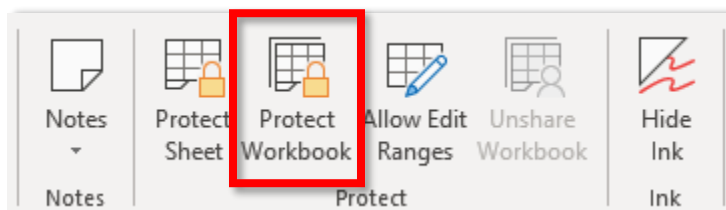
- Navigate to the **Review** tab



- Locate the **Protect** group.

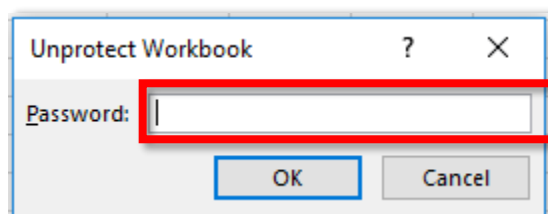


- Select the **Protect Workbook** command.



4. After unselecting **Protect Workbook**, a small window will appear asking you for your password. Enter the password and select the **OK** button.

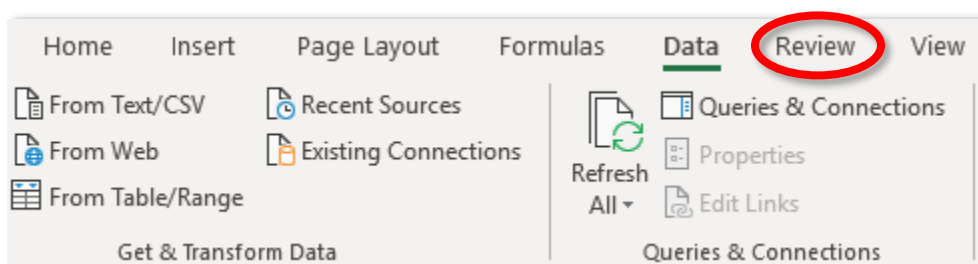
You'll know that you followed these steps correctly if (1) you don't see the **Protect Workbook** command selected and (2) if Excel no longer asks you a password when you open this file.



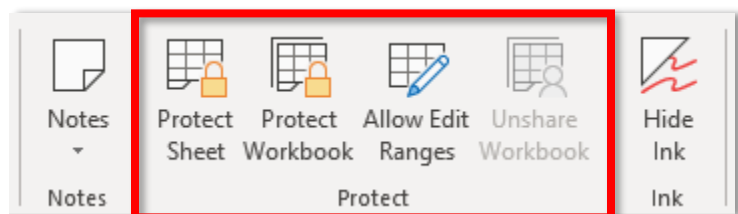
Protecting Your Sheet So That No One Can Make Edits

We just covered how to protect the contents of an entire workbook. In addition to password-protecting the entire file, Excel also gives you the option to block a spreadsheet so that no one can edit. This feature is useful when you have multiple spreadsheets, but you want others to have access to some sheets but not others. The following steps will show you a quick way to set this up.

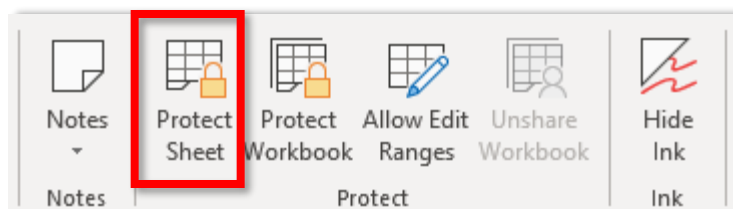
1. Make sure that you are working on the spreadsheet you want to protect.
2. Navigate to the **Review** tab



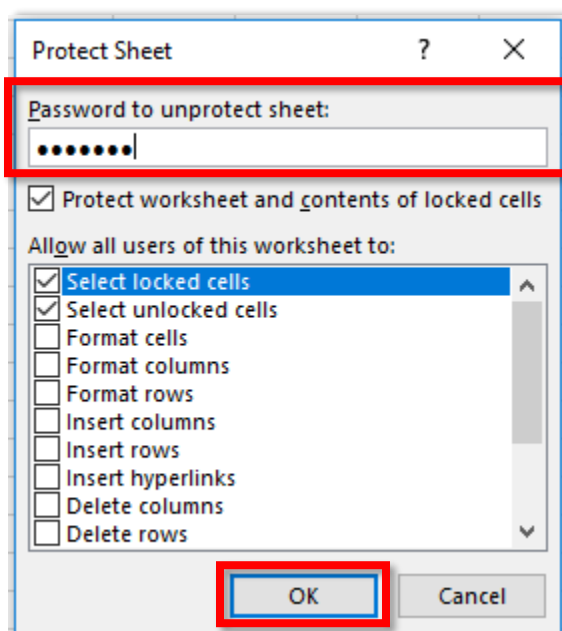
3. Locate the **Protect** group.



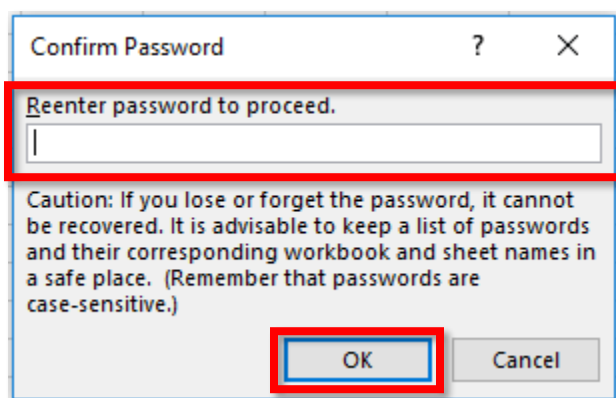
4. Select the **Protect Sheet** command.



5. Selecting the **Protect** Sheet command will trigger a window asking you to enter a password. Enter a password and click the **OK** button.

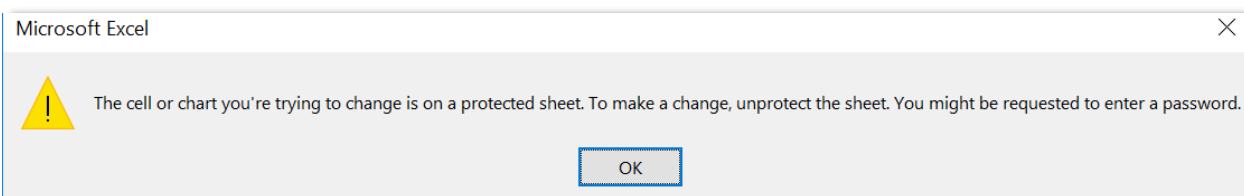


6. Re-enter your password and click the **OK** button.



Typically, you can use the default settings in the pop-up window and just worry about entering (and remembering) your password. The common defaults settings include two checked checkboxes: *Select locked cells* and *Select unlocked cells*. These two options should be checked. These two options allow a user to see the spreadsheet and to click on cells, but if this person tries to type or edit a cell an error message will appear. We'll discuss this in more detail shortly.

As previously mentioned, when a spreadsheet is password protected, the *entire* spreadsheet is protected, and no cell can be edited. When someone tries to edit the spreadsheet the following error message will appear like the one pictured below.

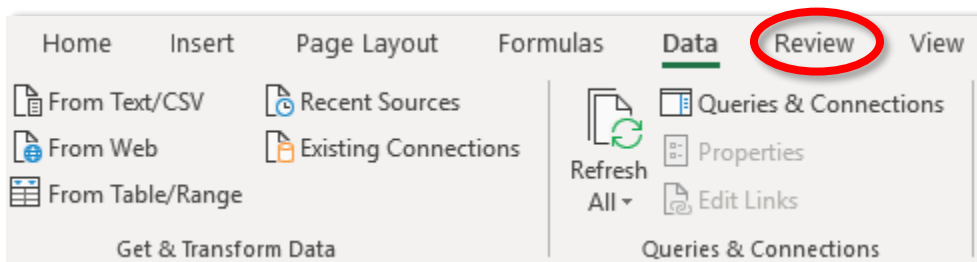


How to Remove the Password-Protection from Your Spreadsheet

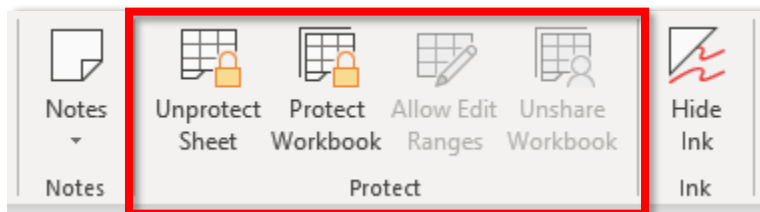
The only way to remove the password-protection of a spreadsheet is by 'unprotecting' the spreadsheet. This is simply done by entering the password.

To unprotect your spreadsheet:

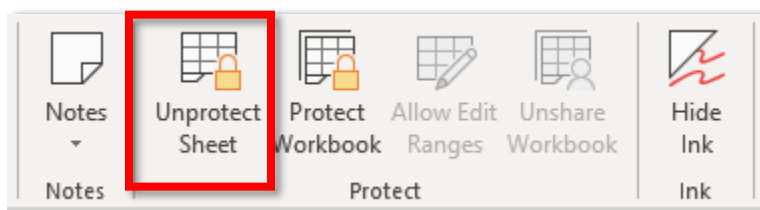
1. Make sure that you are working on the spreadsheet you want to protect.
2. Navigate to the **Review** tab



3. Locate the **Protect** group.

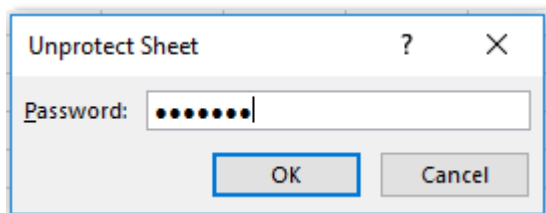


4. Select the **Unprotect Sheet** command.



5. Enter your password and select the **OK** button.

You'll know that you followed these steps correctly if (1) Excel no longer gives you an error message when editing the spreadsheet and (2) the **Unprotect Sheet** command is replaced with the **Protect Sheet** command.

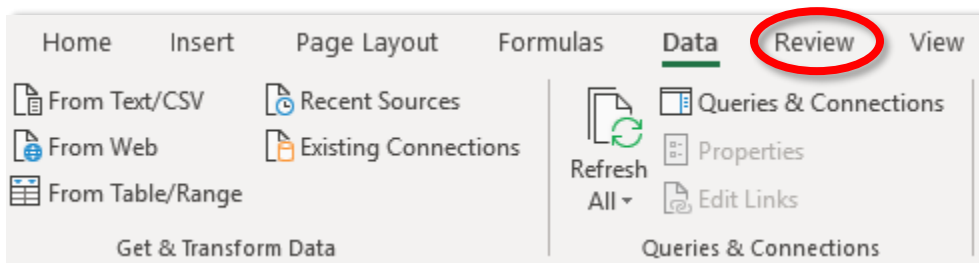


How to Limit Users from Making Format Changes or Edits on Spreadsheets

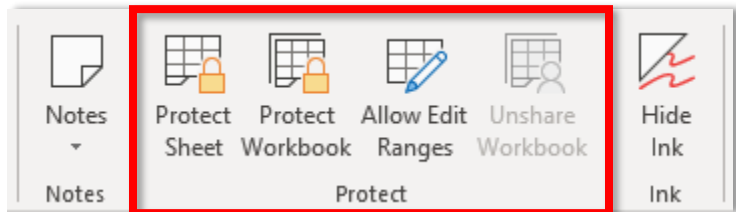
You may run into a scenario in which you want people to make edits to most of your spreadsheet but want to restrict users from changing your formatting or moving columns or rows. Excel makes it easy for you to restrict certain aspects of your spreadsheet.

To restrict certain formats or changes in your spreadsheet:

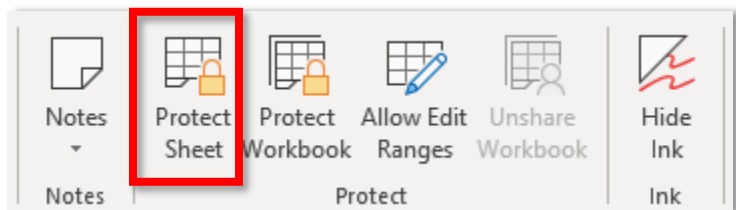
1. Make sure that you are working on the spreadsheet you want to protect.
2. Navigate to the **Review** tab



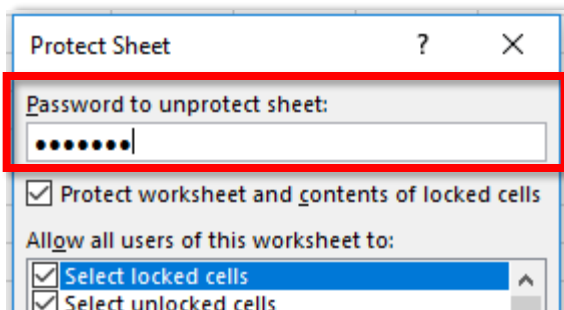
3. Locate the **Protect** group.



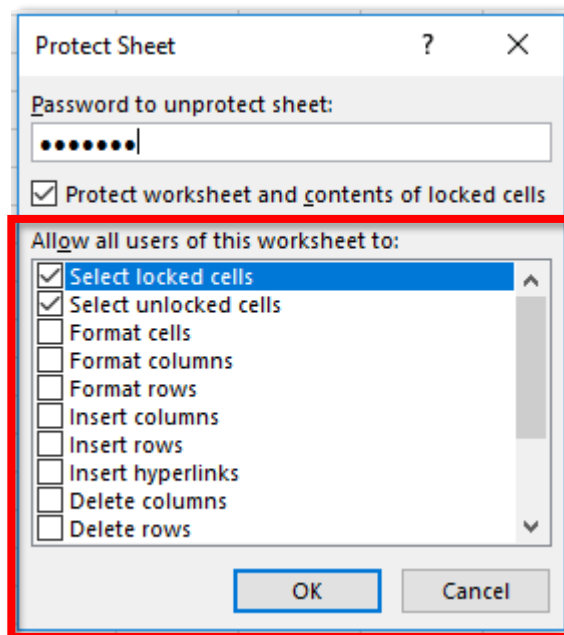
4. Select the **Protect Sheet** command.



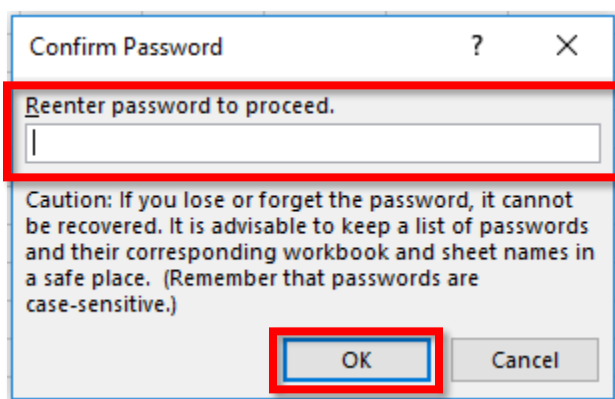
5. Selecting the **Protect Sheet** command will trigger a window asking you to enter a password.



6. Next, check the boxes of the features you want to allow users to have. By default, most of these boxes are not checked. Select the **OK** button when you are finished.



7. Re-enter your password and click the **OK** button.

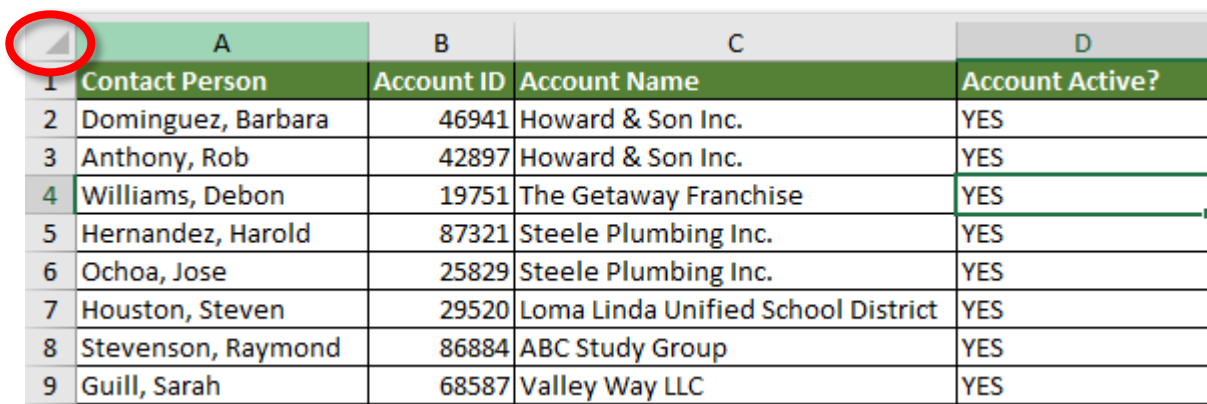


How to Unlock All Cells in Your Spreadsheet

Believe it or not, all cells in Excel are *locked* by default. This becomes an issue when you're trying to protect certain cells, formulas, rows or columns in a spreadsheet from being edited. Therefore, unlocking cells becomes the first step to ensuring that you can block certain areas in your spreadsheet from being edited or even touched.

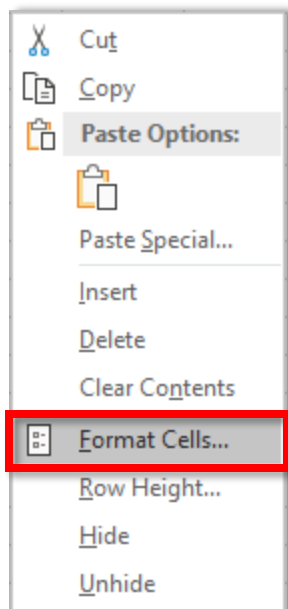
To unlock all cells in your spreadsheet:

1. Choose the spreadsheet where you want to unlock your cells.
2. Select all cells in your spreadsheet by clicking in the upper-left hand corner of the sheet.

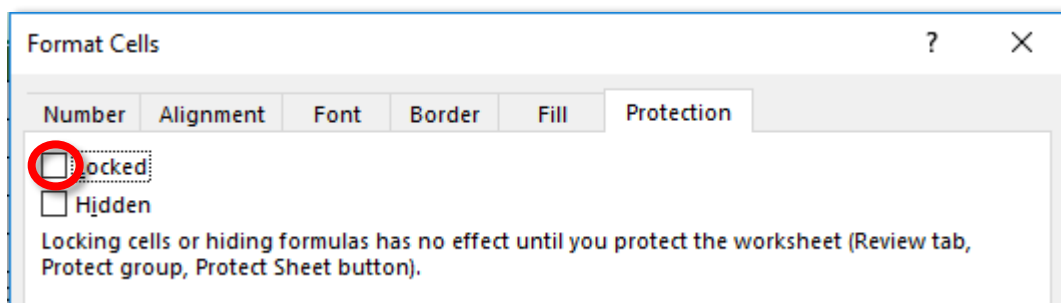


	A	B	C	D
1	Contact Person	Account ID	Account Name	Account Active?
2	Dominguez, Barbara	46941	Howard & Son Inc.	YES
3	Anthony, Rob	42897	Howard & Son Inc.	YES
4	Williams, Debon	19751	The Getaway Franchise	YES
5	Hernandez, Harold	87321	Steele Plumbing Inc.	YES
6	Ochoa, Jose	25829	Steele Plumbing Inc.	YES
7	Houston, Steven	29520	Loma Linda Unified School District	YES
8	Stevenson, Raymond	86884	ABC Study Group	YES
9	Guill, Sarah	68587	Valley Way LLC	YES

3. After selecting all cells in your spreadsheet, place your cursor over any cell and right-click. Select the **Format Cells...** option.



- The **Format Cells...** option will display a window and will default to the *Protection* section of the window. By default, your cells are locked. Uncheck the **Locked** checkbox and click the **OK** button.



How to Restrict Users from Touching or Editing Areas in Your Spreadsheet

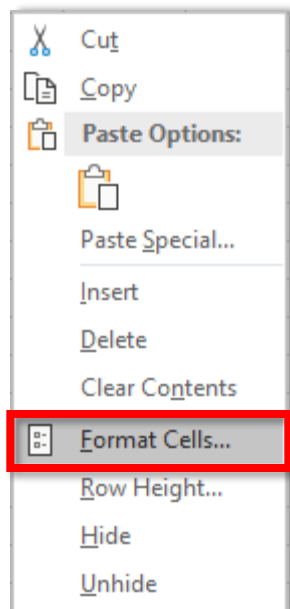
In this section you'll learn how to restrict areas in your spreadsheet. This is useful when you want users to edit certain cells, but not others. This method will not allow users to click or touch the cells that you specify. You'll first need to make sure that *only* the cells you want blocked are *locked*.

To restrict users from touching or editing areas in your spreadsheet:

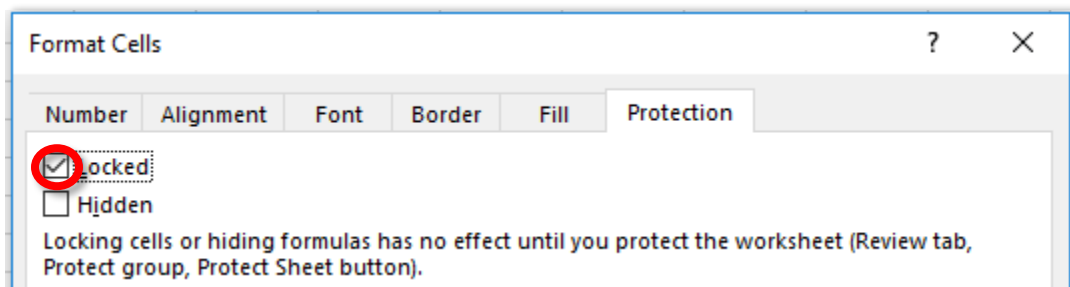
- Make sure that your cells are *not locked*. (See the [How To Unlock All Cells In Your Spreadsheet](#))
- Select the cells, columns or area you want to block.

	A	B	C	D
1	Contact Person	Account ID	Account Name	Account Active?
2	Dominguez, Barbara	46941	Howard & Son Inc.	YES
3	Anthony, Rob	42897	Howard & Son Inc.	YES
4	Williams, Debon	19751	The Getaway Franchise	YES
5	Hernandez, Harold	87321	Steele Plumbing Inc.	YES
6	Ochoa, Jose	25829	Steele Plumbing Inc.	YES
7	Houston, Steven	29520	Loma Linda Unified School District	YES
8	Stevenson, Raymond	86884	ABC Study Group	YES
9	Guill, Sarah	68587	Valley Way LLC	YES

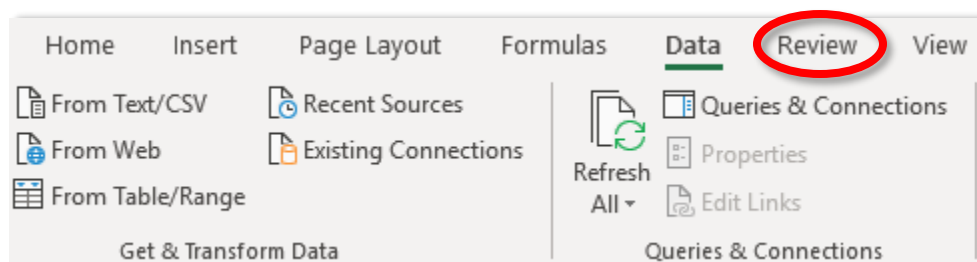
- Right-click with your mouse and select the **Format Cells...** option.



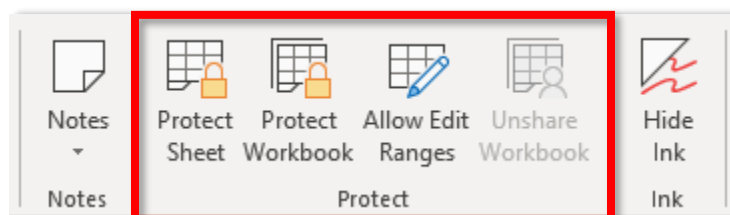
4. The **Format Cells...** option will display the *Protect* section of the window. In the window, check the **Locked** checkbox and click the **OK** button.



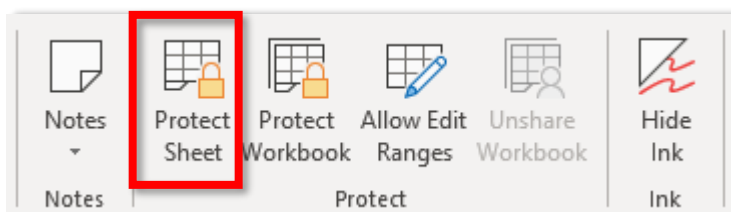
5. Navigate to the **Review** tab



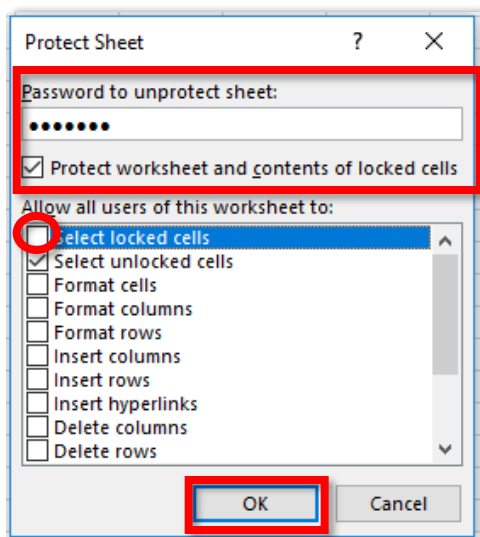
6. Locate the **Protect** group.



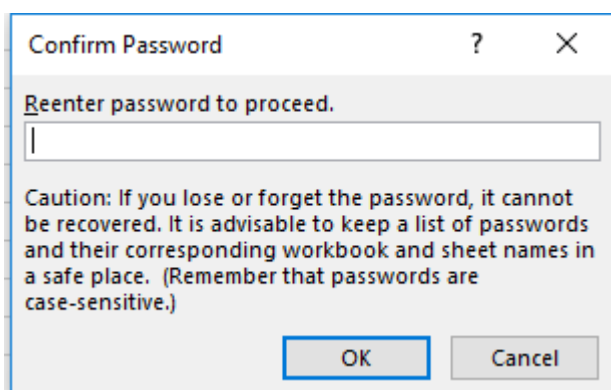
7. Select the **Protect Sheet** command.



8. The **Protect Sheet** command will display a window. In the window, type your password in the top section and make sure that the *Protect worksheet and contents of locked cells* is checked.



9. After typing your password, uncheck the box in the area titled *Select locked cells* and click on the **OK** button.
10. Confirm your password in the following window and press the **OK** button.



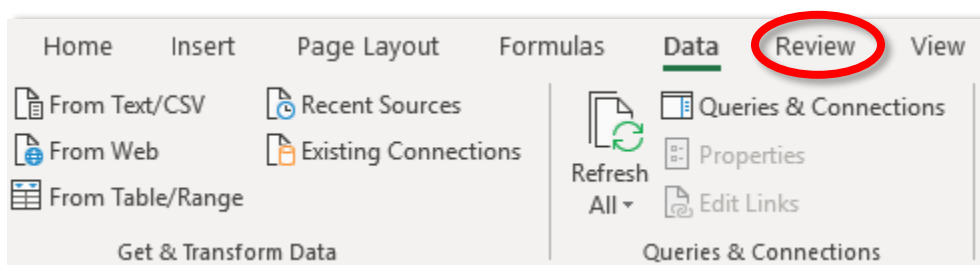
If you followed these steps correctly, you'll learn that you can't click or type in the area that you just blocked. This will prevent other users from making edits or even clicking on your cells within this area.

How To Password-Protect Areas In Your Spreadsheet

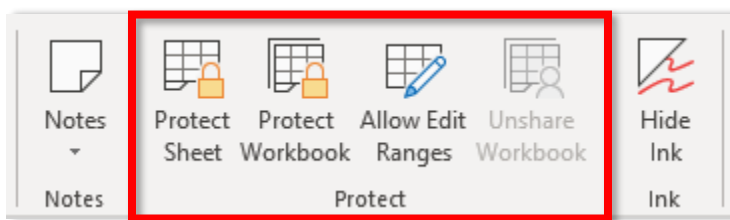
In the previous section, you learned how to prevent users from selecting areas that you decide to block in your spreadsheet. However, perhaps you only want certain people to edit those cells and you want those people to edit those cells by using a password. In this section you'll learn how to password-protect areas in your spreadsheet.

To password-protect areas in your spreadsheet:

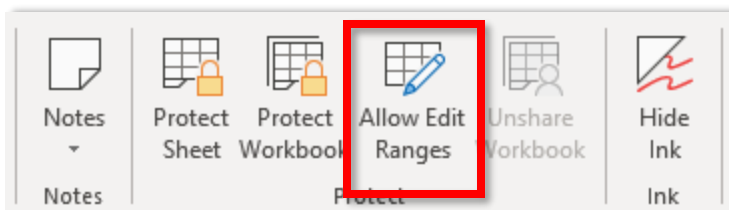
1. Navigate to the **Review** tab



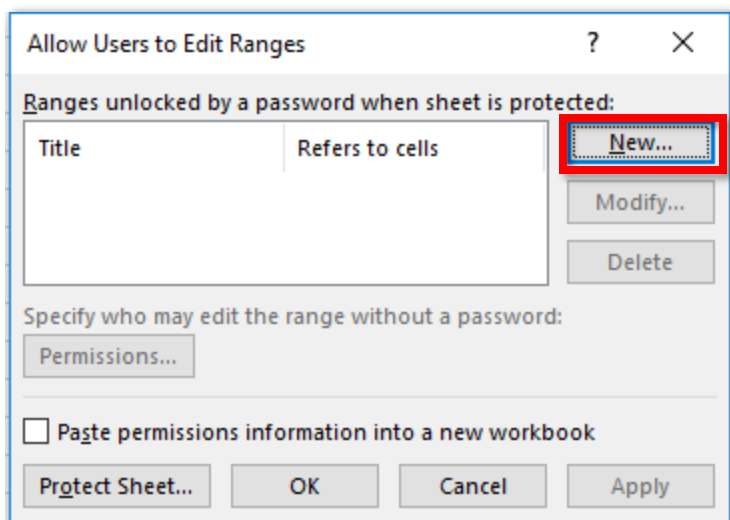
2. Locate the **Protect** group.



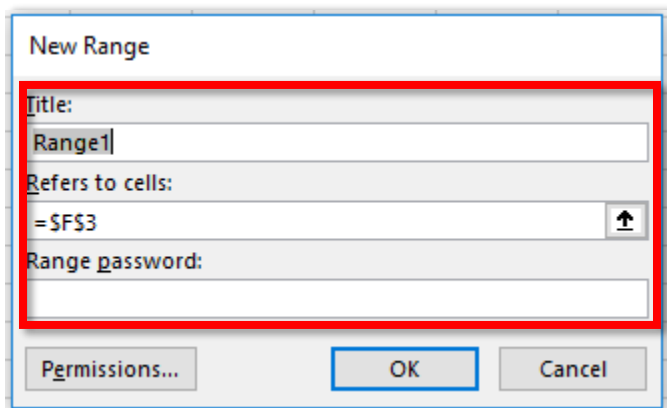
3. Select the **Allow Edit Ranges** command.



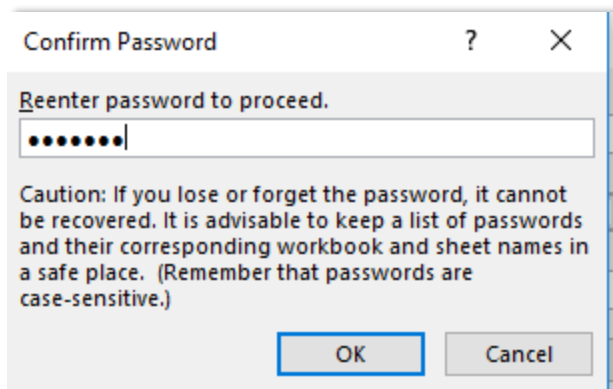
4. The **Allow Edit Ranges** command will display a window where you'll be able to select the area you want to password-protect. Click on the **New** button.



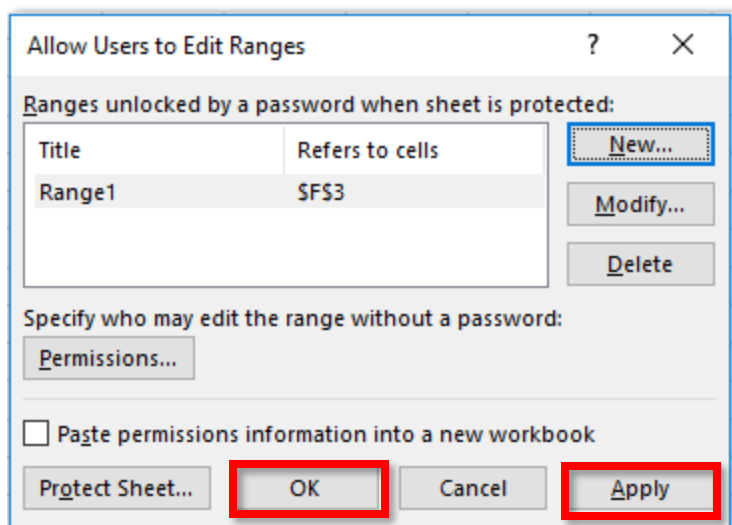
5. After selecting the **New** button, a new window will appear. Give this range a title in the top section. In the *Refers to cells* section, make sure that you select the cell or the range you want to password protect. In the *Range password* select a password for this range. Once you're done, click the **OK** button.



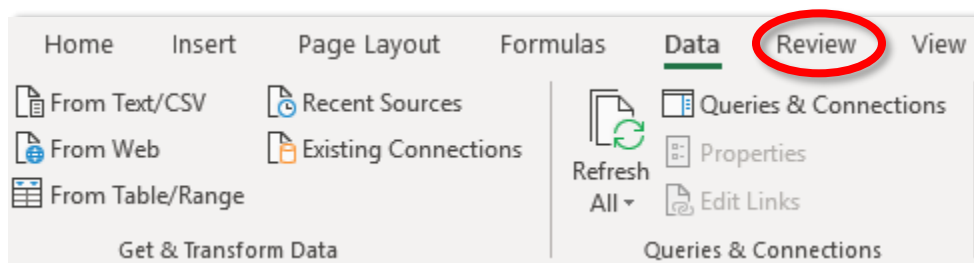
6. After selecting the **OK** button, confirm your password.



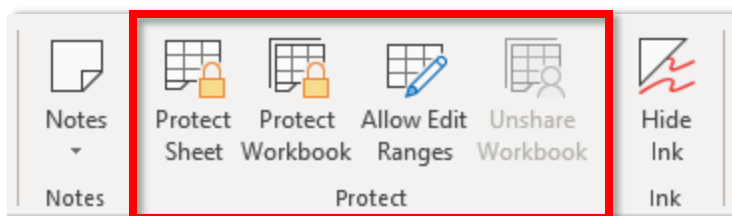
7. Now that you have confirmed the ranges and password, Excel will take you back to the previous window where you will verify the details, select **Apply** and then select the **OK** button when you're done.



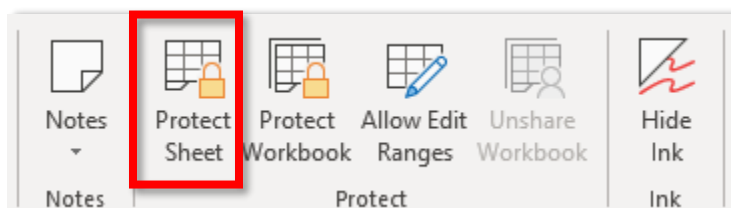
7. After you selected the ranges to password-protect, you'll then need to protect the spreadsheet. Navigate to the **Review** tab.



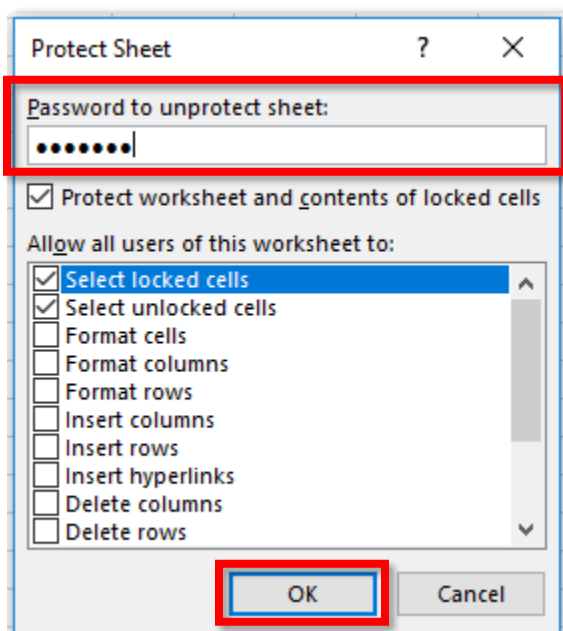
8. Locate the **Protect** group.



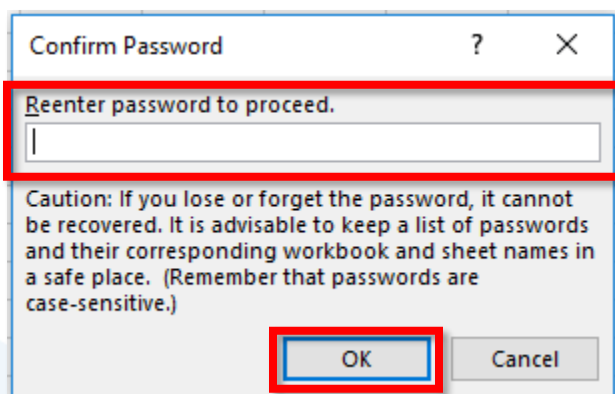
9. Select the **Protect Sheet** command.



10. Selecting the **Protect** Sheet command will trigger a window asking you to enter a password. Enter a password and click the **OK** button.



11. Re-enter your password and click the **OK** button.



You'll know that you followed these steps correctly if any time that you clicked on the protected area of your spreadsheet, Excel prompts you to enter your password.

Become More Efficient in Excel

The Excel features you'll learn in this section are functions that will help you access data, tables and sheets quicker. The techniques are more of a warm-up for those seeking a smoother transition from Intermediate-level skills to more Advanced skills.

Auto Fill

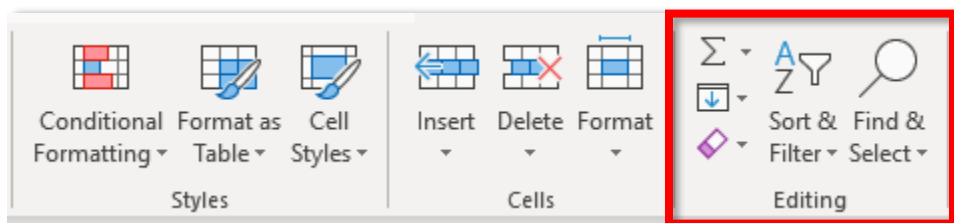
Microsoft Excel prioritizes efficiency which is why there are many shortcuts used in Excel. Additionally, Excel tries its best to guess your intentions and will automatically complete certain functions for you. One such function is the **Fill** function. The **Fill** function allows you to copy the functionality of your cells to other cells. This way, you don't have to create formulas repeatedly. You'll only have to create a formula once and Excel will auto fill to other cells. Let's look at some examples of the Auto Fill function.

The Fill Button

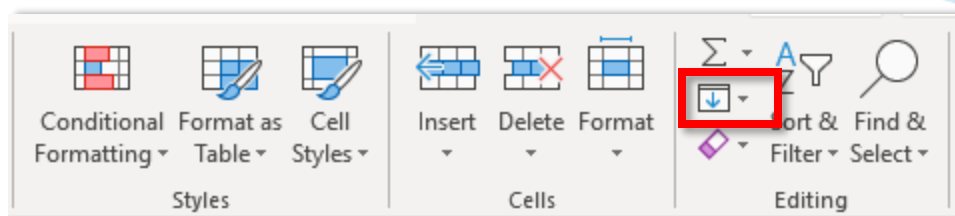
The **Fill** button helps you automatically complete your formulas on to other cells in a vertical or horizontal manner. However, this button only limits your ability to copy/paste the formulas one at a time. The Fill Button basically performs the same function as the Auto Fill Handle which will be covered in the next section.

To use the **Fill** command:

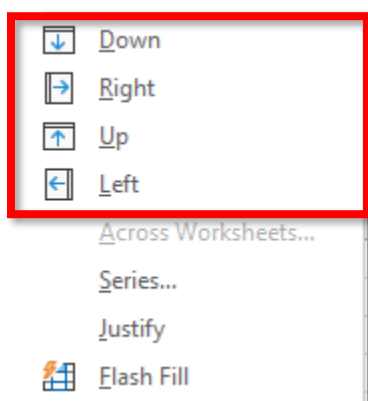
1. Select the cells where you want Excel to fill the computations for you.
2. Navigate to the **Editing** group in the **Home** tab ribbon.



3. Click on the **Fill** command.

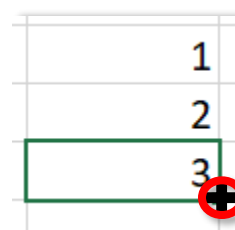


4. After selecting the **Fill** command, Excel will display a drop-down menu. Select the direction for Excel to automatically complete the computations for you.



The Auto Fill Handle

Anytime you have a column or row where a pattern is formed, you'll be able to use a powerful feature called the **Auto Fill Handle**. The **Auto Fill Handle** will appear in the lower right-hand corner of a cell and is represented by a very small, black cross. The **Auto Fill Handle** will only appear when Excel recognizes a pattern in your cells or a computation, such as a formula.

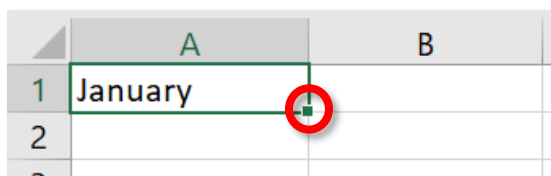


How to Use the Auto Fill Handle

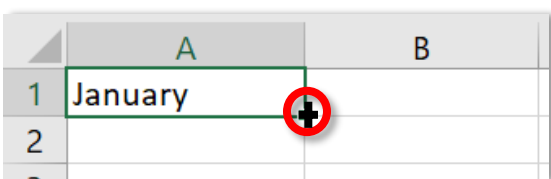
The **Auto Fill Handle** is used to copy patterns of data across multiple cells or to copy computations across a column or row. It is recognized as a little black cross that appears in the lower-right hand corner of a cell.

To use the Auto Fill Handle:

1. Place your cursor over the lower-right hand corner of a cell that contains content, such as a pattern or a formula.



2. Once you see the black cross (or the **Auto Fill** Handle) appear, click *and hold* and move your cursor in the direction of where you want the pattern or calculations to occur.



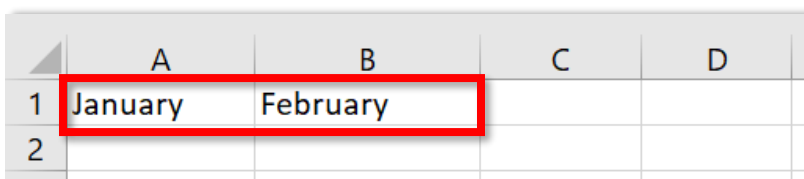
3. (While holding) move your cursor to the desired cell and let go of the mouse

How to Use the Auto Fill Handle with patterns

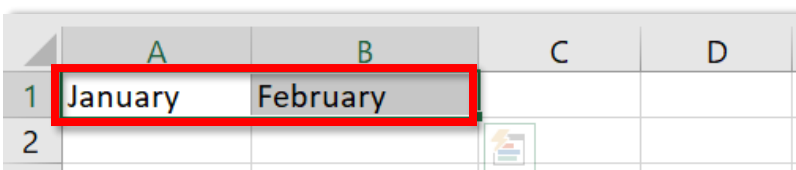
Microsoft Excel is such a powerful software that it can recognize patterns in a spreadsheet. For example, if you want to include every month of the year in your spreadsheet, you would literally have to type in the name of those months in every cell. However, the **Auto Fill Handle** recognizes patterns which will save you time and energy. For Excel to recognize a pattern, you'll have to first create a pattern with at least two cells.

To use the **Auto Fill Handle** with a pattern:

1. Create a pattern in at least two cells.



2. Select both cells.



- Place your cursor in the lower-right hand corner of your range until you see the black cross (or the **Auto Fill Handle**).

	A	B	C	D
1	January	February		
2				

- Click and hold the **Auto Fill Handle**
- Move your cursor in the direction in which you want Excel to fill the rest of the pattern or computation.

	A	B	C	D	E	F	G	H
1	January	February	March	April	May	June	July	August
2								

Since Excel recognized your pattern, it automatically filled the rest of the data for you. The **Auto Fill Handle** can identify years, numbers, days of the weeks and formulas.

Creating and Working with Hyperlinks

Using hyperlinks in your Excel spreadsheets help users quickly get from one place to another with just one click. In this section, you'll learn how we define hyperlinks, the different types of hyperlinks that we typically use in Excel and how to create them and insert them into a spreadsheet. Additionally, you'll learn how to edit and customize your hyperlinks.

	I	J	K	L	M
	Zip	Purchase Date			
	42988	05/11/1995			
	41496	09/23/1993		Lesson 2	
	74800	03/01/2000			
	61950	08/25/1993			

What is a Hyperlink?

Microsoft defines a hyperlink as an object that links to another location in the same file, or to another file altogether. Hyperlinks are common in other areas such as websites and digital books. Think of it as something that you can click on that will direct you to another location or file. Hyperlinks can be used to direct someone from your spreadsheet to a file, a website, an email and even someone else's file. You probably have already used hyperlinks in your lifetime in one way or another, especially if you have visited any websites recently. Hyperlinks

are typically displayed as words that are blue and underlined. This is typically how people know that a word can be clicked on and be directed to another location.

How to Insert a Hyperlink to an Existing File

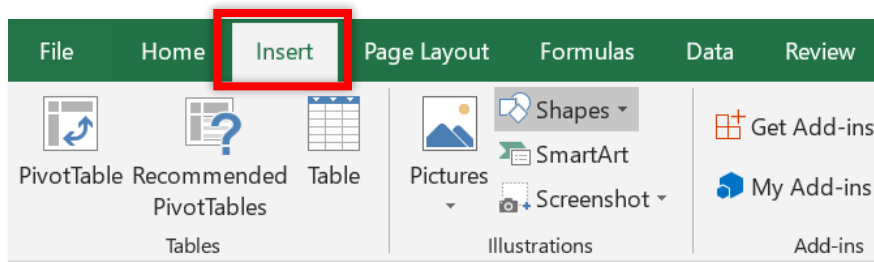
The process to create a hyperlink is relatively easy. One way to use hyperlinks is by linking them to a file on your computer. This way, if someone (such as yourself) needs to access a certain file quickly, you can easily click on the hyperlink and be directed to the file that you choose.

To insert a **Hyperlink** to an existing file:

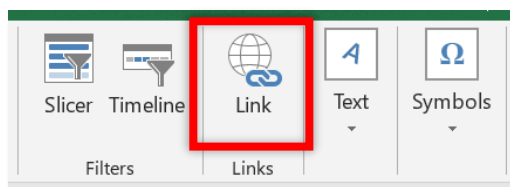
1. Click on the cell where you will insert the hyperlink

City	State	Zip	Purchase Date			
Kearney	NE	42988	05/11/1995			
Las Vegas	NV	41496	09/23/1993			
Cincinnati	OH	74800	03/01/2000			

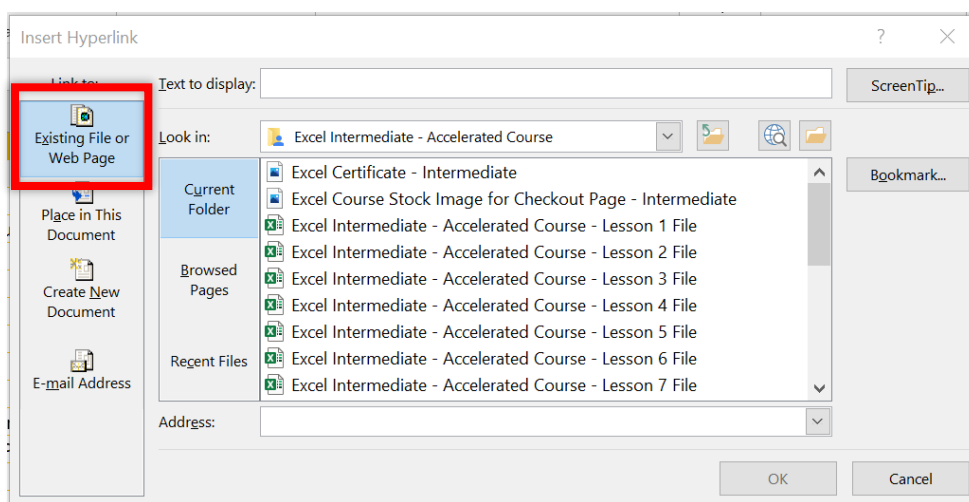
2. After selecting the cell, navigate to the **Insert** tab



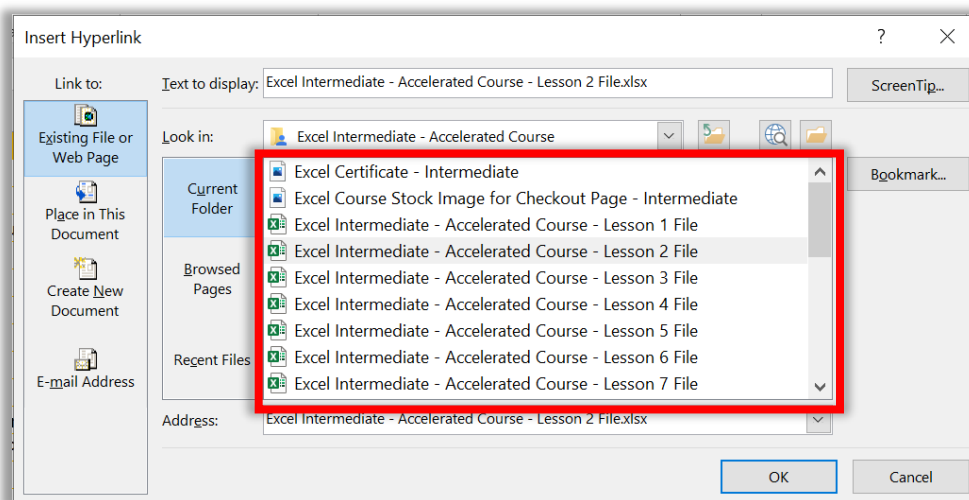
3. From the **Links** group, select the command that says **Link**. (If you're using an earlier version of Excel, then you would find a command called **Hyperlink**).



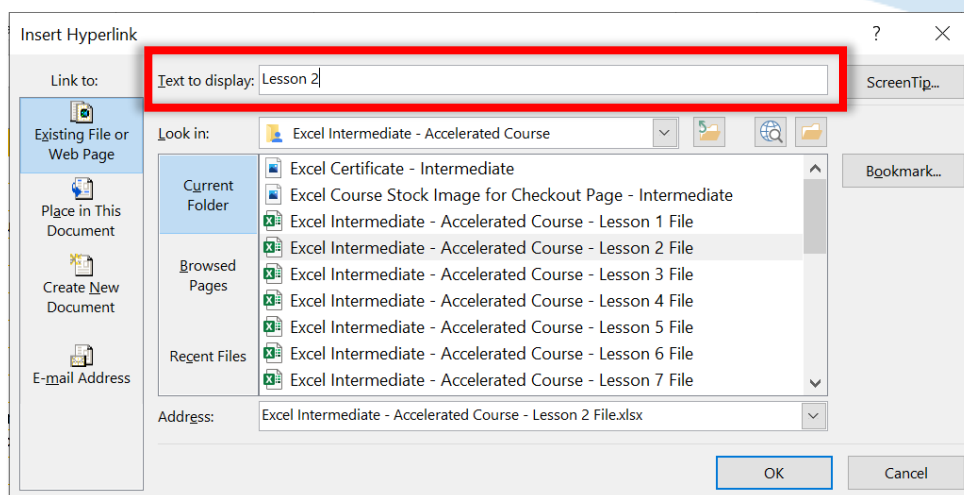
- After selecting the command, you will see a dialog box displayed. Make sure that you select the appropriate settings by selecting the **Existing File or Web Page** option from the left side.



- Select the appropriate file to open when the hyperlink is clicked. You can view your **Current Folder**, view **Recent Files** or browse through your computer for the appropriate file.



- If applicable, change the **Text to Display** at the top to a word or phrase of your choice.



- Click the **OK** button to see the hyperlink displayed.

	I	J	K	L	M
	Zip	Purchase Date			
	42988	05/11/1995			
	41496	09/23/1993		Lesson 2	
	74800	03/01/2000			
	61950	08/25/1993			

Moving forward, you (or anyone else) will be able to click on the hyperlink and will automatically be directed to the file you selected. The hyperlink helps you access the file quickly, without the need of opening your File Explorer and looking for the file manually.

How to Insert a Hyperlink directed to a Web Page

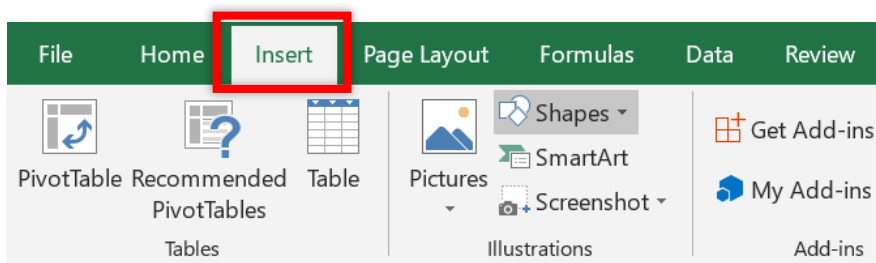
One other way to use hyperlinks is by linking them to a website. This is perhaps one of the most common ways to use hyperlinks. When done correctly, anyone who clicks on the hyperlink will be directed to the website you selected.

To insert a **Hyperlink** directed to a website:

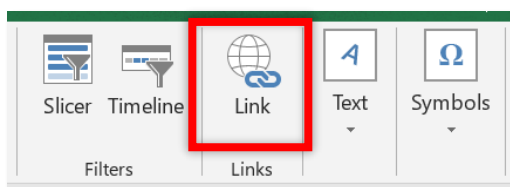
- Click on the cell where you will insert the hyperlink.

	G	H	I	J	K	L	M
	City	State	Zip	Purchase Date			
	Kearney	NE	42988	05/11/1995			
	Las Vegas	NV	41496	09/23/1993			
	Cincinnati	OH	74800	03/01/2000			

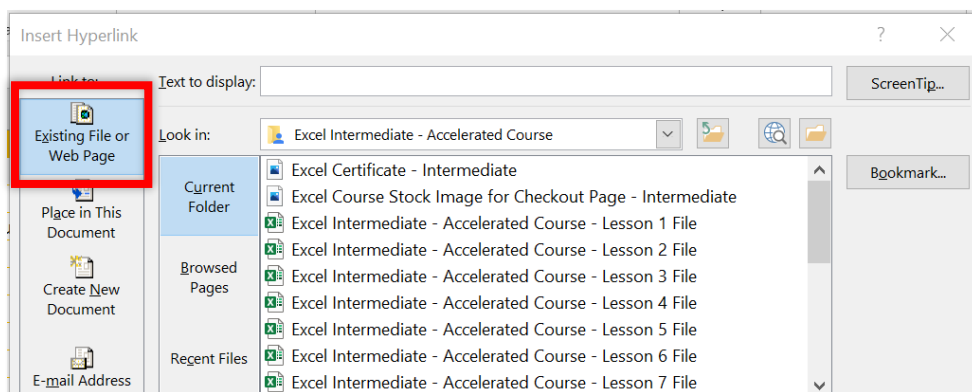
- After selecting the cell, navigate to the **Insert** tab.



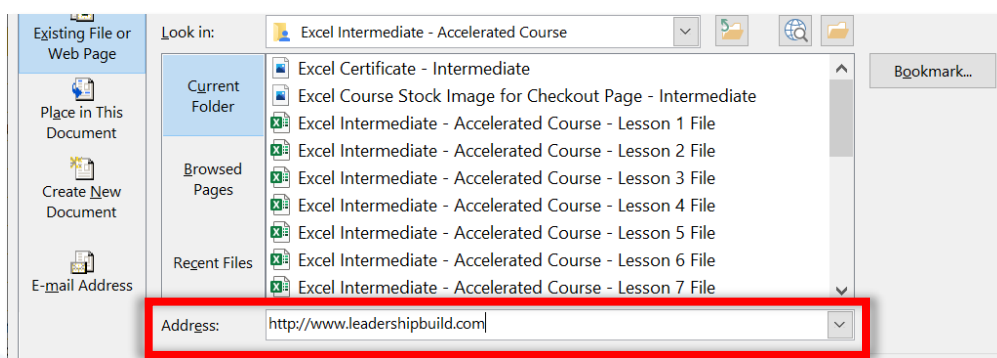
- From the **Links** group, select the command that says **Link**. (If you're using an earlier version of Excel, then you would find a command called **Hyperlink**).



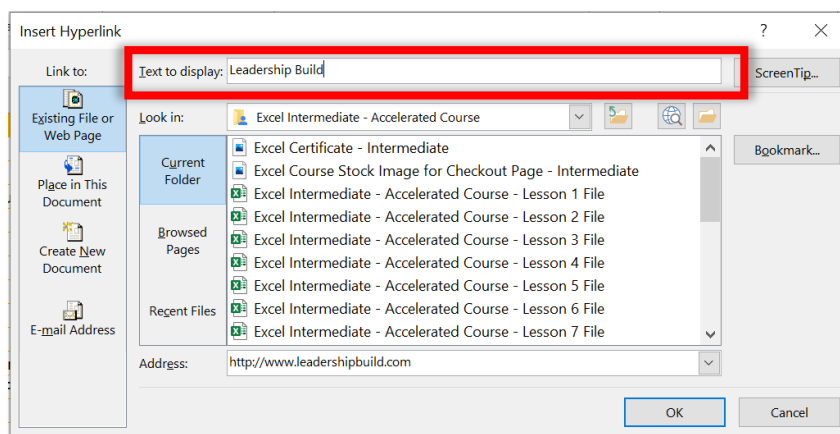
- After selecting the command, you will see a dialog box displayed. Make sure that you select the appropriate settings by selecting the **Existing File or Web Page** option from the left side.



- In the bottom sections titled **Address**, type the name of the website (or paste the URL from an existing website).



- If applicable, change the **Text to Display** at the top to a word or phrase of your choice.



- Click the **OK** button to see the hyperlink displayed.

H	I	J	K	L	M
	State	Zip	Purchase Date		
	NE	42988	05/11/1995		
	NV	41496	09/23/1993	Leadership Build	
	OH	74800	03/01/2000		

Now, when you (or anyone else) clicks on this hyperlink you will be directed to the website you included in the hyperlink.

How to Insert a Hyperlink to a Location In Your Workbook

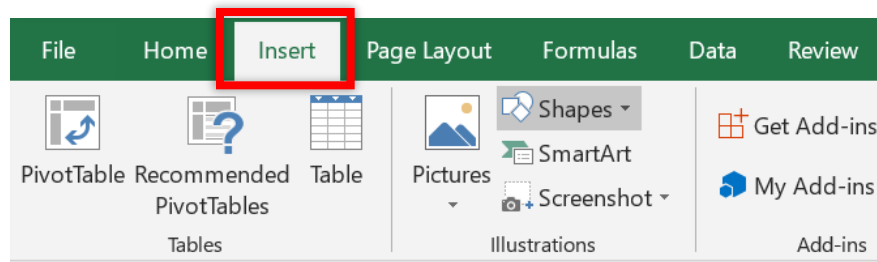
You may have an instance in which you want to create a shortcut from the current spreadsheet you're working on to a different location in your workbook. Again, the point of the hyperlink is to create shortcuts and produce efficiency.

To insert a **Hyperlink** to a location in your workbook:

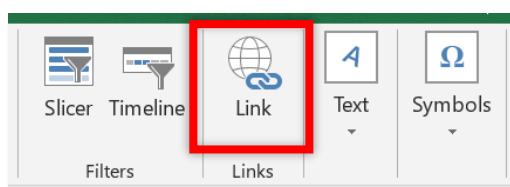
- Click on the cell where you will insert the hyperlink

G	H	I	J	K	L	M
City	State	Zip	Purchase Date			
Kearney	NE	42988	05/11/1995			
Las Vegas	NV	41496	09/23/1993			
Cincinnati	OH	74800	03/01/2000			

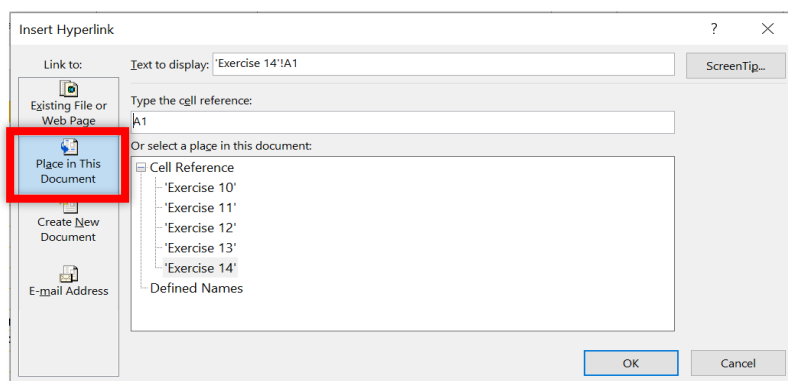
- After selecting the cell, navigate to the **Insert** tab



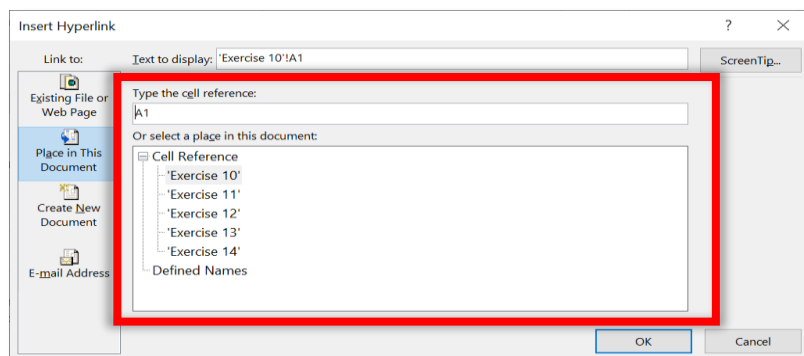
- From the **Links** group, select the command that says **Link**. (If you're using an earlier version of Excel, then you would find a command called **Hyperlink**).



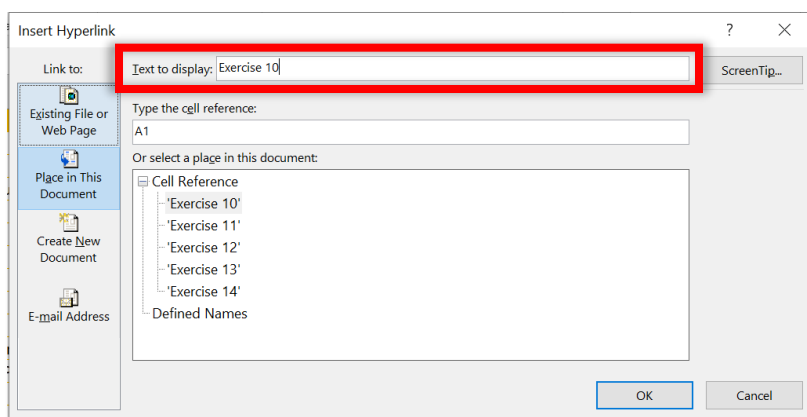
- After selecting the command, you will see a dialog box displayed. Make sure that you select the appropriate settings by selecting the **Place in This Document** option from the left side.



- Select a specific sheet, cell reference or defined name in your workbook.



- If applicable, change the **Text to Display** at the top to a word or phrase of your choice.



- Click the **OK** button to see the hyperlink displayed.

H	I	J	K	L	M
State	Zip	Purchase Date			
NE	42988	05/11/1995			
NV	41496	09/23/1993		Exercise 10	
OH	74800	03/01/2000			
WA	61858	08/25/1993			

From now on, when this hyperlink is clicked, it will direct the user to the appropriate location in your worksheet.

How to Insert a Hyperlink to An Email Address

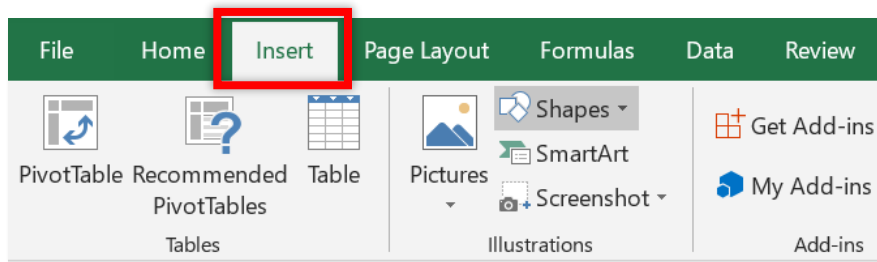
Another common use of the hyperlink is using it to direct to an email address. In other words, whoever clicks on the hyperlink will be able to automatically email the person you included when the hyperlink was created.

To insert a **Hyperlink** to an email address:

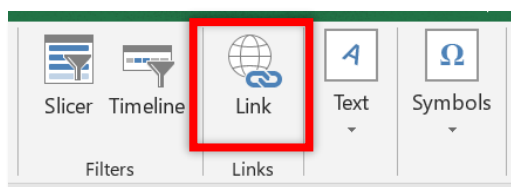
- Click on the cell where you will insert the hyperlink

G	H	I	J	K	L	M
City	State	Zip	Purchase Date			
Kearney	NE	42988	05/11/1995			
Las Vegas	NV	41496	09/23/1993			
Cincinnati	OH	74800	03/01/2000			

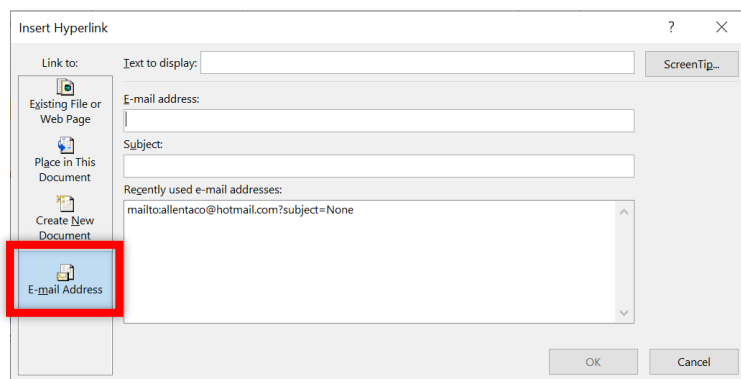
- After selecting the cell, navigate to the **Insert** tab



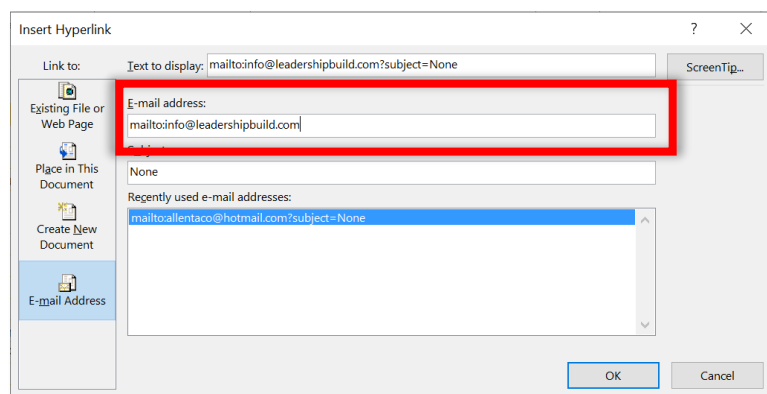
- From the **Links** group, select the command that says **Link**. (If you're using an earlier version of Excel, then you would find a command called **Hyperlink**).



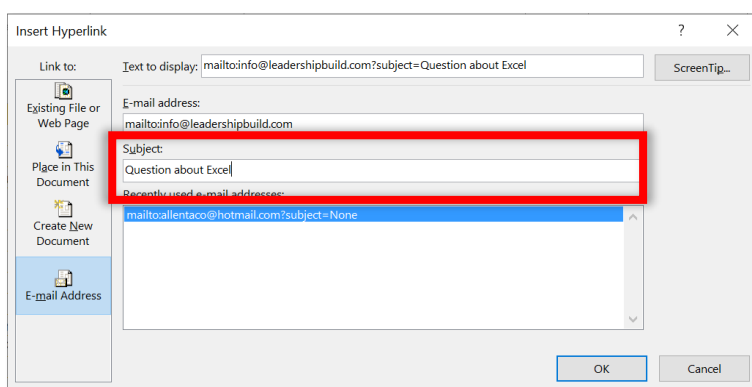
- You will see a dialog box displayed. Make sure that you select the appropriate settings by selecting the **Email Address** option from the left side.



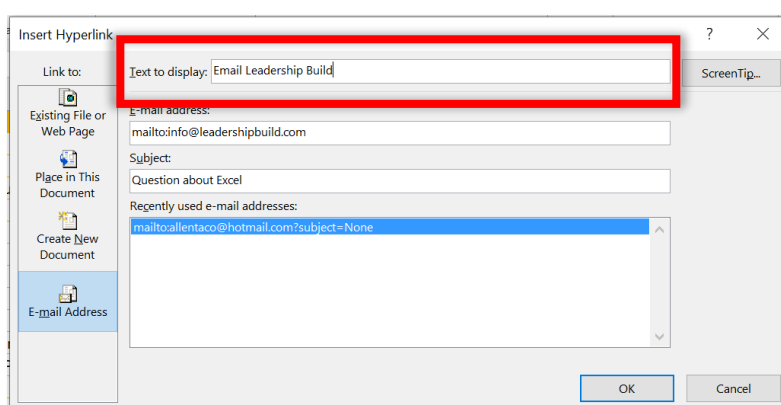
- Include the recipient's email address in the section titled **Email Address**.



- If you want to include a default subject, type something in the field titled **Subject**.



7. If applicable, change the **Text to Display** at the top to a word or phrase of your choice.



8. Click the **OK** button to see the hyperlink displayed.

H	I	J	K	L	M	N
	State	Zip	Purchase Date			
	NE	42988	05/11/1995			
	NV	41496	09/23/1993	Email Leadership Build		
	OH	74800	03/01/2000			

Moving on, when this hyperlink is clicked, it will open a window to access the person's email provider and will include the email address you included and the default subject (if one was included).

How to Quickly Modify Hyperlinks

If you need to quickly change the displayed text of a hyperlink you created, you can easily do so by using the **Formula Bar**.

To quickly modify your **Hyperlinks**:

1. Select the cell that contains the hyperlink. Be careful because the hyperlink is clickable. Therefore, if you click on the cell that contains the hyperlink, you will most likely trigger the hyperlink. You can select the cell by using the arrow keys on your keyboard.

H	I	J	K	L	M	N
State	Zip	Purchase Date				
NE	42988	05/11/1995				
NV	41496	09/23/1993		Email Leadership Build		
OH	74800	03/01/2000				

2. Click on the **Formula Bar** and make the necessary edits to the text.

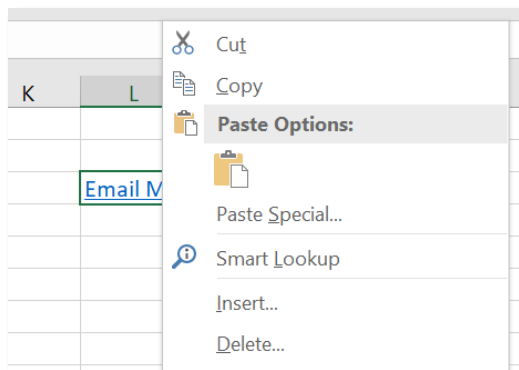
✕
✓
fx

How to Make Changes to Your Hyperlinks

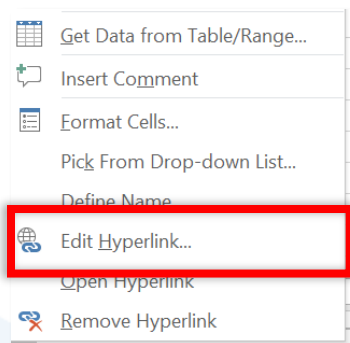
If you're planning on making major modifications to your hyperlinks, then the best thing to do is to modify the work you created when you first set up the hyperlinks.

To insert a **Hyperlink** to an email address:

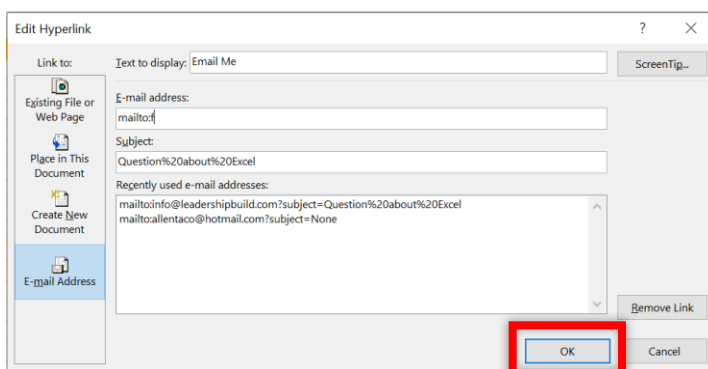
1. Right-click on the hyperlink.



2. Select the **Edit Hyperlink** option.



3. Make any necessary changes to your hyperlink and click the **OK** button.

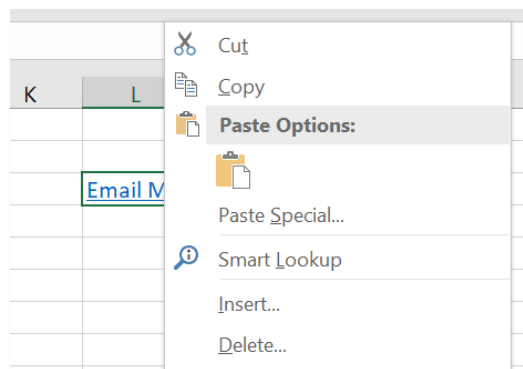


How to Format A Hyperlink

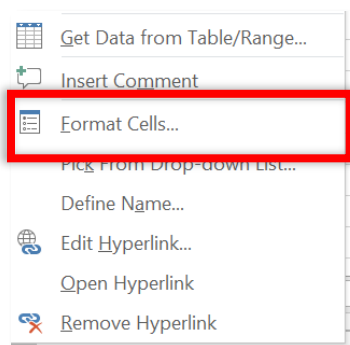
As mentioned previously, by default hyperlinks will be displayed in blue with an underline. However, how the hyperlink is displayed can be customized.

To change the format of a **Hyperlink**:

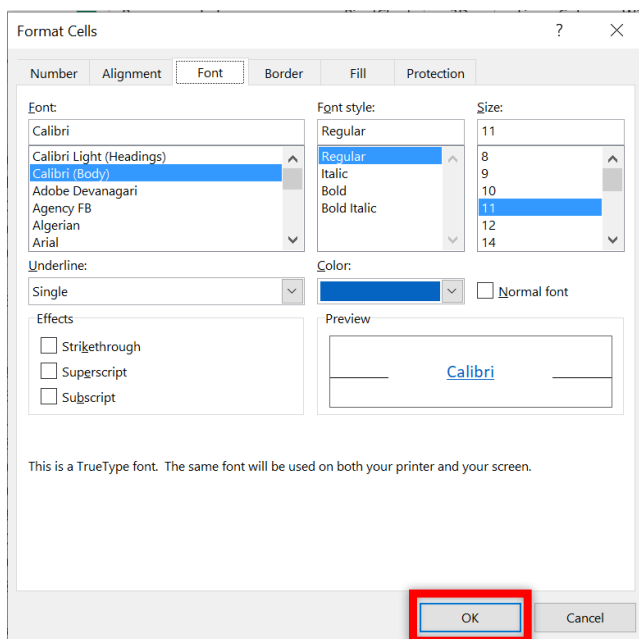
1. Right-click on the hyperlink.



2. Select the **Format Cells...** option.



3. The **Format Cells** dialog box will appear. Here, you can change the font size, font type, font color and other settings that you can typically make to the cell. Once you're done. Click on the **OK** button.

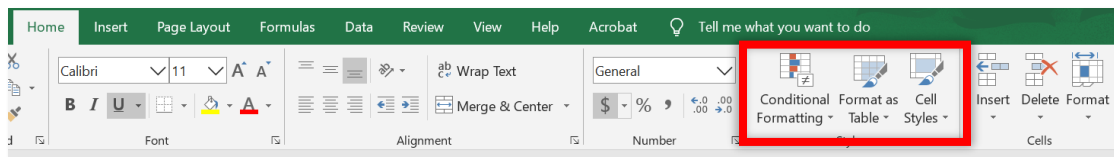


How to Change the Default Formatting For All Hyperlinks

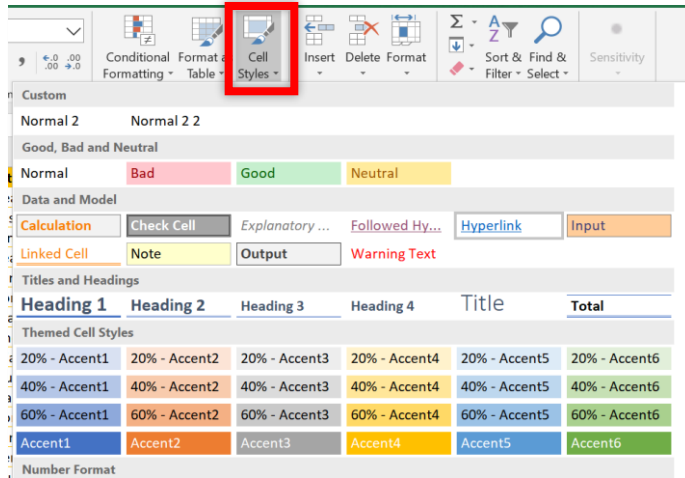
In the previous section, you learned how to modify the formatting for a hyperlink's cell. However, that method only allows you to make edits to one hyperlink. The following are the steps you would take to change the default formatting for all hyperlinks in your workbook.

To change the default formatting for all **Hyperlinks**:

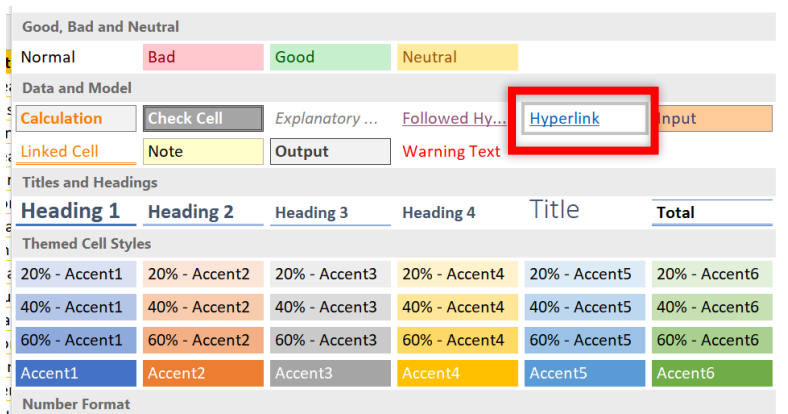
1. Navigate to the **Styles** group in the **Home Tab**.



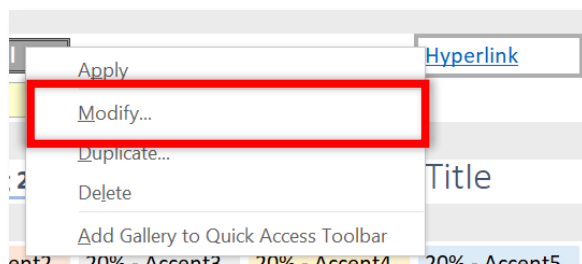
2. Select the **Cell Styles** command to display a gallery of options.



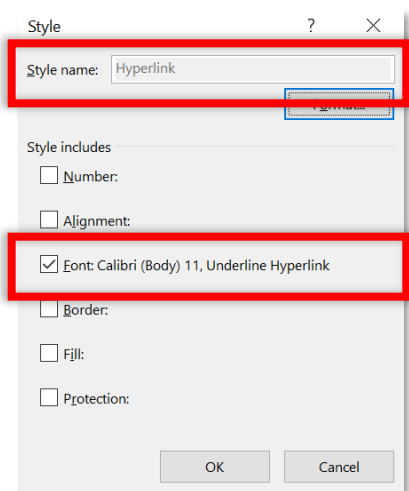
3. Locate the **Hyperlink** option.



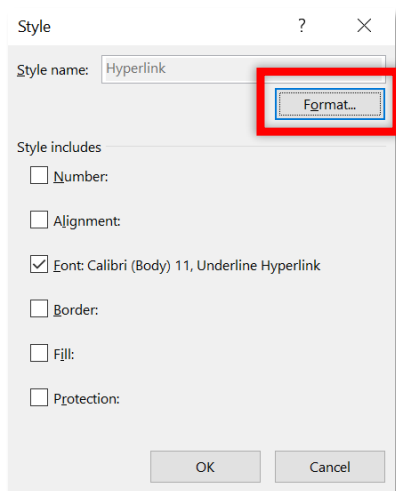
4. Right-click on the **Hyperlink** option and from the drop-down menu, select the **Modify** option.



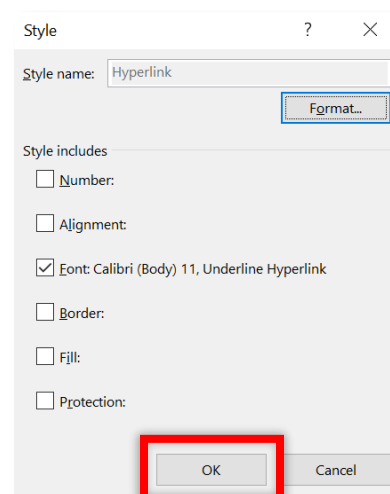
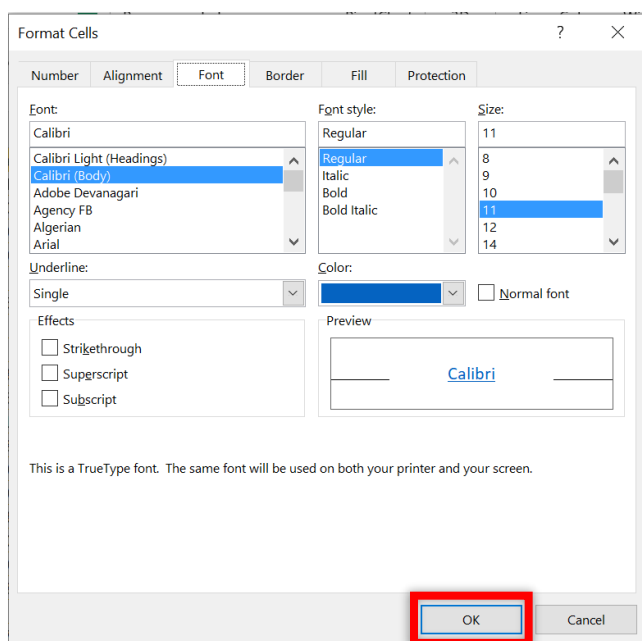
- Afterwards, you will see the **Style** dialog box. Make sure that the *Hyperlink* word appears in the **Style Name** section. As you may notice, the only box that is checked is the *Font* checkbox. This is because your hyperlinks currently only include font styles.



- Click on the **Format** button to display a dialog box that will help you modify the formatting of your cells that contain hyperlinks.



- The **Format Cells** dialog box will appear. Here, you can change the font size, font type, font color and other settings that you can typically make to the cell. Once you're done. Click on the **OK** button.
- When the **Style** window appears, click the **OK** button again to apply your changes to all hyperlinks.

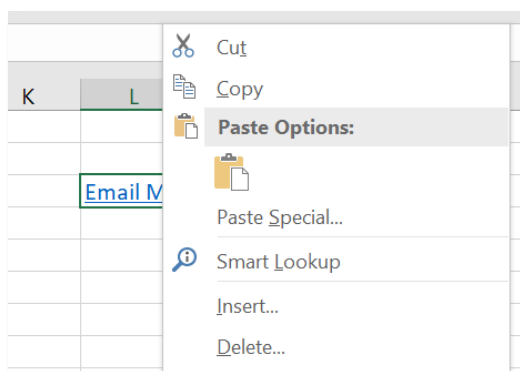


How to Remove the Hyperlink

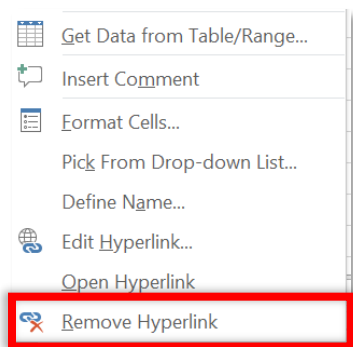
If you decide that you no longer want the hyperlink you can easily delete it by clicking on the cell and hitting the **Delete** button on your keyboard. However, if you want to keep the text but remove the hyperlink, you'll just need to follow a few steps.

To remove a **Hyperlink**:

1. Right-click on the **Hyperlink**.



2. Select the **Remove Hyperlink** option.



If done correctly, you will see that the hyperlink (and its formatting) has been successfully removed, but your text will remain in the cell.

H	I	J	K	L	M
State	Zip	Purchase Date			
NE	42988	05/11/1995			
NV	41496	09/23/1993		Email Me	
OH	74800	03/01/2000			

Working with Tables

In this section, you'll learn about the terminology that Excel uses when working with Tables, the difference between lists and tables and how to format your lists and use them as table.

List vs Tables

Technically, Excel does not recognize any organized data as a table unless it is formatted as a table. Although you may not be using tables, you can still use all the functions available in Excel. If your data is organized, you can basically use your data as a table. When data is not formatted as a table, Excel recognizes it only as a list. Let's explore the difference.

What Are Lists?

Any data organized in rows or columns is automatically considered a list in Excel. For example, in the screenshot below, you'll see that we technically have a list with 9 columns and 10 rows. Even if color is added to the headers and the list looks presentable, it still does not make this list a table, according to Excel.

	A	B	C	D	E	F	G	H	I
1	Transactio	Store ID	Date of Transaction	Time of Transaction	Item No	Item Desc	Qty	Price	Amount
2	897	003	11/19/2014	9:02:00 AM	100145	Peach Daisy	1	1.1	1.1
3	898	004	11/19/2014	9:06:00 AM	100136	Yellow Orchids	18	1.5	27
4	899	005	11/19/2014	9:10:00 AM	100145	Peach Daisy	9	1.1	9.9
5	900	003	11/19/2014	9:14:00 AM	100132	Peach Carnations	8	1.3	10.4
6	900	003	11/19/2014	9:14:00 AM	100146	Tigerlilly	4	0.99	3.96
7	900	003	11/19/2014	9:14:00 AM	100124	Yellow Lillys	10	0.99	9.9
8	900	003	11/19/2014	9:14:00 AM	100136	Yellow Orchids	21	1.5	31.5
9	904	003	11/19/2014	9:20:00 AM	100137	Red Orchids	18	1.5	27
10	904	003	11/19/2014	9:20:00 AM	100141	Pink Daisy	14	1.1	15.4

Why are Lists Not Considered Tables?

Typically for the average user, any spreadsheet that we create and add data, can be considered a table. In fact, many of us may be calling our data a "table". Yet, the technical terminology is wrong because Excel does not recognize the format as a table. The main reason why these differences are explained in detail in this booklet is because we do not want you to get confused if we use the technical terminology used by Excel.

What is a Table?

To the eye, telling the difference between a table and a list may be difficult. This is especially true if the list has been heavily formatted. A table is an Excel format that allows you to manage your entries quicker, organize your data much better and format your cells in a consistent manner. A table is nothing more than a formatted database. Most of the time, a person can spot a "table" because Excel styles are used (such as the one pictured below).

	A	B	C	D	E	F	G	H	I
1	Transaction No	Store ID	Date of Transaction	Time of Transaction	Item No	Item Desc	Qty	Price	Amount
2	897	003	11/19/2014	9:02:00 AM	100145	Peach Daisy	1	1.1	1.1
3	898	004	11/19/2014	9:06:00 AM	100136	Yellow Orchids	18	1.5	27
4	899	005	11/19/2014	9:10:00 AM	100145	Peach Daisy	9	1.1	9.9
5	900	003	11/19/2014	9:14:00 AM	100132	Peach Carnations	8	1.3	10.4
6	900	003	11/19/2014	9:14:00 AM	100146	Tigerlilly	4	0.99	3.96
7	900	003	11/19/2014	9:14:00 AM	100124	Yellow Lillys	10	0.99	9.9
8	900	003	11/19/2014	9:14:00 AM	100136	Yellow Orchids	21	1.5	31.5
9	904	003	11/19/2014	9:20:00 AM	100137	Red Orchids	18	1.5	27
10	904	003	11/19/2014	9:20:00 AM	100141	Pink Daisy	14	1.1	15.4

What are the Benefits of Using A Table?

There are some benefits of converting a list into a table:

1. The formatting (color, style, etc.) is consistent and automatically done by Excel
2. Filters are automatically added to your table
3. Any new column or row is automatically formatted
4. Formulas are automatically duplicated across the table
5. The table can be easily named and referenced
6. The table headers are always visible

What Are Some Limitations to Using Tables?

Although tables seem like the way to go when working with data on Excel, they do have their limitations.

1. The table's format may not be available in other (previous) versions of Excel
2. Using inconsistent formulas will make you reset your cells
3. The styles of the tables are limited to the styles available on Excel

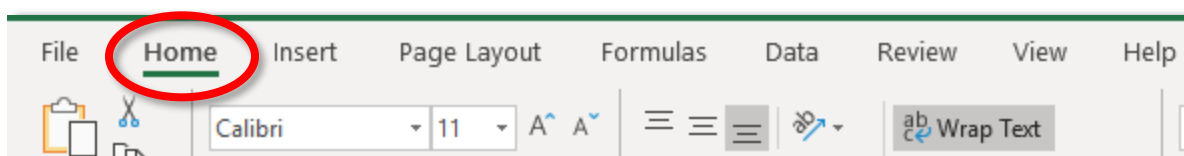
For the Excel user who likes to heavily customize the data, then shying away from using tables is probably the best option. Anything that you can do in a table, you can basically do on a list as well.

Converting Your List into A Table

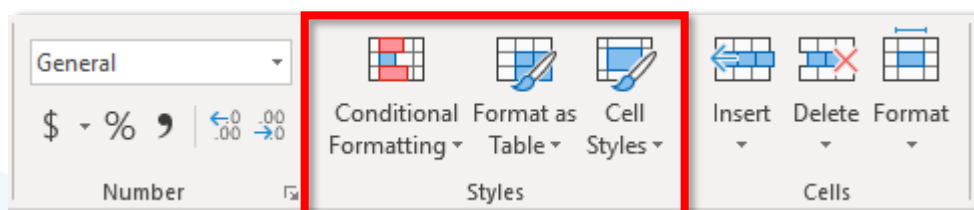
Now that you understand the benefits of converting your list (or data) into a table, let's explore the steps to create a table.

To convert your list into a table.

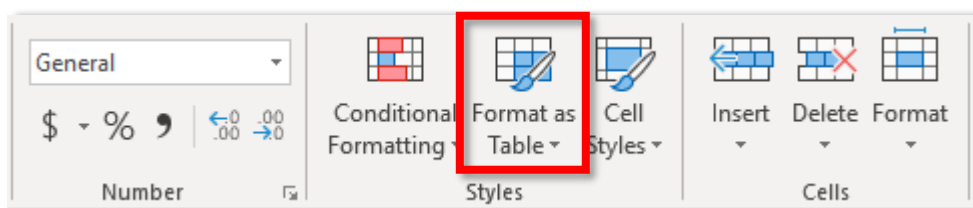
1. Click in any cell within your list.
2. Navigate to the **Home** tab.



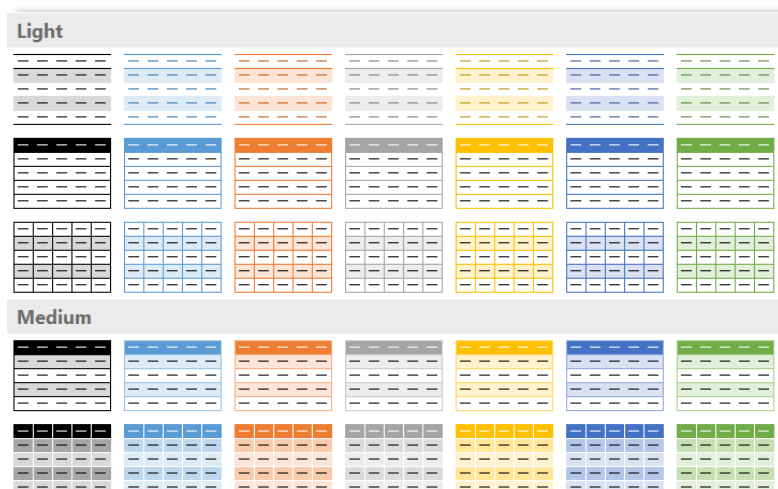
3. Locate the **Styles** group.



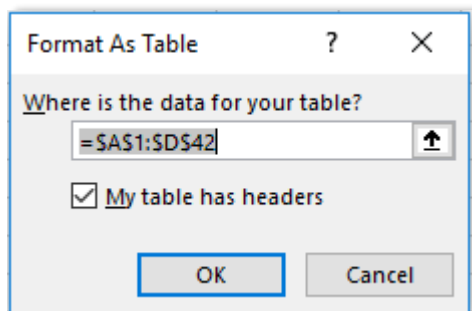
4. Select the **Format as Table** command.



5. The **Format as Table** command will display a gallery of formats for you to choose. Choose a table style.



6. Upon selecting a table style, Excel will ask you to confirm the data range of your table. Excel will typically recognize your list and automatically display it in this window to convert. Verify your range and ensure that the box titled *My table has headers* is checked.

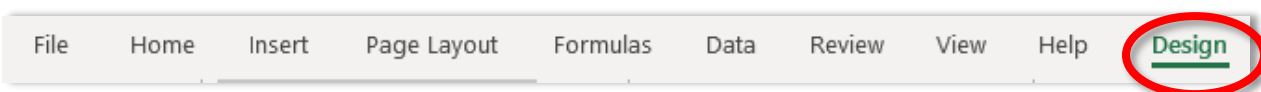


7. Click the **OK** button

You'll know that your list was converted to a table because your list will now be formatted in the color scheme that you chose from the gallery of options.

Editing & Customizing Tables

Now that you have learned how to convert your list into an official Excel table, you'll be able to customize your data and format your data in a more consistent way. Moving forward, any time that you click anywhere in your table, Excel will display a new tab called **Design**.



Navigating Through Your Table

One of the benefits of converting your list into a table is that the headers of your table are always visible. This makes it easier to scroll down your table when you have lots of data. As you scroll down your spreadsheet, you'll see that the typical column letters now display the names of your headers instead.

	Transaction No	Store ID	Date of Transaction	Time of Transaction	Item No	Item Desc	Qty	Price	Amount
27	917	005	11/19/2014	10:32:00 AM	100136	Yellow Orchids	13	1.5	19.5
28	918	003	11/19/2014	10:36:00 AM	100140	Violet Violets	20	1.25	25
29	919	003	11/19/2014	10:40:00 AM	100145	Peach Daisy	21	1.1	23.1
30	920	003	11/19/2014	10:44:00 AM	100130	Red Carnations	23	1.3	29.9
31	921	004	11/19/2014	10:48:00 AM	100145	Peach Daisy	9	1.1	9.9
32	921	004	11/19/2014	10:48:00 AM	100124	Yellow Lillys	17	0.99	16.83
33	922	003	11/19/2014	11:01:00 AM	100134	Pink Orchids	24	1.5	36
34	922	003	11/19/2014	11:01:00 AM	100124	Yellow Lillys	20	0.99	19.8
35	922	003	11/19/2014	11:01:00 AM	100128	Red Roses	10	1.25	12.5
36	922	003	11/19/2014	11:01:00 AM	100127	White Roses	16	1.25	20
37	923	005	11/20/2014	9:02:00 AM	100134	Pink Orchids	8	1.5	12
38	924	004	11/20/2014	9:06:00 AM	100130	Red Carnations	8	1.3	10.4
39	925	004	11/20/2014	9:10:00 AM	100125	White Lillys	5	0.99	4.95

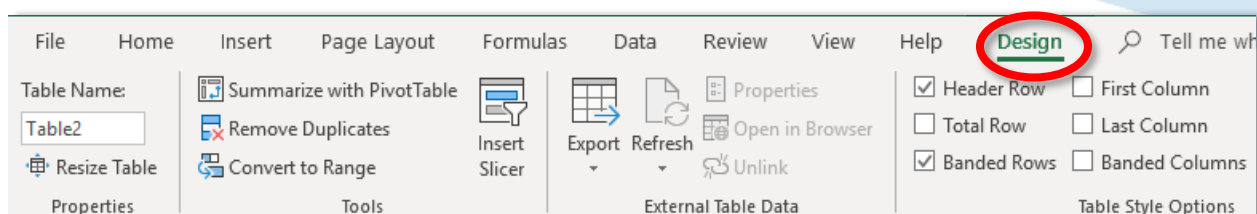
How to Name/Rename Your Table

Any range, list or cell can have a specific name in Excel. When using a table, you can easily name or rename your table. Editing the table's name allows Excel to easily reference the table. This is particularly practical when working with formulas that need to reference this table.

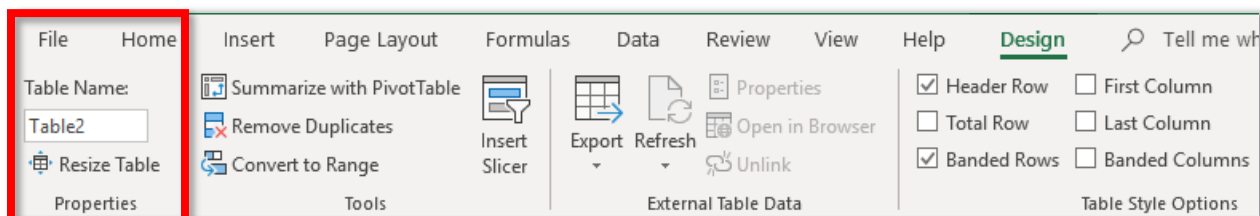
To change the name of the table:

1. Click on any cell within your table.

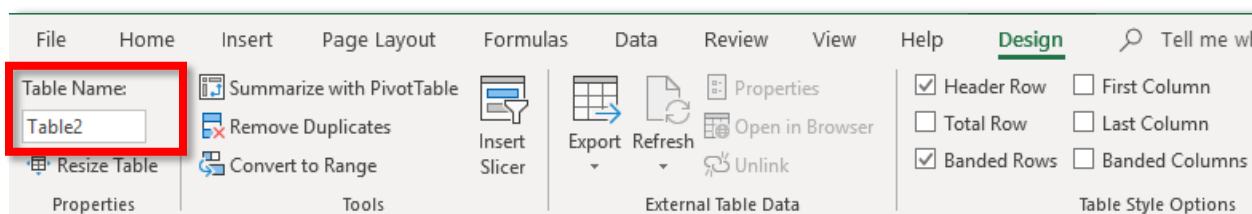
2. Navigate to the **Design** tab.



3. Locate the **Properties** group in the ribbon.



4. In the **Properties** group, click on the white bar underneath the **Table Name** section and type a name for your table. Excel will default to naming the table "Table" with a number.



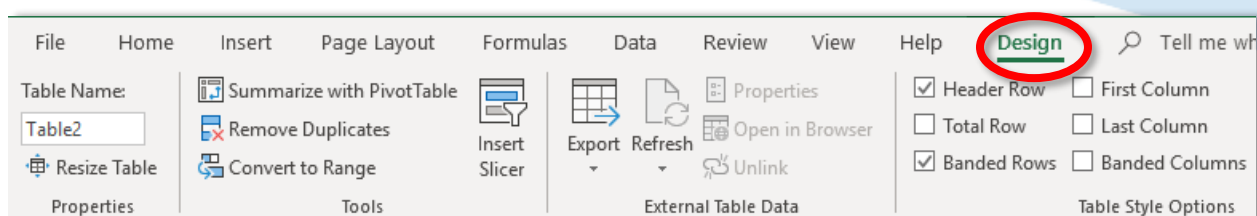
How to Update or Change the Range of Your Table

If you recall, when you first converted your list into a table, you selected the range of your table which would let Excel know what cells should be included with the table formatting. Typically, if you add new columns or rows, Excel will apply your table's formatting to those new columns or rows. However, there may be some instances in which you may need to change the data range to include other data that is not formatted as your table. In this case, you'll need to change the data source.

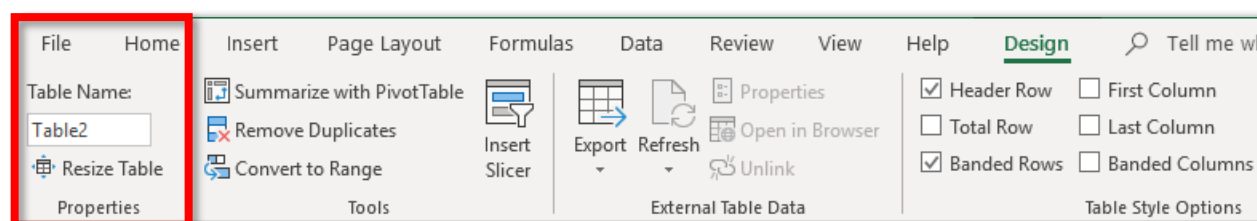
To update or change the range of your table:

1. Click on any cell within your table.

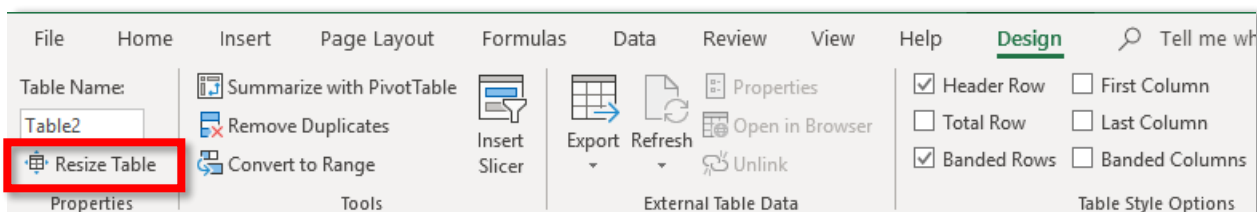
2. Navigate to the **Design** tab.



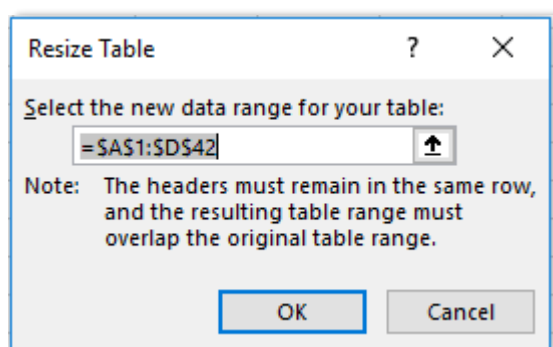
3. Locate the **Properties** group in the ribbon.



4. In the **Properties** group, click on the **Resize Table** command.



5. Clicking on the **Resize Table** command will prompt a window where you can reselect the range in your data. Select the new data range for your table and click the **OK** button when finished.



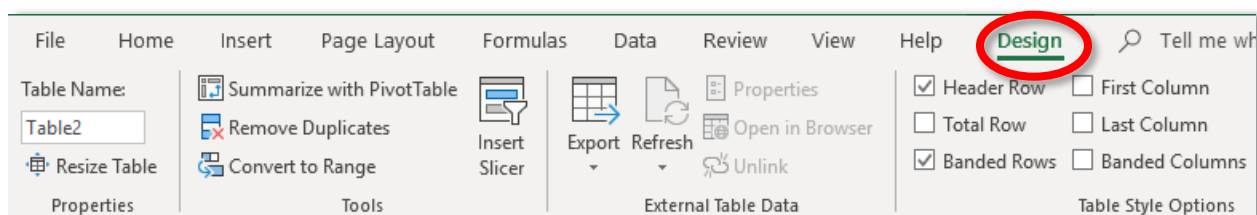
If you have followed these steps correctly, you'll notice that the boundaries of your table have been modified and the area you selected is now formatted.

How to Change the Style of Your Table

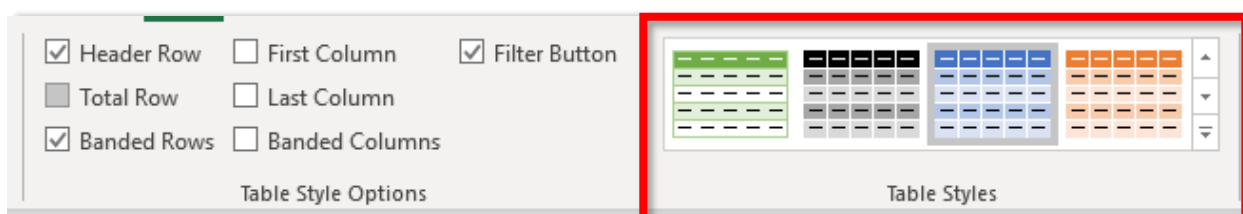
When you converted your list into a table, you selected a table style format. Excel gives you the flexibility to change the format even after you selected an original style.

To change the table style format:

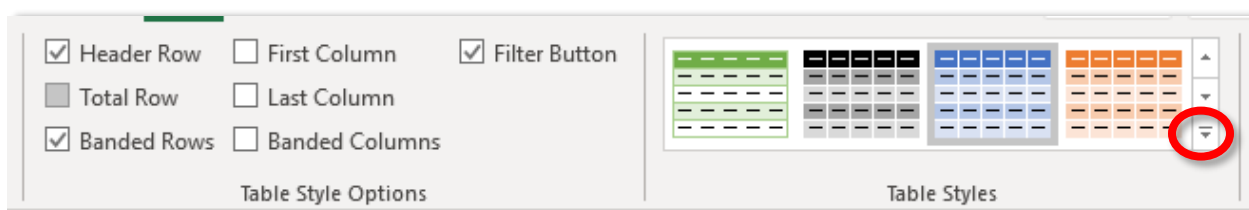
1. Click on any cell within your table.
2. Navigate to the **Design** tab.



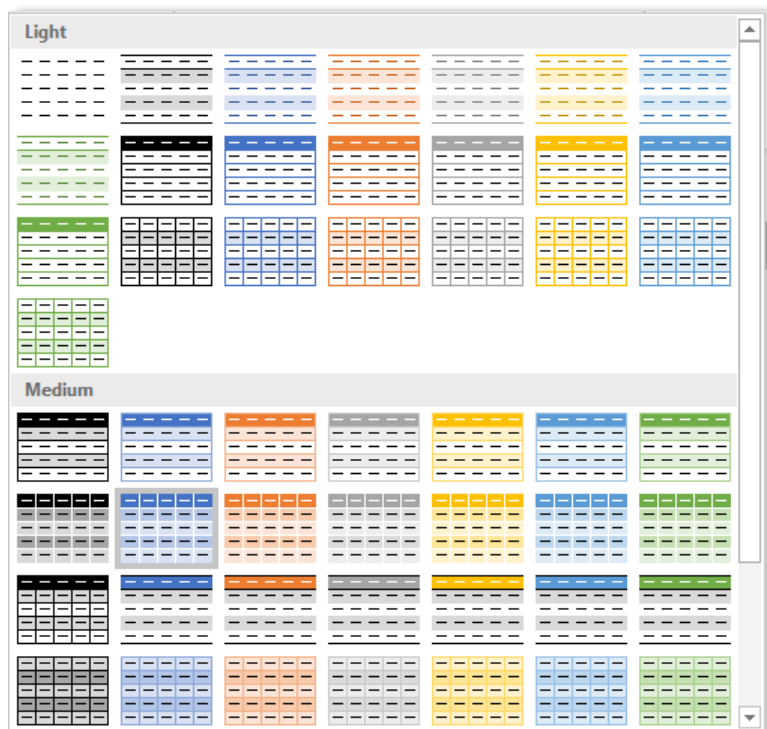
3. In the ribbon, locate the **Table Styles** group.



4. Click on the arrow in the lower-right hand corner of the group to display a gallery of styles.



5. Select the style of your choice from the gallery.

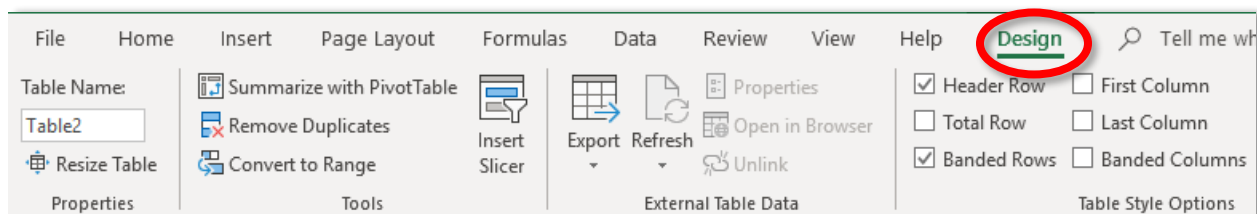


How to Get Rid of The Table Formatting

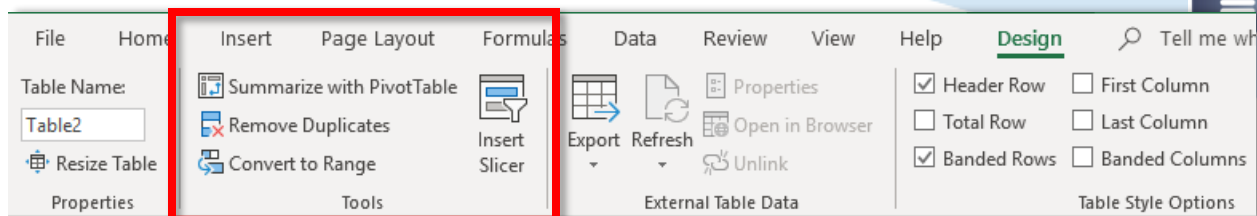
Excel makes it easy for users to convert their table back to a list. If you decide to do this, please note that the table color scheme will remain.

To convert your table back to a list:

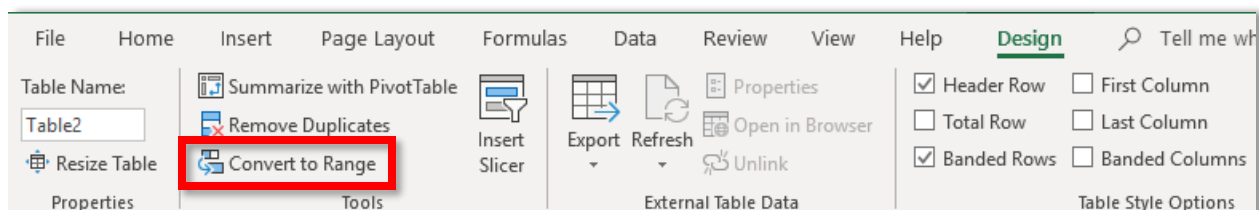
1. Click on any cell within your table.
2. Navigate to the **Design** tab.



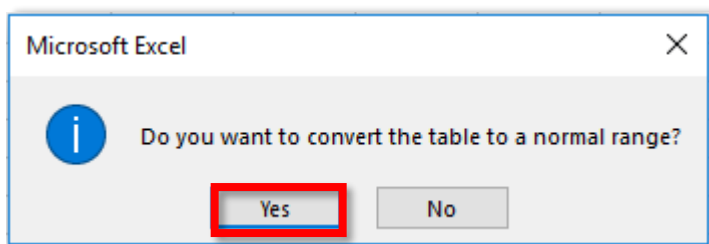
3. Locate the **Tools** group in the ribbon.



4. In the **Tools** group, click on the **Convert to Range** command.



5. Clicking on the **Convert to Range** command will display a window. Excel just wants to confirm that you want to convert your table back to a *normal range* or a list. Click on the **Yes** button.



After completing these steps, the table formatting will disappear and Excel will only recognize your data as a list, not a table.

Introduction to Excel Formulas

Excel formulas can be a scary thing if you have never worked with them before. Once you get the hang of them, they make your life much easier and help you do less manual work on spreadsheets. Before you get a chance to work with Excel formulas, let's first explore a few tips and learn the basic structure of Excel formulas.

5 Tips to Remember About Excel Formulas

The following tips will hopefully help you learn and understand the structure of formulas, how to approach using the Advanced Excel formulas and when to use them.

Excel speaks its own language

To make things simplistic, assume that your goal is to learn a language called Excel. By learning Excel's language, you can tell Excel what you want it to do by *writing* in Excel's language. Luckily, most of the way we think and speak can be easily "translated" into Excel's language. Keep this concept in mind while you work on these more Advanced Excel formulas and pretend that you are the translator.

An Excel Formula cannot read words

In more advanced formulas, you'll want Excel to return certain values. For example, if you create a formula that will tell you when employees have completed all compliance training, then you might want Excel to show the word 'Complete' next to the employees' name. In your formula, you'll need to tell Excel to return the word 'Complete', but the only way Excel will know that you want it to return a word (or text) is if you include those words inside quotation marks. Therefore, anytime you include a word in Excel that is not a formula, you'll need to place it inside quotations marks (i.e. "Complete").

If you're stuck with a formula, read it out loud

The best habit to develop as an Excel beginner is the habit of reading the formulas out loud. Remember, you're basically learning to write a new language and it may take you some time to get the hang of this. If you read the formulas out loud, it will help you find a mistake if there is one. Additionally, if you say out loud what you want Excel to do, it will also help you to appropriately write a flawless formula.

In Excel, there are multiple ways to do the same thing

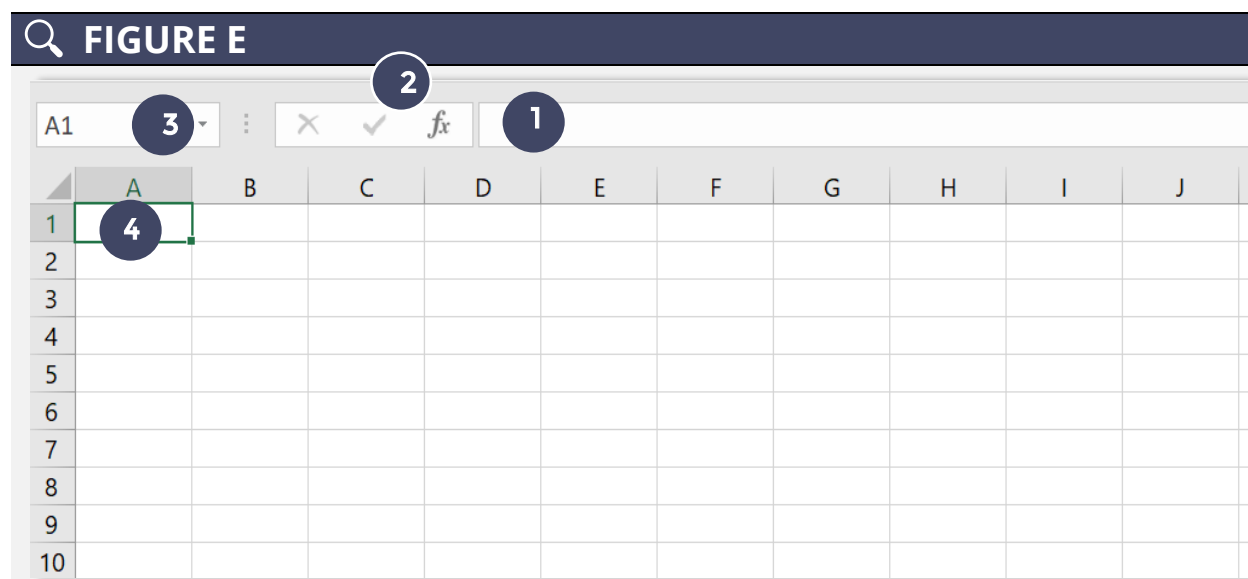
In previous sections of this booklet, you learned that one Excel function can be accessed in multiple ways. In fact, there could be a button in Excel that exists in two or three different ribbons. This is also true with Excel formulas. For example, there are multiple ways to add in Excel. You learned about the AutoSum function, but there are two other formulas that you can use that will also add numbers for you. Just like there are separate ways to say things in the English language, there are diverse ways that you can tell Excel to do something. Much of it depends on how your brain works.

Work on the first entry or row before moving on

Since we plan to use the auto-fill handle quite often, we need to make sure that we access a cell with a perfect formula. This way, we can select that cell and use the auto-fill handle to copy the formula into the other cells. This is also important when you're fixing a formula in a cell. Always make sure to work on the first entry and fix that formula so that you can use the auto-fill handle.

Writing Excel formulas

In the beginning of this booklet, you learned about the two different areas where formulas can be written. Let's recap those two areas where we can write our formulas. Explore Figure E to learn more.



1 **The Formula Bar**

The preferred area to write formulas is the formula bar. The formula bar always displays the content of the cells. The formula bar also has a help function where you can enter the function you want Excel to perform.

2 **Insert Function Option**

To the left of the formula bar there are three buttons. The most helpful of those buttons is the Insert Function option. The Insert Function button is like a formula wizard that will guide you step-by-step in creating your formula. The other two buttons are not commonly used since you can technically delete parts of your formula without having to click the 'X' button and instead of clicking on the checkmark, you can hit the Enter button on your keyboard.

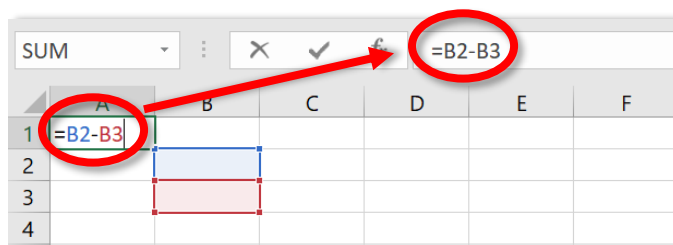
3 **The Name Box**

The Name Box can simply be used in two ways. One way the Name Box can be used is by easily referencing the tables that you create. In Excel, you can name your tables (or ranges) to easily do calculations or reference your data. Once you name your data, the names of the tables that you created will show up in the Name Box section. You can also use the name box when you're in the middle of writing a formula. In this case, the Name Box will help you find a formula, but there are other ways that we recommend that you do this instead. In this booklet, we will not cover much use of the Name Box.

4 **Writing Formulas in Cells**

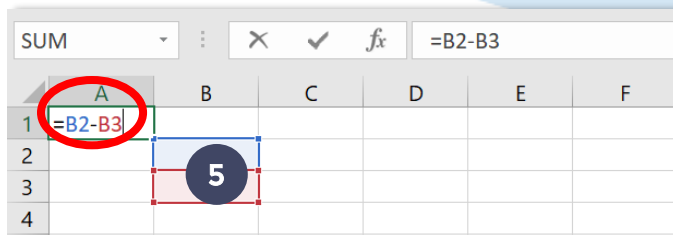
Instead of using the Formula Bar to write your formulas, it is sometimes easier (or more convenient) to write formulas by typing them directly in the cells. For longer formulas or to edit formulas, we recommend the Formula

Bar because it's easier to see the formulas written in the long bar. For short or quick formulas, typing them directly in the cells will probably be quicker than going up to the Formula Bar. Most beginners always tend to want to use the cells for formulas. We recommend that you get used to writing formulas in both sections. When writing a formula in a cell, the formula gets automatically written in the formula bar as well.



5 **The colors of the Cells**

Newer versions of Excel help you easily identify the cells included in your formulas. Excel does this by including unique color for every one of the cells you include in your formula. This allows users to visualize the cell references because they are color coded. Therefore, the cell reference's color corresponds with the shaded color of the cell when you're writing or editing a formula.



Basic Overview of Formulas

To easily understand how to *read* Excel's language, let's start with a basic overview and explore the various parts that make up simple Excel formulas.

The Equal Sign in Excel Formulas

All formulas must start with an equal sign. This is how Excel knows that you are communicating in its language. Advanced users will use the equal sign with other functions, but the number one rule when writing a formula is to start with an equal sign.

Examples of the equal sign in a formula

$$=8 + 8$$

or

$$=SUM(H4,I4,J4)$$

Using Operators in Excel Formulas

If you remember back in math class, operators are simple calculations that you use, such as a plus sign or a multiplication sign. Excel recognizes most of our common operators, but you'll need to make sure that you use the correct symbol when communicating with Excel.

Operator Type	Example of operators in Excel Formulas
Addition	=8+8
Subtraction	=10-3
Multiplication	=15*7
Division	=96/3
Power	=4^10

Cell References vs. Constants

Previously, we used simple formulas to make calculations. However, the power of Excel exists in using different cells to make calculations. Therefore, most of us use Excel – so that the software does the computation for us.

In Excel, you can add two cells or add two numbers that you choose. If you create a formula and you type a number directly into your formula, this number is called a **Constant**.

Examples of Constants in a formula

$$=8 + 8$$

or

$$=B2 * 10$$

In Excel, there are no rules to the number of **Constants** you can use but you're not limited to using **Constants** exclusively. **Cell References** allow you to make calculations based on the numbers, or content, that exists inside a cell. Therefore, Excel will make calculations based on the cells you're referencing.

Examples of Cell References in a formula

$$=B2 * 10$$

or

$$=B16 - C12$$

The Status Bar

One quick way to get the average, sum and count of a range is by looking at the **Status Bar**. The **Status Bar** automatically gives you the calculations without the need of a formula.

To get these quick calculations:

1. Select a range in your spreadsheet.
2. Look in the lower-right hand corner of your screen (which is where you will find the **Status Bar**).

Please note that the **Status Bar** will only calculate numbers, so make sure that you only select numbers when checking the **Status Bar**.

	A	B	C	D	E	F	G	H	I	J	K
1	Product Name	Product SKU	Price	Inventory	Weight	Product Description					
2	Black and Brown Wooden Chair	BBWC-089	22.99	8	6	N/A					
3	White Dining Chair	WDCH-189	39.99	2	6	N/A					
4	Black Barstools	BLBA-1219	49.99	11	7	N/A					
5	Hightop Black & Brown Tables	HBBT-1944	69.99	31	15	N/A					
6	Hightop Black & Brown Tables	HBBT-1944	69.99	31	15	N/A					
7	White Dining Tables	WDTA-4301	72.99	0	22	N/A					
8	Brown Wooden Chairs	BWCH-2292	32.99	3	6	N/A					
9	Brown Wooden Tables	BWTA-2291	69.99	8	15	N/A					
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

Ready
Exercise 1
Exercise 2 - Instructions
Exercise 2
Exercise 3 - Instructions
Exercise 3
Exercise ...
Average: 53.615
Count: 8
Sum: 428.92

How to Write Formulas

Now that you have a basic overview of how formulas work and some of the terminology we will use in the remainder of this booklet, let's discuss how formulas are written. Our goal in this booklet is to help you gain the conceptual understanding of how formulas are structured, which will help you read and write basic formulas and will eventually help you read and write the more advanced formulas as you continue your Excel journey.

The Formula Function

The equal sign is always first. The equal sign tells Excel that you're about to speak its language. After the equal sign, you'll need to write the name of the formula that you will use. This is also sometimes called the function. Excel formulas will tell Excel what calculation to make. A description of the formulas will come in the following sections but for now, it's important for you to know that the formula comes after the equal sign.

Example of a formula after the equal sign

=AVERAGE

The Parentheses in Excel formulas

First comes the equal sign. Then goes the formula function. Then, you'll need an open parenthesis. The open parentheses will explain to excel the details of your formula.

Example of how parentheses are used in formulas

=AVERAGE(

Arguments in Excel formulas

After your open parenthesis, a formula will need an **Argument**. An **Argument** in Excel describes the details of the formula in Excel's language. Each formula requires specific details, which you will learn later. In the meantime, just remember that the argument belongs inside the parentheses.

Example of an argument in a formula

=SUM(B1,B2,B3)

Completing a Formula

Formulas must end with a parenthesis. Once you have written your formula, you can press the Enter key or the tab key on your keyboard to confirm the calculation with Excel. Technically, you don't have to write the closed parenthesis at the end of your formula. Instead, you can press the Enter key and the closed parenthesis will be included by Excel automatically.

Example to complete a formula with a closed parenthesis

=SUM(B1,B2,B3)

Writing Basic Excel Formulas

Now that we have covered the basic make-up of formulas, the formulas presented in this section will make a lot more sense. Knowing how formulas are structured is key to understanding how to use and write formulas. Much of the formulas that we will introduce in this section will come to you easier than you might have imagined.

The AutoSum Function

Before getting into the depths of writing and using basic formulas, let's begin with a simple Excel function that allows you to make a simple calculation: The AutoSum function is an important function that will also help introduce the world of formulas in Excel. Although the **AutoSum** function does not require you to write a formula it will automatically add your data and will introduce you to the **SUM** formula.

Using the AutoSum Button

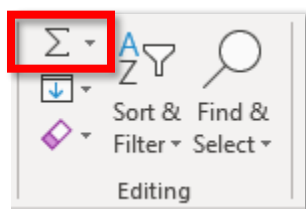
The **AutoSum** button works well when your data is organized in columns. However, even if your data isn't organized this way, you may still use it. The **AutoSum** function will add your cells together providing you with the total computation.

To use the **AutoSum** function:

1. Select a cell where you want the computation to appear (which would typically be next to your set of organized data).

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	

2. Click on the **AutoSum** button which is in the **Editing** section of the **Home** tab



- The **AutoSum** command will automatically generate a **SUM** formula in the cell that you selected, indicating in the highlighted area (with the active dashes) which cells will be included in the calculation. Hit the **Enter** key on your keyboard

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=SUM(B2:B15)

Notice how the **AutoSum** function simply creates a formula for you automatically. We'll discuss these formulas in detail later in this booklet. After hitting the **Enter** key, the computation will now show in the cell you selected.

	A	B	C
1	Account Name	Sales Amount	Average Order
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65	100.3343444
3	ESPINOZA YARD LLC	\$295,231.23	89.9999999
4	NGUYEN INSTITUTE	\$294,923.13	85.25
5	DAN & CRADSTREED INC.	\$246,715.65	78.5
6	GRACE WARE LLC	\$224,816.89	75.6666666
7	STANFORD LAW INC.	\$213,352.65	70.321
8	DAVID&MIMIS INC	\$211,193.76	67.67777
9	ROBERT SATIN, MD.	\$196,825.43	65.555555
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38	40.33333333
11	FLOYD INC.	\$147,635.76	38.75
12	BASIC TEES, LLC	\$131,281.65	36.55
13	ONE WORLD FINANCIAL	\$113,949.66	27.87
14	ITALIANO BISTRO FRANCHISE	\$109,443.01	25.25
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50	20.2
16	TOTAL	\$2,722,253.35	

Other AutoSum Calculations

The **AutoSum** function can do other types of calculations other than summing your data. The **AutoSum** can also calculate averages and count your content as well.

To use **AutoSum** for other calculations:

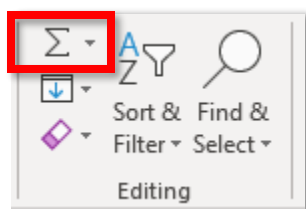
The **AutoSum** button works well when your data is organized in columns. However, even if your data isn't organized this way, you may still use it. The **AutoSum** function will add your cells together providing you with the total computation.

To use the **AutoSum** function:

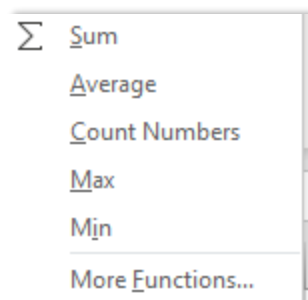
1. Select a cell where you want the computation to appear (which would typically be next to your set of organized data).

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	

2. Click on the **AutoSum** button which is in the **Editing** group of the **Home** tab.



3. From the **AutoSum** drop-down menu, select the calculation of your choice.



- The **AutoSum** command will automatically generate a formula in the cell that you selected, based on the computation you chose from the **AutoSum** drop-down menu. Confirm that the selected cells are the correct cell references and press the **Enter** key on your keyboard to complete the calculation.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=SUM(B2:B15)

The Auto Fill Handle

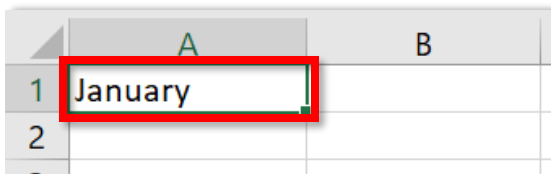
Microsoft Excel has a useful tool called the **Auto Fill Handle**. The **Auto Fill Handle** helps you become more efficient in Excel by quickly copying patterns or formulas across multiple cells. The **Auto Fill Handle** is recognized as a little, black, flat cross that appears in the lower-right hand corner of a cell. There are two main ways to use the **Auto Fill Handle** to copy information across cells. Let's explore both options.

How to Drag the Auto Fill Handle When Using Patterns

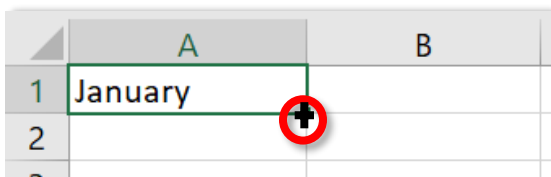
The first way to use the **Auto Fill Handle** is by *dragging* the contents of a cell onto other cells. Remember, *dragging* the **Auto Fill Handle** will copy a pattern or formula onto other cells.

To *drag* the Auto Fill Handle:

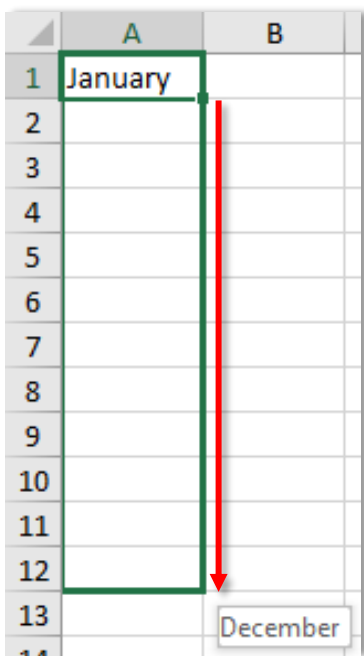
1. Select a cell that contains content or a formula that you wish to apply to other cells.



2. Place your cursor in the lower-right hand corner of the cell you selected until you see a black, flat cross. This cross is the **Auto Fill Handle**.



3. Once you see the **Auto Fill Handle**, click with your mouse and hold, dragging your cursor to the desired area.



4. Let go of the mouse so that Excel will apply the pattern to the cells you selected.

	A
1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December

How to Use the Auto Fill Handle to Duplicate Formulas

The **Auto Fill Handle** is a great tool when you have an organized list or table and are trying to quickly make calculations. Besides patterns, the **Auto Fill Handle** is used to apply a formula to other cells and referencing the appropriate cells based on your calculation.

To use the **Auto Fill Handle** to *drag (or copy) a formula*:

1. Select the cell that includes the formula you want to apply to other cells.

Expense Type	Kelly's Expenses	Raul's Expenses	Robert's Expenses	Totals
CAR INSURANCE	\$106.00	\$98.00	\$101.00	\$305.00
FAST FOOD	\$688.00	\$721.00	\$499.00	
RENT	\$853.00	\$899.00	\$1,000.00	
MISC	\$7.00	\$10.00	\$54.00	
CAR PAYMENT	\$398.00	\$450.00	\$259.00	
STUDENT LOAN	\$759.00	\$0.00	\$338.00	
TIME SHARE PAYMENT	\$877.00	\$0.00	\$0.00	
ELECTRICITY BILL	\$68.00	\$74.00	\$76.00	

2. Place your cursor in the lower-right hand corner of the cell you selected until you see a black, flat cross. This cross is the **Auto Fill Handle**.

Expense Type	Kelly's Expenses	Raul's Expenses	Robert's Expenses	Totals
CAR INSURANCE	\$106.00	\$98.00	\$101.00	\$305.00
FAST FOOD	\$688.00	\$721.00	\$499.00	
RENT	\$853.00	\$899.00	\$1,000.00	
MISC	\$7.00	\$10.00	\$54.00	
CAR PAYMENT	\$398.00	\$450.00	\$259.00	
STUDENT LOAN	\$759.00	\$0.00	\$338.00	
TIME SHARE PAYMENT	\$877.00	\$0.00	\$0.00	
ELECTRICITY BILL	\$68.00	\$74.00	\$76.00	

- Once you see the **Auto Fill Handle**, click with your mouse and hold, dragging your cursor to the desired area

Expense Type	Kelly's Expenses	Raul's Expenses	Robert's Expenses	Totals
CAR INSURANCE	\$106.00	\$98.00	\$101.00	\$305.00
FAST FOOD	\$688.00	\$721.00	\$499.00	
RENT	\$853.00	\$899.00	\$1,000.00	
MISC	\$7.00	\$10.00	\$54.00	
CAR PAYMENT	\$398.00	\$450.00	\$259.00	
STUDENT LOAN	\$759.00	\$0.00	\$338.00	
TIME SHARE PAYMENT	\$877.00	\$0.00	\$0.00	
ELECTRICITY BILL	\$68.00	\$74.00	\$76.00	

- Once you select your desired cells, let go of your mouse and Excel will apply the formula to the cells that you selected, referencing the appropriate cells in those calculations.

Expense Type	Kelly's Expenses	Raul's Expenses	Robert's Expenses	Totals
CAR INSURANCE	\$106.00	\$98.00	\$101.00	\$305.00
FAST FOOD	\$688.00	\$721.00	\$499.00	\$1,908.00
RENT	\$853.00	\$899.00	\$1,000.00	\$2,752.00
MISC	\$7.00	\$10.00	\$54.00	\$71.00
CAR PAYMENT	\$398.00	\$450.00	\$259.00	\$1,107.00
STUDENT LOAN	\$759.00	\$0.00	\$338.00	\$1,097.00
TIME SHARE PAYMENT	\$877.00	\$0.00	\$0.00	\$877.00
ELECTRICITY BILL	\$68.00	\$74.00	\$76.00	\$218.00

Your formulas should now be applied to the rest of the entries in the table.

Double-Clicking the Auto Fill Handle to copy formulas

There is an alternative to *dragging* the **Auto Fill Handle**. The alternative to *dragging* the **Auto Fill Handle** is double-clicking on the auto-fill handle. When double-clicking the **Auto Fill Handle**, the formulas will automatically copy down to the last entry it finds on your list.

To use **Auto Fill Handle** in an alternate way:

1. Select the cell that includes the formula you want to apply to other cells.

Expense Type	Kelly's Expenses	Raul's Expenses	Robert's Expenses	Totals
CAR INSURANCE	\$106.00	\$98.00	\$101.00	\$305.00
FAST FOOD	\$688.00	\$721.00	\$499.00	
RENT	\$853.00	\$899.00	\$1,000.00	
MISC	\$7.00	\$10.00	\$54.00	
CAR PAYMENT	\$398.00	\$450.00	\$259.00	
STUDENT LOAN	\$759.00	\$0.00	\$338.00	
TIME SHARE PAYMENT	\$877.00	\$0.00	\$0.00	
ELECTRICITY BILL	\$68.00	\$74.00	\$76.00	

2. Place your cursor in the lower-right hand corner of the cell you selected until you see a black, flat cross. This cross is the **Auto Fill Handle**.

Expense Type	Kelly's Expenses	Raul's Expenses	Robert's Expenses	Totals
CAR INSURANCE	\$106.00	\$98.00	\$101.00	\$305.00
FAST FOOD	\$688.00	\$721.00	\$499.00	
RENT	\$853.00	\$899.00	\$1,000.00	
MISC	\$7.00	\$10.00	\$54.00	
CAR PAYMENT	\$398.00	\$450.00	\$259.00	
STUDENT LOAN	\$759.00	\$0.00	\$338.00	
TIME SHARE PAYMENT	\$877.00	\$0.00	\$0.00	
ELECTRICITY BILL	\$68.00	\$74.00	\$76.00	

3. Once you see the **Auto Fill Handle**, double-click with your mouse. And Excel will automatically apply the formula to the cells in your table.

Expense Type	Kelly's Expenses	Raul's Expenses	Robert's Expenses	Totals
CAR INSURANCE	\$106.00	\$98.00	\$101.00	\$305.00
FAST FOOD	\$688.00	\$721.00	\$499.00	\$1,908.00
RENT	\$853.00	\$899.00	\$1,000.00	\$2,752.00
MISC	\$7.00	\$10.00	\$54.00	\$71.00
CAR PAYMENT	\$398.00	\$450.00	\$259.00	\$1,107.00
STUDENT LOAN	\$759.00	\$0.00	\$338.00	\$1,097.00
TIME SHARE PAYMENT	\$877.00	\$0.00	\$0.00	\$877.00
ELECTRICITY BILL	\$68.00	\$74.00	\$76.00	\$218.00

SUM formula

We haven't formally introduced the SUM formula, but this is one of the most basic and easiest formulas to understand and write because it's a calculation we learned in grade school. The SUM formula basically adds cells, ranges or digits. The structure of the SUM formula (just like all the other formulas we will be covering in this booklet) is the same as what was previously discussed in the previous section.

Example of a SUM formula

=SUM(A1:H25)

To create a SUM formula:

1. Select the cell in your spreadsheet where you want Excel to do the calculation.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	

2. In the cell you selected type **=SUM(**

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=SUM(

3. With your mouse, select the range you want to add.

	A	SUM(number1, [number2])
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=SUM(B2:B15)

4. Selecting the data you want to add with your mouse will automatically include a range in your formula. Press the **Enter** key on your keyboard to complete the formula.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=SUM(B2:B15)

Following these steps correctly will display the computation in the cell that you selected.

Cell Ranges in formulas

In Excel formulas, a range of data is displayed in an *argument* with a colon. For example, the range between C3 and C20 would be represented in Excel's language as C3:C20. Using the colon will tell Excel to include all the cells between the two cell references. When the range of an entire column is selected, you'll see the letter of that column twice with a colon in between as shown below.

Example of a range in a formula

=SUM(A1:H25)

Example of using a column as a range in a formula

14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	\$2,722,253.35

=SUM(C:C)

Using Commas in Formulas

Previously, you uncovered the colon that is used to represent cell ranges when using Excel formulas. There is another symbol that plays an important part when using formulas: the comma. The comma is used in Excel for two purposes:

1. To include additional cell reference; typically used to mean "with" or "and"
2. To determine different parts of a formula (which we will not cover in this booklet).

The comma, for example, will determine which individual cells to compute.

Example of commas used in an argument

=SUM(B1,C1,D1)

In this example, the formula would include the *SUM* of cells B1, C1, and D1.

AVERAGE formula

The AVERAGE formula is used to calculate the average of a set of values.

Example of an AVERAGE formula

=AVERAGE(A1:H25)

To create an AVERAGE formula:

1. Select the cell in your spreadsheet where you want Excel to do the calculation.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	

2. In the cell you selected type **=AVERAGE(**

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=AVERAGE(
17		AVERAGE(number1,

- With your mouse, select the range you want to average.

	A	B	Av
1	Account Name	Sales Amount	
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65	
3	ESPINOZA YARD LLC	\$295,231.23	
4	NGUYEN INSTITUTE	\$294,923.13	
5	DAN & CRADSTREED INC.	\$246,715.65	
6	GRACE WARE LLC	\$224,816.89	
7	STANFORD LAW INC.	\$213,352.65	
8	DAVID&MIMIS INC	\$211,193.76	
9	ROBERT SATIN, MD.	\$196,825.43	
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38	
11	FLOYD INC.	\$147,635.76	
12	BASIC TEES, LLC	\$131,281.65	
13	ONE WORLD FINANCIAL	\$113,949.66	
14	ITALIANO BISTRO FRANCHISE	\$109,443.01	
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50	
16	TOTAL	=AVERAGE(B2:B15)	
17		AVERAGE(number1, (	

4. Selecting the data you want to add with your mouse will automatically include a range in your formula. Press the **Enter** key on your keyboard to complete the formula.

	A	B	
1	Account Name	Sales Amount	Average
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65	
3	ESPINOZA YARD LLC	\$295,231.23	
4	NGUYEN INSTITUTE	\$294,923.13	
5	DAN & CRADSTREED INC.	\$246,715.65	
6	GRACE WARE LLC	\$224,816.89	
7	STANFORD LAW INC.	\$213,352.65	
8	DAVID&MIMIS INC	\$211,193.76	
9	ROBERT SATIN, MD.	\$196,825.43	
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38	
11	FLOYD INC.	\$147,635.76	
12	BASIC TEES, LLC	\$131,281.65	
13	ONE WORLD FINANCIAL	\$113,949.66	
14	ITALIANO BISTRO FRANCHISE	\$109,443.01	
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50	
16	TOTAL	=AVERAGE(B2:B15)	

Following these steps correctly will display the computation in the cell that you selected.

14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	\$194,446.67

COUNT formula

The COUNT formula counts the number of entries with numbers, not words or other values.

Example of a COUNT formula

=COUNT(A1:A25)

To create a COUNT formula:

1. Select the cell in your spreadsheet where you want Excel to do the calculation.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	

2. In the cell you selected type =COUNT(

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=COUNT(

- With your mouse, select the range you want to count.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=COUNT(B2:B15)

- Selecting the data you want to add with your mouse will automatically include a range in your formula. Press the **Enter** key on your keyboard to complete the formula.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=COUNT(B2:B15)

Following these steps correctly will display the computation in the cell that you selected.

14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	14

COUNTA formula

The COUNT formula counts any entry that is *not* empty, including numbers and words.

Example of a COUNT formula

=COUNTA(A1:A25)

To create a COUNTA formula:

1. Select the cell in your spreadsheet where you want Excel to do the calculation.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	

2. In the cell you selected type **=COUNTA(**

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=COUNTA(

- With your mouse, select the range you want to count.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=COUNTA(A2:A15)

- Selecting the data you want to add with your mouse will automatically include a range in your formula. Press the **Enter** key on your keyboard to complete the formula.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=COUNTA(A2:A15)

Following these steps correctly will display the computation in the cell that you selected.

14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	14

MAX Formula

Use the MAX formula to display the highest amount in a selected range.

Example of the MAX formula

=MAX(A1:A78)

To create a MAX formula:

1. Select the cell in your spreadsheet where you want Excel to do the calculation.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	

2. In the cell you selected type **=MAX(**

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=MAX(

- With your mouse, select the range where you want to attain the highest amount.

1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=MAX(B2:B15)

- Selecting the data you want to add with your mouse will automatically include a range in your formula. Press the **Enter** key on your keyboard to complete the formula.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	=MAX(B2:B15)

Following these steps correctly will display the computation in the cell that you selected.

14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	MAX	\$302,465.65

MIN Formula

Use the MIN formula to display the lowest amount in a selected range.

Example of the MIN formula

=MIN(A1:A78)

To create a MIN formula:

1. Select the cell in your spreadsheet where you want Excel to do the calculation.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	TOTAL	

2. In the cell you selected type **=MIN(**

1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	MIN	=MIN(

- With your mouse, select the range where you want to attain the lowest amount.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	MIN	=MIN(B2:B15

- Selecting the data you want to add with your mouse will automatically include a range in your formula. Press the **Enter** key on your keyboard to complete the formula.

Following these steps correctly will display the computation in the cell that you selected.

	A	B
1	Account Name	Sales Amount
2	THE DAILY BREAD CRUMBS LLC	\$302,465.65
3	ESPINOZA YARD LLC	\$295,231.23
4	NGUYEN INSTITUTE	\$294,923.13
5	DAN & CRADSTREED INC.	\$246,715.65
6	GRACE WARE LLC	\$224,816.89
7	STANFORD LAW INC.	\$213,352.65
8	DAVID&MIMIS INC	\$211,193.76
9	ROBERT SATIN, MD.	\$196,825.43
10	RAIN INSTITUTE OF THE ARTS	\$150,326.38
11	FLOYD INC.	\$147,635.76
12	BASIC TEES, LLC	\$131,281.65
13	ONE WORLD FINANCIAL	\$113,949.66
14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	MIN	=MIN(B2:B15)

14	ITALIANO BISTRO FRANCHISE	\$109,443.01
15	ABC DISTRIBUTION CENTER INC.	\$84,092.50
16	MIN	\$84,092.50

PROPER Formula

Many times, Excel documents are shared across multiple people which could lead to some data entry errors. Although there is no formula to make sure that people aren't making mistakes, there are some formulas that can do some clean up. The PROPER formula will capitalize the first letters of words in a cell and will keep the other letters in lower case. The PROPER formula is useful when your goal is to have presentable and consistent data.

Example of the PROPER formula

=**PROPER**(A1)

Example of how the Proper formula works

GEORGE WASHINGTON → PROPER FORMULA → George Washington

To use the PROPER formula:

1. Select a cell where you want to display the PROPER formula.

	A	B
1	Account Name	PROPER ACCOUNT NAME
2	THE DAILY BREAD CRUMBS LLC	
3	ESPINOZA YARD LLC	
4	NGUYEN INSTITUTE	
5	DAN & CRADSTREED INC.	

2. Type the following formula: **=PROPER**(

1	Account Name	PROPER ACCOUNT NAME
2	THE DAILY BREAD CRUMBS LLC	=PROPER(
3	ESPINOZA YARD LLC	PROPER(text)
4	NGUYEN INSTITUTE	
5	DAN & CRADSTREED INC.	

3. Select *one* cell where you want to use the PROPER formula.

	A	B
1	Account Name	PROPER ACCOUNT NAME
2	THE DAILY BREAD CRUMBS LLC	=PROPER(A2
3	ESPINOZA YARD LLC	PROPER(text)
4	NGUYEN INSTITUTE	
5	DAN & CRADSTREED INC.	

4. Complete your formula by pressing the **Enter** key in your keyboard.

	A	B
1	Account Name	PROPER ACCOUNT NAME
2	THE DAILY BREAD CRUMBS LLC	=PROPER(A2)
3	ESPINOZA YARD LLC	
4	NGUYEN INSTITUTE	
5	DAN & CRADSTREED INC.	

If you followed these steps correctly, you'll see that the selected text will now be in PROPER format.

1	Account Name	PROPER ACCOUNT NAME
2	THE DAILY BREAD CRUMBS LLC	The Daily Bread Crumbs Llc
3	ESPINOZA YARD LLC	
4	NGUYEN INSTITUTE	
5	DAN & CRADSTREED INC.	

LOWER Formula

The LOWER formula converts all letters inside a cell into lower-case text. This formula is not too commonly used but exists in lieu of the PROPER or UPPER formulas.

Example of the Lower formula

=**LOWER**(A1)

Example of how the Lower formula works

GEORGE WASHINGTON → LOWER FORMULA → george washington

To use the LOWER formula:

1. Select a cell where you want to display the LOWER formula.

	A	B
1	Account Name	PROPER ACCOUNT NAME
2	THE DAILY BREAD CRUMBS LLC	
3	ESPINOZA YARD LLC	
4	NGUYEN INSTITUTE	
5	DAN & CRADSTREED INC.	

2. Type the following formula: **=LOWER(**

	A	B
1	Account Name	PROPER ACCOUNT NAME
2	THE DAILY BREAD CRUMBS LLC	=LOWER(
3	ESPINOZA YARD LLC	
4	NGUYEN INSTITUTE	
5	DAN & CRADSTREED INC.	

3. Select *one* cell where you want to use the LOWER formula.

	A	B
1	Account Name	PROPER ACCOUNT NAME
2	THE DAILY BREAD CRUMBS LLC	=LOWER(A2
3	ESPINOZA YARD LLC	LOWER(text)
4	NGUYEN INSTITUTE	
5	DAN & CRADSTREED INC.	

4. Complete your formula by pressing the **Enter** key in your keyboard.

	A	B
1	Account Name	PROPER ACCOUNT NAME
2	THE DAILY BREAD CRUMBS LLC	=LOWER(A2)
3	ESPINOZA YARD LLC	
4	NGUYEN INSTITUTE	
5	DAN & CRADSTREED INC.	

If you followed these steps correctly, you'll see that the selected text will now be in LOWER format.

	A	B
1	Account Name	PROPER ACCOUNT NAME
2	THE DAILY BREAD CRUMBS LLC	the daily bread crumbs llc
3	ESPINOZA YARD LLC	
4	NGUYEN INSTITUTE	
5	DAN & CRADSTREED INC.	

UPPER Formula

UPPER formula converts the text inside a cell into all upper-case letters.

Example of the Upper formula

=UPPER(A1)

Example of how the Upper formula works

george washington → UPPER FORMULA → GEORGE WASHINGTON

To use the UPPER formula:

1. Select a cell where you want to display the UPPER formula.

	A	B
1	Account Name	PROPER ACCOUNT NAME
2	THE DAILY BREAD CRUMBS LLC	
3	ESPINOZA YARD LLC	
4	NGUYEN INSTITUTE	
5	DAN & CRADSTREED INC.	

2. Type the following formula: **=UPPER(**

	A	B
1	Account Name	UPPER ACCOUNT NAME
2	the daily bread crumbs llc	=UPPER(
3	espinoza yard llc	UPPER(text)
4	nguyen institute	
5	dan & cradstreed inc.	

3. Select *one* cell where you want to use the UPPER formula.

	A	B
1	Account Name	UPPER ACCOUNT NAME
2	the daily bread crumbs llc	=UPPER(A2
3	espinoza yard llc	UPPER(text)
4	nguyen institute	
5	dan & cradstreet inc.	

4. Complete your formula by pressing the **Enter** key in your keyboard.

	A	B
1	Account Name	UPPER ACCOUNT NAME
2	the daily bread crumbs llc	=UPPER(A2)
3	espinoza yard llc	
4	nguyen institute	
5	dan & cradstreet inc.	

If you followed these steps correctly, you'll see that the selected text will now be in UPPER format.

	A	B
1	Account Name	UPPER ACCOUNT NAME
2	the daily bread crumbs llc	THE DAILY BREAD CRUMBS LLC
3	espinoza yard llc	
4	nguyen institute	
5	dan & cradstreet inc.	

Translating Excel Formulas

As previously stated before, to use formulas in Excel, you'll need to learn how to *read and write* in Excel's language. You now know that the colon is used to indicate ranges and the comma is used to include cell references (translating a comma to mean "with" or "and" when writing formulas). Let's look at translating some examples.

Formula	How to read it/translate it
=SUM(C4:C20)	Excel - calculate the SUM of the range between Cells C4 and C20.
=AVERAGE(B1,B2,B3)	Excel - calculate the AVERAGE of cells B1 <i>and</i> B2 <i>and</i> B3
=AVERAGE(A1:A25,C1:25)	Excel - calculate the AVERAGE of the range between Cells A1 and A25 <i>and</i> the range between Cells C1 and C25

=SUM(A4:A18)*10	Excel - calculate the SUM of the range between Cells A4 and A18 and multiply it by 10
=B3/B9	Excel - divide Cell B3 by B9

Quick Excel Calculations

The following section will provide some quick tips on how to attain calculations quickly.

Working with Dates

A critical component of using excel is working with dates. It seems as though every person that uses Excel, at one point has to figure out how many days are left, how many days have gone by or how many years are needed for something. In the following section we'll be working exclusively with dates and use formulas to make calculations while working with dates.

Formatting Dates

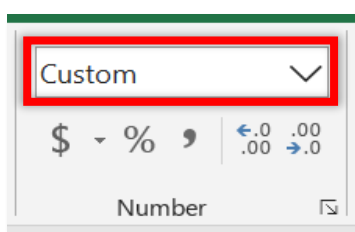
First, it's very important to know how to convert a cell or range from a generic text format to a date format. There are two common date formats that are used in Excel.

To format your cells or range into as a date:

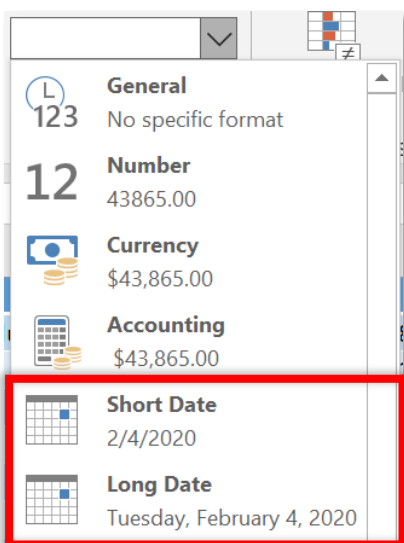
1. Select the area that you want to convert to a date format.

D	E	F
Phone	Last contact	Status Update
1-313-296-3978	4-Feb	Not Interested
1-393-405-3642	5-Feb	Not Interested
1-880-171-2435	6-Feb	Wants to purchase
1-225-234-6700	7-Feb	Wants to purchase
1-427-427-0392	8-Feb	Not Interested
1-508-189-9848	9-Feb	Not Interested
1-288-897-8181	10-Feb	Not Interested
1-528-455-8474	11-Feb	Not Interested

2. Navigate to the **Number** group (located in the **Home** tab) and select the drop-down menu.



3. Select one of the following two date formats: 1) **Short Date** and 2) **Long Date**



Customizing the Date Formats

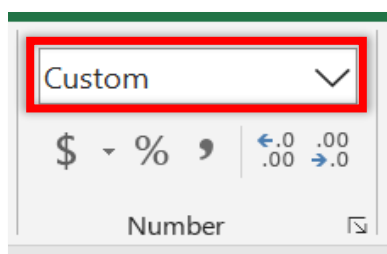
If you are not pleased with the two options Excel gives you for date formats, Excel has other options to choose from.

To customize the date format:

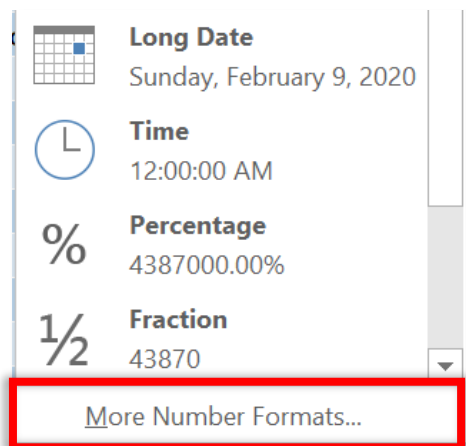
1. Select the area that you want to convert to a date format.

D	E	F
Phone	Last contact	Status Update
1-313-296-3978	4-Feb	Not Interested
1-393-405-3642	5-Feb	Not Interested
1-880-171-2435	6-Feb	Wants to purchase
1-225-234-6700	7-Feb	Wants to purchase
1-427-427-0392	8-Feb	Not Interested
1-508-189-9848	9-Feb	Not Interested
1-288-897-8181	10-Feb	Not Interested
1-528-455-8474	11-Feb	Not Interested

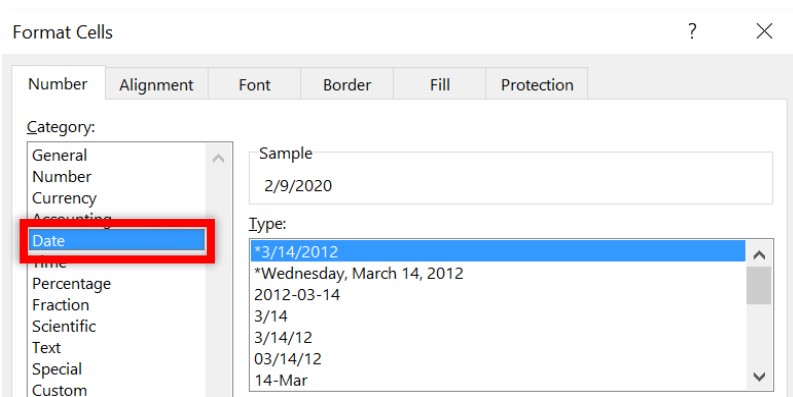
2. Navigate to the **Number** group (located in the **Home** tab) and select the drop-down menu.



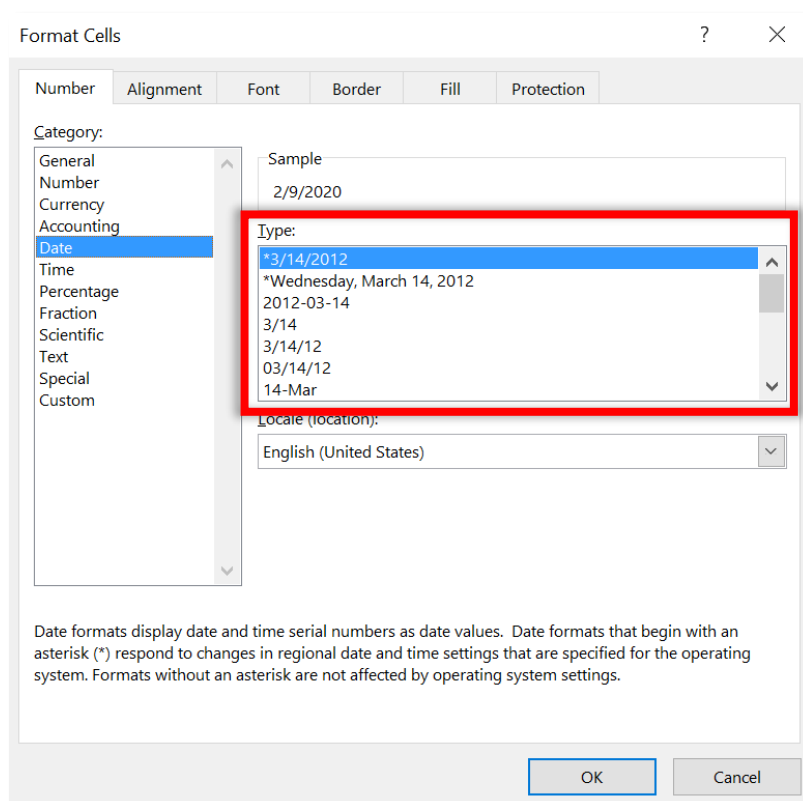
3. Select the **More Number Formats...** option from the drop-down menu.



4. The **Format Cells** window will appear next. In the **Number** tab, you'll have various format types to choose from. Select the **Date** category located on the left menu.



5. In the **Type** area, select an option from the various date formats. The *Sample* section displays a preview of the format you choose. Once you're done, select the **OK** button.



Working with Dates and Formulas

Excel not only allows you to do calculations for dollar amounts and basic numbers, but it can also do calculations on date formats. In this section you'll explore a few ways that you can use dates to make calculations.

TODAY Formula

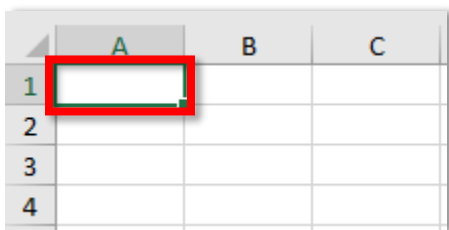
The TODAY formula allows users to quickly display the current date in a cell. This is extremely helpful when you want to make up-to-date calculations. Therefore, if you use the TODAY formula today and log into Excel tomorrow, tomorrow's date will display in the cell where you used the TODAY formula. The TODAY formula doesn't require an argument.

Example of the TODAY formula

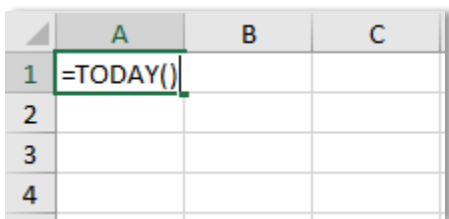
=TODAY()

To create a **TODAY** formula:

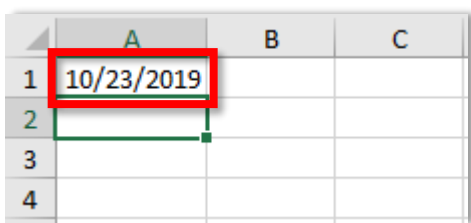
1. Select the cell in your spreadsheet where you want the current date displayed.



2. In the cell you selected, type **=TODAY()**



3. Press the **ENTER** key on your keyboard to complete the formula and you will see the current date displayed in the cell you selected.



Adding a date and number of days to calculate a future date

Just like you can add digits in Excel, the same holds true for making calculations when you're using dates.

To use formulas to calculate days in the future:

1. Click on a cell to type a formula.

	A	B
1	Current Date	Date in 45 days
2	10/23/2019	

2. Type = and use the cell with the date you want to reference in your formula by clicking on that cell. This will be your *start date*.

	A	B
1	Current Date	Date in 45 days
2	10/23/2019	=A2

3. Add the number of days you want to include in your calculation by selecting another cell reference or using a constant.

	A	B
1	Current Date	Date in 45 days
2	10/23/2019	=A2+45

4. Press the **Enter** key on your keyboard to complete your computation.

	A	B
1	Current Date	Date in 45 days
2	10/23/2019	12/7/2019

Once you're done typing your formula, check the cell to ensure that your formula is calculating correctly. The *end date* will display in the cell with your formula.

Using formulas with cell references that have dates

In Excel, you can also make certain calculations by adding or subtracting two dates together. For example, perhaps you want to know the days in between two dates. In this case, you can use the subtraction operator to come up with that calculation, even if those two dates are cell references.

To calculate the number of days between two dates:

1. Click on the cell where you want to make your calculation.

	A	B	C
1	Invoice Date	Current Date	Days Past Due
2	8/1/2019	10/23/2019	

2. Type = and reference the first cell with the most recent date by clicking on that cell.

	A	B	C
1	Invoice Date	Current Date	Days Past Due
2	8/1/2019	10/23/2019	=B2

3. In your formula, subtract that cell with the older date located as a cell reference.

	A	B	C
1	Invoice Date	Current Date	Days Past Due
2	8/1/2019	10/23/2019	=B2-A2

4. Press the **Enter** key on your keyboard to complete your formula.

	A	B	C
1	Invoice Date	Current Date	Days Past Due
2	8/1/2019	10/23/2019	83

Once you're done with your formula, check the cell with your calculation to make sure that the formula is giving you the correct computation.

DAYS Formula

In the previous section, you learned how to manually subtract two dates to compute the number of days in between. Excel allows the simplicity of using a formula that will automatically do this calculation. The DAYS formula will calculate the number of days between two dates.

Example of the DAYS formula:

=DAYS(C2,D2)

The DAYS formula consists of two parts in the argument:

=DAYS(End Date,Start Date)

To create a **DAYS** formula:

1. Select the cell where you want to create your **DAYS** formula.

	A	B	C
1	Invoice Date	Current Date	Days Past Due
2	8/1/2019	10/23/2019	

2. In the cell, type **=DAYS(**

	A	B	C
1	Invoice Date	Current Date	Days Past Due
2	8/1/2019	10/23/2019	=DAYS(

3. Click on the cell that has the *end date* you want to reference and type a comma to complete the first part of the formula.

	A	B	C
1	Invoice Date	Current Date	Days Past Due
2	8/1/2019	10/23/2019	=DAYS(B2,

4. Click on the cell reference that contains the *start date*.

	A	B	C
1	Invoice Date	Current Date	Days Past Due
2	8/1/2019	10/23/2019	=DAYS(B2,A2

5. Press the **Enter** key on your keyboard to complete the formula.

	A	B	C
1	Invoice Date	Current Date	Days Past Due
2	8/1/2019	10/23/2019	83

You'll know that you typed the formula correctly if you don't get an error message in the cell where you did the calculation and if the calculation is correct.

YEARFRAC Formula

The YEARFRAC formula helps calculate the number of years between two dates. To complete the YEARFRAC formula you'll need to cell references. Excel will display the computation, not as a whole number, but as a decimal, providing you with the exact time that has passed in years.

Example of the YEARFRAC formula:

=YEARFRAC(C2,D2)

The YEARFRAC formula consists of two parts in the argument:

=YEARFRAC(Start Date,End Date)

To create a **YEARFRAC** formula:

1. Select the cell where you want to create your **YEARFRAC** formula.

G	H	I
DOB	TODAY'S DATE	YEARS
1/30/1990	7/15/2020	

2. In the cell, type **=YEARFRAC(**

G	H	I
DOB	TODAY'S DATE	YEARS
1/30/1990	7/15/2020	=YEARFRAC(

3. Click on the cell reference that contains the *start date* and type a comma to end the first part of the formula.

G	H	I	J
DOB	TODAY'S DATE	YEARS	
1/30/1990	7/15/2020	=YEARFRAC(G2	

4. Click on the cell reference that contains the *end date*.

G	H	I	J
DOB	TODAY'S DATE	YEARS	
1/30/1990	7/15/2020	=YEARFRAC(G2,H2	

5. Press the **Enter** key on your keyboard to complete the formula.

G	H	I
DOB	TODAY'S DATE	YEARS
1/30/1990	7/15/2020	30.45833

You'll know that you typed the formula correctly if you don't get an error message in the cell where you did the calculation and if the calculation is correct.

DAY Formula

Another formula that may be useful is the **DAY** formula. The **DAY** formula helps users transfer or extract the day of the date. Therefore, if one needs the number 14th from

February 14th, the **DAY** formula will help get that number. The **DAY** formula only contains one part in its argument.

Example of the DAY formula:

=DAY(C2)

To create a **DAY** formula:

1. Click on a cell where you want to create your **DAY** formula.

A	B
Date	Day (Num)
4/7/1967	

2. In the cell, begin typing the **DAY** formula as follow: =DAY(

A	B
Date	Day (Num)
4/7/1967	=DAY(

3. In the argument, select a cell that contains a date.

A	B
Date	Day (Num)
4/7/1967	7

4. Hit the **Enter** key on your keyboard to complete your formula.

If done correctly, the **DAY** formula will display the day of the date that you included in the argument.

MONTH Formula

A formula that is more commonly used than the **DAY** formula is the **MONTH** formula. The **MONTH** formula returns the numeric month of a date. Therefore, if you want to get the numeric month from the date, February 14th, then the **MONTH** formula would display the number 2 because February is the 2nd month of the year.

Example of the MONTH formula:

=MONTH(C2)

To create a **MONTH** formula:

1. Click on a cell where you want to create your **MONTH** formula.

A	B
Date	Month
4/7/1967	

2. In the cell, begin typing the **MONTH** formula as follow: =MONTH(

A	B
Date	Month
4/7/1967	=MONTH(

3. In the argument, select a cell that contains a date.

A	B
Date	Month
4/7/	=MONTH(A2)

4. Hit the **Enter** key on your keyboard to complete your formula.

A	B
Date	Month
4/7/1967	4

If done correctly, the **MONTH** formula will display the month as a number.

YEAR Formula

Another formula that is more commonly used is the **YEAR** formula. The **YEAR** formula returns the year given in a date. This is helpful in the event that you want to extract somehow the year of a date.

Example of the **YEAR** formula:

=YEAR(C2)

To create a **YEAR** formula:

1. Click on a cell where you want to create your **YEAR** formula.

A	B
Date	Year
4/7/1967	

2. In the cell, begin typing the **YEAR** formula as follow: =YEAR(

A	B
Date	Year
4/7/1967	=YEAR(

3. In the argument, select a cell that contains a date.

A	B
Date	Year
4/7/1967	=YEAR(A2

4. Hit the **Enter** key on your keyboard to complete your formula.

A	B
Date	Year
4/7/1967	1967

If done correctly, the **YEAR** formula will display the year only.

Working with Advanced Excel Formulas

The formulas you will be learning in this Advanced Excel booklet are complex, take time to learn but will help you do your job much quicker and smarter. To use and understand these formulas, we rely on the assumption that you are comfortable and familiar with some of the more basic Excel formulas such as the SUM formula, COUNT formulas and AVERAGE formula.

Anchors in Formulas

Now that you have learned how to use the **Auto Fill Handle**, you may also have a need to learn how to use **Anchors** in Excel. **Anchors** allow users to lock cells in a formula, allowing you to use the **Auto Fill Handle** or to copy formulas without changing one or various cell references.

Why do I need to use Anchors?

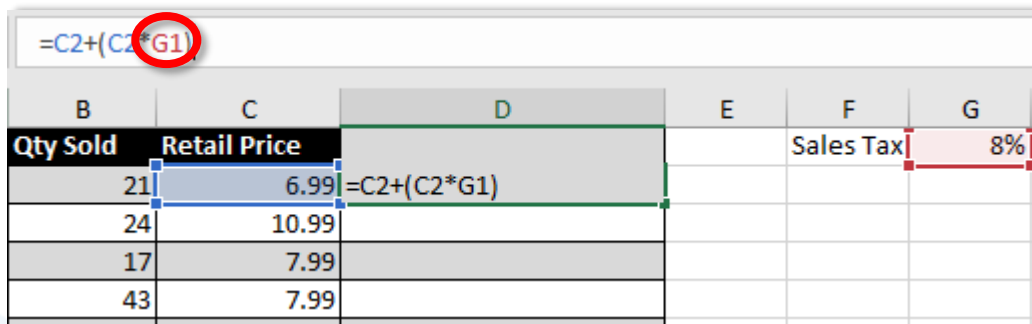
If you need to apply a formula to an entire column for example, but you need each cell in that row to reference the *same* cell, then you can only lock that cell by using an **Anchor**. By default, when you use the **Auto Fill Handle**, the cell references will change. When you use an **Anchor**, the cell reference will not change and instead will display a dollar sign surrounding the column and row in the formula bar (i.e. \$I\$3). To *anchor* a cell in a formula, use the **F4** key in your keyboard.

How to use Anchors in Formulas

Remember, **Anchors** will lock a cell inside a formula so that the cell reference does not change. You lock cells by hitting the **F4** key on your keyboard.

To use anchors in your formula:

1. Access the formula bar and identify the cell reference that needs to be anchored.



B	C	D	E	F	G
Qty Sold	Retail Price			Sales Tax	8%
21	6.99	=C2+(C2*G1)			
24	10.99				
17	7.99				
43	7.99				

- Click on the cell reference you want to **Anchor** from inside the formula bar.

=C2+(C2*G1)						
B	C	D	E	F	G	
Qty Sold	Retail Price			Sales Tax	8%	
21	6.99	=C2+(C2*G1)				
24	10.99					
17	7.99					
43	7.99					

- Press the **F4** key on your keyboard to add the **Anchors**.

=C2+(C2*\$G\$1)						
B	C	D	E	F	G	
Qty Sold	Retail Price			Sales Tax	8%	
21	6.99	=C2+(C2*\$G\$1)				
24	10.99					
17	7.99					

- Select the **Enter** key on your keyboard to complete your formula.

	A	B	C	D
1	Account Name	Qty Sold	Retail Price	Total Cost to Customer
2	Howard & Son Inc.	21	6.99	7.5492
3	The Getaway Franchise	24	10.99	
4	Steele Plumbing Inc.	17	7.99	
5	Loma Linda Unified School District	43	7.99	
6	ABC Study Group	44	9.99	
7	Valley Way LLC	22	4.99	

- Click back on the cell that contains your formula.

	A	B	C	D
1	Account Name	Qty Sold	Retail Price	Total Cost to Customer
2	Howard & Son Inc.	21	6.99	7.5492
3	The Getaway Franchise	24	10.99	
4	Steele Plumbing Inc.	17	7.99	
5	Loma Linda Unified School District	43	7.99	
6	ABC Study Group	44	9.99	
7	Valley Way LLC	22	4.99	

- Use the **Auto Fill Handle** to copy down the formula in your table or list.

	A	B	C	D
1	Account Name	Qty Sold	Retail Price	Total Cost to Customer
2	Howard & Son Inc.	21	6.99	7.5492
3	The Getaway Franchise	24	10.99	11.8692
4	Steele Plumbing Inc.	17	7.99	8.6292
5	Loma Linda Unified School District	43	7.99	8.6292
6	ABC Study Group	44	9.99	10.7892
7	Valley Way LLC	22	4.99	5.3892

If you did this process correctly, you'll find that each formula that you copied down has the same cell reference.

D5							
	A	B	C	D	E	F	G
1	Account Name	Qty Sold	Retail Price	Total Cost to Customer		Sales Tax	8%
2	Howard & Son Inc.	21	6.99	7.5492			
3	The Getaway Franchise	24	10.99	11.8692			
4	Steele Plumbing Inc.	17	7.99	8.6292			
5	Loma Linda Unified School District	43	7.99	8.6292			
6	ABC Study Group	44	9.99	10.7892			
7	Valley Way LLC	22	4.99	5.3892			

Advanced Text Formulas & Functions

Now that you explored some common functionality of Excel formulas as an Advanced Excel user, let's dig in to some of the most commonly used Excel formulas that Advanced Excel users use.

LEFT Formula

The **LEFT** formula allows Excel to display the content of a certain cell reference with the number of characters that you specify starting from the *left* side of the cell. The **LEFT** formula consists of two parts.

Example of the **LEFT** formula:

=LEFT(A1,5)

Example of how the **LEFT** formula works:

GEORGE WASHINGTON → *LEFT formula with 5 characters* → GEORGE WASHINGTON

The **LEFT** formula consists of two parts. The first part of the **LEFT** formula is used to select a cell reference. The second part of the **LEFT** formula is used to tell Excel how many characters you want to display in your formula.

=LEFT(Cell Reference , Number of characters to display)

To create a **LEFT** formula:

1. Click on the cell where you want to create the LEFT formula.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

2. In the cell, type **=LEFT(** to begin creating your formula.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	=LEFT(
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

3. Select the cell reference and type a **comma** afterwards.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	=LEFT(A2,
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

4. In the formula, type the number of characters you want Excel to display in this cell.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	=LEFT(A2,9
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

5. Press the **ENTER** key on your keyboard to complete the formula.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	USER-0061
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

RIGHT Formula

The **RIGHT** formula allows Excel to display the content of a certain cell reference with a number of characters that you specify starting from the *right* side of the cell reference. The **RIGHT** formula consists of two parts.

Example of the **RIGHT** formula:

=RIGHT(A1,5)

Example of how the **RIGHT** formula works

GEORGE WASHINGTON → *RIGHT formula with 5 characters* → GEORGE WASHINGTON

The first part of the **RIGHT** formula is used to select a cell reference. The second part of the **RIGHT** formula is used to tell Excel how many characters you want to display in your formula.

=RIGHT(Cell Reference , Number of characters to display)

To create a **RIGHT** formula:

1. Click on the cell where you want to create the **RIGHT** formula.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

2. In the cell, type **=RIGHT(** to begin creating your formula.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	=RIGHT(
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

3. Select the cell reference followed by a **comma**

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	=RIGHT(A2,
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

4. In the formula, type the number of characters you want Excel to display in this cell.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	=RIGHT(A2,4
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

5. Press the **ENTER** key on your keyboard to complete the formula.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	4891
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

MID Formula

The **MID** formula allows Excel to display the content of a certain cell reference with a number of characters that you specify starting from the *middle* of the cell reference. Unlike the LEFT and RIGHT formulas, the **MID** formula consists of three parts.

Example of the **MID** formula:

=MID(A1,2,5)

Example of how the **MID** formula works:

GEORGE WASHINGTON → MID formula with 5 characters → GEORGE WASHINGTON

The **MID** formula consists of three parts. The first part follows the pattern of the **LEFT** and **RIGHT** formula: select the cell reference.

=MID(Cell Reference, _____, _____)

The second part of the **MID** formula consists of selecting a starting point. In part two, you'll need to enter a number. This number will represent the number of characters excel will count from the left side to determine the starting point. In a simplistic example, imagine that your cell reference has 20 characters and you select the number 5 for part 2 of this formula. Excel will then decide to *start* the **MID** formula in the 5th character (starting from the left) of the cell reference.

=MID(Cell Reference, Starting point (from the left),

Finally, enter the number of characters to display beginning with the starting point.

=MID(Cell Reference, Starting point (from the left), No of characters to display)

To create a **MID** formula:

1. Click on the cell where you want to create the MID formula.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

2. In the cell, type =**MID**(to begin creating your formula.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	=MID(
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

3. Select the cell reference and type a comma afterwards.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	=MID(A2,
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

- In the formula, type a number that represents how many characters from the right side of the cell should Excel start. Follow the formula with a comma.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	=MID(A2,6
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

- In the third section of the formula, type how many characters Excel should display.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	=MID(A2,6,4
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

- Press the **ENTER** key on your keyboard to complete the formula.

	A	B	C
1	ID	Account Name	USER ID
2	USER-0061-4891	Howard & Son Inc.	0061
3	USER-0089-8674	The Getaway Franchise	
4	USER-0041-1982	Steele Plumbing Inc.	

CONCATENATE Formula

The **CONCATENATE** formula allows users to select the content from different cells and combine them into one cell. In the formula itself, the contents that will be displayed will be separated by a comma. Therefore, the **CONCATENATE** formula doesn't have a specific number of parts in its structure.

Example of the **CONCATENATE** formula:

=CONCATENATE(B2,C2,D2)

The **CONCATENATE** combines cell references and/or words into one cell. For example, let's say you had three cell references with the following words: *bear, yellow, three*. When you complete a **CONCATENATE** formula, you will end with one cell displaying all three cell references: *bearyellowthree*.

=CONCATENATE(Cell Reference , Cell Reference , Cell Reference)

How to use the CONCATENATE formula

The **CONCATENATE** formula is typically used to *combine cells* into one. However, you are not merging cells into one, but you are combining the content of different cells into one.

To create a **CONCATENATE** formula:

1. Select a cell where you want to create the **CONCATENATE** formula.

	A	B	C
1	Month	Day	Month & Day
2	September	4	
3	August	16	
4	July	30	

2. Begin typing the formula: =CONCATENATE(

	A	B	C
1	Month	Day	Month & Day
2	September	4	=CONCATENATE(
3	August	16	
4	July	30	

3. Select your first cell reference followed by a **comma**.

	A	B	C	D
1	Month	Day	Month & Day	
2	September	4	=CONCATENATE(A2,	
3	August	16		
4	July	30		

4. Select your second cell reference followed by a **comma**.

	A	B	C	D
1	Month	Day	Month & Day	
2	September	4	=CONCATENATE(A2,B2,	
3	August	16		
4	July	30		

5. Continue to select cell references as desired.

	A	B	C
1	Month	Day	Month & Day
2	September	4	September4
3	August	16	
4	July	30	

- Press the **ENTER** button on your keyboard when finished.

How to Use Characters in Your Formula That Excel Cannot Read

Remember, Excel cannot read regular texts since it can only read its own language when you're writing formulas. Therefore, in **CONCATENATE** formula (and in other formulas), Excel will not be able to read spaces, words, letters and symbols that don't belong in the formula. To fix this issue, you'll need to use quotation marks.

To create a **CONCATENATE** formula with special characters in the formula:

- Select a cell where you want to create the **CONCATENATE** formula.

	A	B	C
1	Month	Day	Month & Day
2	September		
3	August	16	
4	July	30	

- Begin typing the formula: **=CONCATENATE(**

	A	B	C
1	Month	Day	Month & Day
2	September		=CONCATENATE(
3	August	16	
4	July	30	

- Select your first cell reference followed by a **comma**.

	A	B	C	D
1	Month	Day	Month & Day	
2	September		=CONCATENATE(A2,	
3	August	16		
4	July	30		

- Include a space by typing it in the formula surrounded by quotation marks: **" "**,

	A	B	C	D
1	Month	Day	Month & Day	
2	September		=CONCATENATE(A2," ",B2	
3	August	16		
4	July	30		

- Select the next cell reference and continue to add cell references or other characters surrounded by quotation marks.

	A	B	C	D
1	Month	Day	Month & Day	
2	September		=CONCATENATE(A2," ",	
3	August	16		
4	July	30		

- Press the **ENTER** button on your keyboard when finished.

	A	B	C
1	Month	Day	Month & Day
2	September		September 4
3	August	16	
4	July	30	

Text to Columns

If you recall, the CONCATENATE formula combines the content of cells into one. You can also separate the content of one cell into multiple cells. To do this you would use a function called **Text to Columns**. In order to use **Text to Columns**, you'll need to make sure that the content you want to split has a delimiter (i.e. a space, comma or a character that separates the text in the current cell).

To use **Text to Columns**:

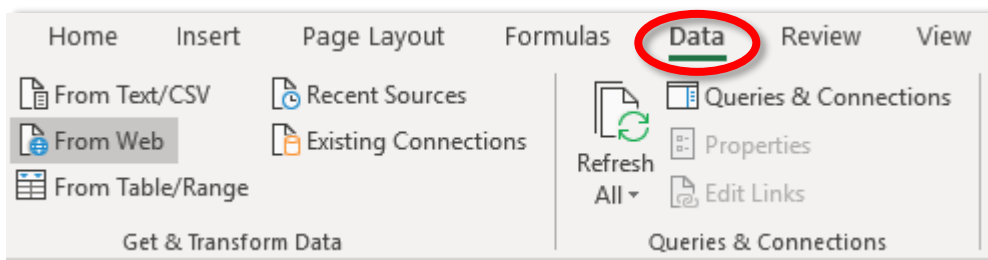
- Locate the column or cell that you wish to split the content and add a blank cell or column to the right. This will allow Excel to place the content in empty cells instead of placing the content in cells that already have content inside.

	A	B
1	Full Name	Text To Column
2	John Gundy	
3	Robert Perry	
4	Susie Wilson	

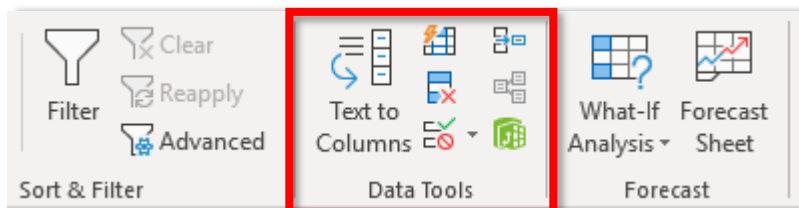
- Select the cell or cells whose content you want to split.

	A	B
1	Full Name	Text To Column
2	John Gundy	
3	Robert Perry	
4	Susie Wilson	

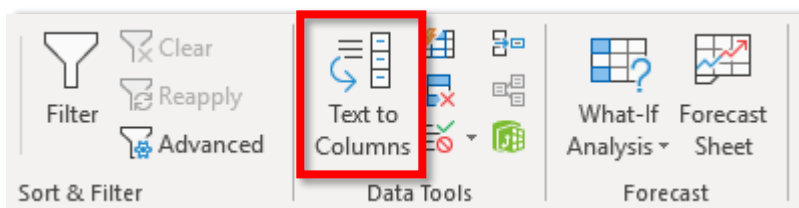
3. Navigate to the **Data** tab.



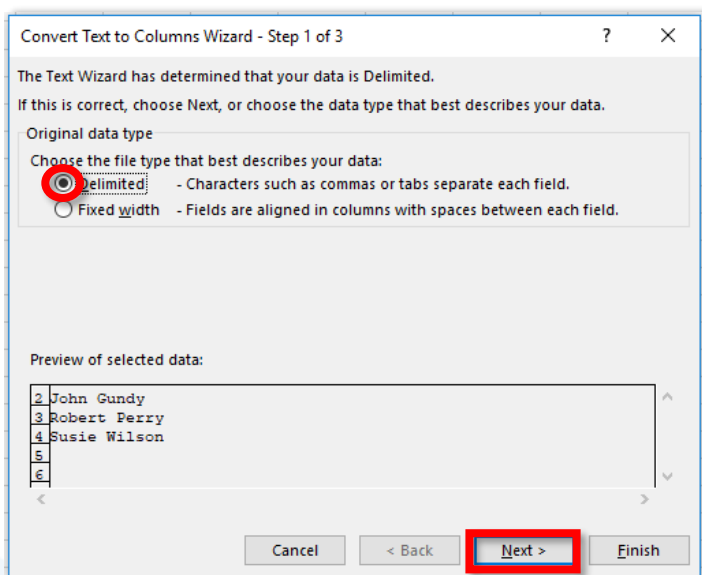
4. Locate the **Data Tools** group.



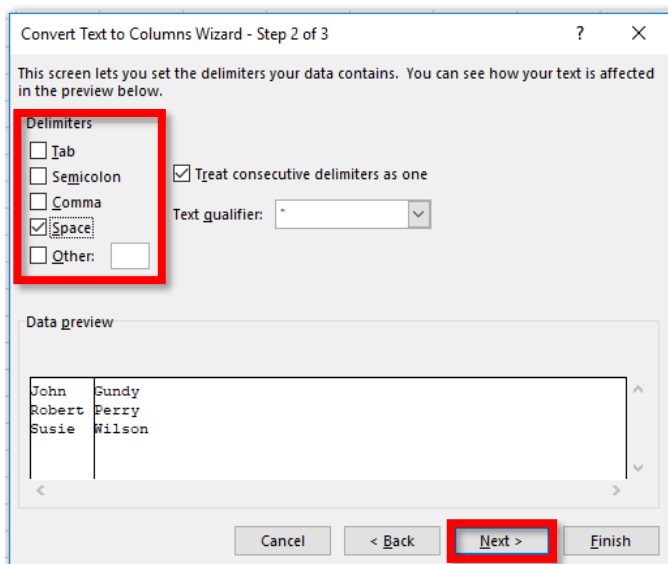
5. Select the **Text to Columns** command.



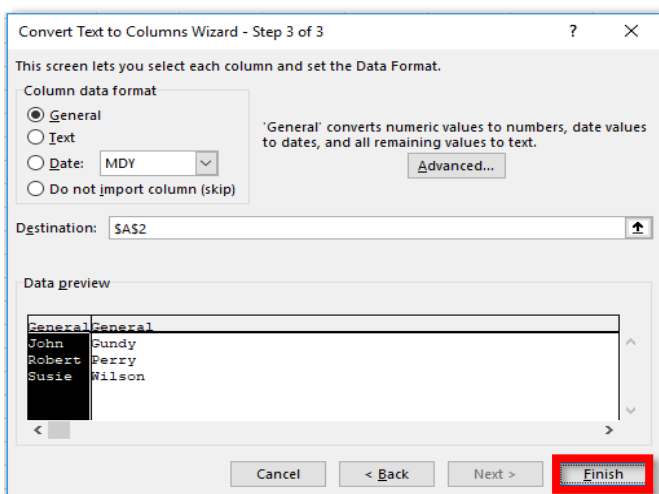
6. After selecting the **Text to Columns** command, you will see a window displayed that will allow you to follow along through certain steps to successfully complete the **Text to Columns** function. In the first step, select the **Delimited** option and click the **Next** button.



- In *Step 2*, select the *Delimiter*. This can be a tab, space, comma or another character that you can identify in the content of the cell you're planning on splitting into a column or columns. Check the appropriate box and click on the **Next** button.



- In *Step 3*, verify that the formatting of the column you'll be using and click the **Finish** button once you're done.



You'll know that you followed these steps correctly because the contents of the data in the original cells will now be split into one or more columns.

	A	B
1	Full Name	Text To Column
2	John	Gundy
3	Robert	Perry
4	Susie	Wilson

Advanced Numerical Formulas

In the following section, you'll learn about more advanced formulas that will help you compute data based on conditions. Most of the formulas combine a logical formula (such as the *IF* formula) with basic formulas (such as the SUM and AVERAGE formulas).

IFERROR Formula

Many times, when working with Excel formulas, you can't avoid error messages. This typically happens when you use a formula that should technically be used to calculate numbers but some of your cells may have words or text instead. In these cases, you may want to keep your formula but don't want to display an error message. Excel allows you to use the **IFERROR** formula which will basically ask you what content you would want to display *if an error* were to occur when using your formula.

	A	B	C	D	E
1	ID	Account Name	1st Quarter Sales	2nd Quarter Cells	Total
2	USER-0061-4891	Howard & Son Inc.	\$ 29,107.00	\$ 27,224.00	\$ 56,331.00
3	USER-0089-8674	The Getaway Franchise	NO DATA	\$ 25,647.00	#VALUE!
4	USER-0041-1982	Steele Plumbing Inc.	\$ 23,970.00	\$ 17,216.00	\$ 41,186.00

Example of the **IFERROR** formula:

=IFERROR(SUM(B2,B5),"N/A")

The **IFERROR** formula consists of two parts in its argument:

=IFERROR (Formula or Value , Content to be displayed if error is found)

To use the **IFERROR** formula:

1. Select the cell where you want to include your formula.

B	C	D	E
Account Name	1st Quarter Sales	2nd Quarter Cells	Total
Howard & Son Inc.	\$ 29,107.00	\$ 27,224.00	
The Getaway Franchise	NO DATA	\$ 25,647.00	
Steele Plumbing Inc.	\$ 23,970.00	\$ 17,216.00	

2. In the cell, begin the formula by typing **=IFERROR(**

B	C	D	E
Account Name	1st Quarter Sales	2nd Quarter Cells	Total
Howard & Son Inc.	\$ 29,107.00	\$ 27,224.00	=IFERROR(
The Getaway Franchise	NO DATA	\$ 25,647.00	
Steele Plumbing Inc.	\$ 23,970.00	\$ 17,216.00	

3. In the first part of the formula, select a cell or create a calculation in the argument. Complete the first part of the argument with a comma.

B	C	D	E
Account Name	1st Quarter Sales	2nd Quarter Cells	Total
Howard & Son Inc.	\$ 29,107.00	\$ 27,224.00	=IFERROR(C2+D2,
The Getaway Franchise	NO DATA	\$ 25,647.00	
Steele Plumbing Inc.	\$ 23,970.00	\$ 17,216.00	

4. In the second (and last part) of the formula, include the content you want to display if there is an error with the formula you just included in the first part of the argument. In this second part, you can type a word, number or include another cell reference, but remember, if you decide to use words of your own, you will need to surround that content with quotation marks.

B	C	D	E
Account Name	1st Quarter Sales	2nd Quarter Cells	Total
Howard & Son Inc.	\$ 29,107.00	\$ 27,224.00	=IFERROR(C2+D2,"N/A")
The Getaway Franchise	NO DATA	\$ 25,647.00	
Steele Plumbing Inc.	\$ 23,970.00	\$ 17,216.00	

5. Press the **Enter** key on your keyboard and use the **Auto Fill Handle** as necessary. Any entry that would normally display an error message would display the content you included in your argument.

B	C	D	E
Account Name	1st Quarter Sales	2nd Quarter Cells	Total
Howard & Son Inc.	\$ 29,107.00	\$ 27,224.00	\$ 56,331.00
The Getaway Franchise	NO DATA	\$ 25,647.00	N/A
Steele Plumbing Inc.	\$ 23,970.00	\$ 17,216.00	\$ 41,186.00

SUMIF Formula vs. SUMIFS Formula

There are two formulas that basically do the same thing but differ slightly in how they are structured and when you can use them. The **SUMIF** formula allows users to add cells or a range of cells when a condition is met. The **SUMIFS** formula allows users to add cells or a range of cells when one *or more* conditions are met. This means that the **SUMIFS** formula can do the same thing that a **SUMIF** formula can and more. Let's explore these two formulas in detail.

SUMIF Formula

The **SUMIF** formula allows users to sum the value of cells (or a range of cells) when a condition is met.

Example of the **SUMIF** formula:

=SUMIF(D:D,F2,B:B)

The **SUMIF** formula consists of three parts in its argument:

=SUMIF (Column with criteria, Cell reference, Column containing values to add)

To use the **SUMIF** formula:

1. Select the cell where you want to create your **SUMIF** formula.

G	H
State	Total orders in 5 years
CA	
IL	
NY	
TX	
WA	
OR	

2. Begin typing the formula: **=SUMIF(**

G	H
State	
CA	=SUMIF(
IL	
NY	
TX	
WA	
OR	

3. Select the range or column that includes the criteria that you want Excel to find. This data is typically found in a separate table. Type a comma after you selected the range to conclude the first part of the formula.

	A	B	C	D	E	F	G	H
1	Customer Name	State	Orders in past 5 years				State	
2	Dominguez, Barbara	CA	3				CA	=SUMIF(B:B,
3	Anthony, Rob	CA	12				IL	
4	Williams, Debon	CA	19				NY	
5	Hernandez, Harold	IL	17				TX	
6	Ochoa, Jose	IL	3				WA	
7	Houston, Steven	IL	8				OR	

4. Select the cell that includes the criteria you want Excel to find in the previous step. Type a comma to complete part two of the formula.

G	H
State	
CA	=SUMIF(B:B,G2,
IL	
NY	
TX	
WA	
OR	

5. Select the range or column that includes the data you want Excel to add.

	A	B	C	D	E	F	G	H
1	Customer Name	State	Orders in past 5 years				State	
2	Dominguez, Barbara	CA	3				CA	=SUMIF(B:B,G2,C:C)
3	Anthony, Rob	CA	12				IL	
4	Williams, Debon	CA	19				NY	
5	Hernandez, Harold	IL	17				TX	
6	Ochoa, Jose	IL	3				WA	
7	Houston, Steven	IL	8				OR	

6. Press the **Enter** key on your keyboard. Use the **Auto Fill Handle** to apply the formula to other rows.

G	H
State	Total orders in 5 years
CA	181
IL	88
NY	34
TX	47
WA	74
OR	32

Once you complete these steps, you'll find that the table where you are making all calculations will correctly include the sum totals of the criterion that you selected.

SUMIFS Formula

As previously mentioned, the **SUMIFS** formula can be used to make calculations with data that includes one criterion or many. Typically, it is recommended that you learn to use the **SUMIFS** formula since this formula will allow you to do the same things that a **SUMIF** formula does plus more.

Example of the **SUMIFS** formula

=SUMIFS(D:D,B:B,G4)

The **SUMIFS** formula consists of a *minimum* of three parts in its argument:

=SUMIFS (Column to add values , Column with criteria #1 , Criteria #1)

If you have more than one criterion, then continue adding commas and the last two parts of the argument.

To use the **SUMIFS** formula:

1. Select the cell where you want to create your **SUMIFS** formula.

H	I
Area	Active Yearly Amounts
Los Angeles	
Fresno	
San Diego	
San Bernardino	
Riverside	
Orange	

2. Begin typing the formula: **=SUMIFS(**

H	I
Area	
Los Angeles	=SUMIFS(
Fresno	
San Diego	
San Bernardino	
Riverside	
Orange	

3. Select the range or column that includes the data you want Excel to add. Complete the first part of the argument by adding a comma.

	A	B	C	D	E	F	G
1	Customer Name	Area	Account Active	Membership Amount/Year		Area	
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88		Los Angeles	=SUMIFS(D:D,
3	Anthony, Rob	Los Angeles	NO	\$ 179.88		Fresno	
4	Williams, Debon	Los Angeles	YES	\$ 119.88		San Diego	
5	Hernandez, Harold	Fresno	NO	\$ 119.88		San Bernardino	
6	Ochoa, Jose	Fresno	NO	\$ 119.88		Riverside	
7	Houston, Steven	Fresno	NO	\$ 119.88		Orange	

4. Select the range or column that includes the *first* criteria that you want Excel to find. This data is typically found in a separate table. Type the comma sign after you selected the range to conclude the second part of the formula.

	A	B	C	D	E	F	G
1	Customer Name	Area	Account Active	Membership Amount/Year		Area	
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88		Los Angeles	=SUMIFS(D:D,C:C,
3	Anthony, Rob	Los Angeles	NO	\$ 179.88		Fresno	
4	Williams, Debon	Los Angeles	YES	\$ 119.88		San Diego	
5	Hernandez, Harold	Fresno	NO	\$ 119.88		San Bernardino	
6	Ochoa, Jose	Fresno	NO	\$ 119.88		Riverside	
7	Houston, Steven	Fresno	NO	\$ 119.88		Orange	

5. Select the cell that includes the *first* criteria you want Excel to find from the previous step or type the criteria directly onto the formula. Type a comma to complete part three of the formula.

	A	B	C	D	E	F	G
1	Customer Name	Area	Account Active	Membership Amount/Year		Area	
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88		Los Angeles	=SUMIFS(D:D,C:C,"YES",
3	Anthony, Rob	Los Angeles	NO	\$ 179.88		Fresno	
4	Williams, Debon	Los Angeles	YES	\$ 119.88		San Diego	
5	Hernandez, Harold	Fresno	NO	\$ 119.88		San Bernardino	
6	Ochoa, Jose	Fresno	NO	\$ 119.88		Riverside	
7	Houston, Steven	Fresno	NO	\$ 119.88		Orange	

6. If you have other criterion to include, you would have to include the criteria's column/range along with the criteria itself. In the next step of the formula, select another column for the *second* criteria followed with a comma.

	A	B	C	D	E	F	G
1	Customer Name	Area	Account Active	Membership Amount/Year		Area	
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88		Los Angeles	=SUMIFS(B:B,C:C,"YES",B:B,
3	Anthony, Rob	Los Angeles	NO	\$ 179.88		Fresno	
4	Williams, Debon	Los Angeles	YES	\$ 119.88		San Diego	
5	Hernandez, Harold	Fresno	NO	\$ 119.88		San Bernardino	
6	Ochoa, Jose	Fresno	NO	\$ 119.88		Riverside	
7	Houston, Steven	Fresno	NO	\$ 119.88		Orange	

7. If you include another criterion, add a column and criteria as a pair. Since you included the column in Step 6, you'll now have to include the criteria for that column.
8. Press the **Enter** key on your keyboard. Use the **Auto Fill Handle** to apply the formula to other rows.

	A	B	C	D	E	F	G	H
1	Customer Name	Area	Account Active	Membership Amount/Year		Area		
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88		Los Angeles	=COUNTIFS(B2:B7,YES,C2:C7,YES)	F2
3	Anthony, Rob	Los Angeles	NO	\$ 179.88		Fresno		
4	Williams, Debon	Los Angeles	YES	\$ 119.88		San Diego		
5	Hernandez, Harold	Fresno	NO	\$ 119.88		San Bernardino		
6	Ochoa, Jose	Fresno	NO	\$ 119.88		Riverside		
7	Houston, Steven	Fresno	NO	\$ 119.88		Orange		

COUNTIFS Formula

As previously mentioned, the **SUMIFS** formula is a SUM formula that allows you to include one or more conditions in the formula. The **COUNTIFS** formula is a **COUNT** formula that allows you to count cells based on certain conditions as well. The **COUNTIFS** formula has a minimum of two parts that should be used in pairs. Basically, you'll need to include a column for Excel to investigate and the criteria that Excel will have to find in that column.

Example of the **COUNTIFS** formula:

=COUNTIFS(D:D,G4,A:A,H4)

The **COUNTIFS** formula consists of a *minimum* of two parts in its argument, always used in pairs:

=COUNTIFS (Column to count #1 , Criteria #1 , Column to count #2 , Criteria #2)

To create a **COUNTIFS** formula:

1. Select the cell where you want to create your **COUNTIFS** formula.

	A	B	C	D	E	F
1	Customer Name	Area	Account Active		Area	No. of Active Accounts
2	Dominguez, Barbara	Los Angeles	YES		Los Angeles	
3	Anthony, Rob	Los Angeles	NO		Fresno	
4	Williams, Debon	Los Angeles	YES		San Diego	
5	Hernandez, Harold	Fresno	NO		San Bernardino	
6	Ochoa, Jose	Fresno	NO		Riverside	
7	Houston, Steven	Fresno	NO		Orange	

2. Begin typing the formula: **=COUNTIFS(**

E	F
Area	
Los Angeles	=COUNTIFS(
Fresno	
San Diego	
San Bernardino	
Riverside	
Orange	

3. Select the range or column of the *first criteria* that includes the data you want Excel to count. Complete the first part of the formula with a comma.

	A	B	C	D	E	F
1	Customer Name	Area	Account Active		Area	
2	Dominguez, Barbara	Los Angeles	YES		Los Angeles	=COUNTIFS(C:C,
3	Anthony, Rob	Los Angeles	NO		Fresno	
4	Williams, Debon	Los Angeles	YES		San Diego	
5	Hernandez, Harold	Fresno	NO		San Bernardino	
6	Ochoa, Jose	Fresno	NO		Riverside	
7	Houston, Steven	Fresno	NO		Orange	

4. Select the cell that includes the *first criteria* you want Excel to find from the previous step or type the criteria directly onto the formula. Type a comma to complete part two of the formula.

	A	B	C	D	E	F
1	Customer Name	Area	Account Active		Area	
2	Dominguez, Barbara	Los Angeles	YES		Los Angeles	=COUNTIFS(C:C,"YES",
3	Anthony, Rob	Los Angeles	NO		Fresno	
4	Williams, Debon	Los Angeles	YES		San Diego	
5	Hernandez, Harold	Fresno	NO		San Bernardino	
6	Ochoa, Jose	Fresno	NO		Riverside	
7	Houston, Steven	Fresno	NO		Orange	

5. If you have multiple criterion that you want to use in your formula, you'll have continue with another pair adding a column for Excel to count along with the criteria to find in that column. In this step, include the column or range followed by a comma.

	A	B	C	D	E	F
1	Customer Name	Area	Account Active		Area	
2	Dominguez, Barbara	Los Angeles	YES		Los Angeles	=COUNTIFS(C:C,"YES",B:B,
3	Anthony, Rob	Los Angeles	NO		Fresno	
4	Williams, Debon	Los Angeles	YES		San Diego	
5	Hernandez, Harold	Fresno	NO		San Bernardino	
6	Ochoa, Jose	Fresno	NO		Riverside	
7	Houston, Steven	Fresno	NO		Orange	

6. Include the criteria you want Excel to find from the previous step.

	A	B	C	D	E	F
1	Customer Name	Area	Account Active		Area	
2	Dominguez, Barbara	Los Angeles	YES		Los Angeles	=COUNTIFS(C:C,"YES",B:B,E2)
3	Anthony, Rob	Los Angeles	NO		Fresno	
4	Williams, Debon	Los Angeles	YES		San Diego	
5	Hernandez, Harold	Fresno	NO		San Bernardino	
6	Ochoa, Jose	Fresno	NO		Riverside	
7	Houston, Steven	Fresno	NO		Orange	

7. Press the **Enter** button to complete your formula and use the **Auto Fill Handle** if needed.

E	F
Area	No. of Active Accounts
Los Angeles	13
Fresno	3
San Diego	3
San Bernardino	2
Riverside	2
Orange	1

AVERAGE IFS Formula

As previously mentioned, the **SUMIFS** formula can be used to make calculations with data that includes one criterion or many. The **AVERAGEIFS** formulas also makes calculations with data with more than one criterion. The only difference is that the **AVERAGEIFS** formula calculates the average.

Example of the **AVERAGEIFS** formula:

=AVERAGEIFS(D:D,B:B,G4)

The **AVEREAGEIFS** formula consists of a *minimum* of three parts in its argument:

=AVERAGEIFS (Column to average , Column with criteria #1 , Criteria #1)

If you have more than one criterion, then continue adding commas and pair the column with the criteria.

To use the **AVERAGEIFS** formula:

1. Select the cell where you want to create your **AVERAGEIFS** formula.

F	G
Area	AVG Active Yearly Amounts
Los Angeles	
Fresno	
San Diego	
San Bernardino	
Riverside	
Orange	

2. Begin typing the formula: **=AVERAGEIFS(**

F	G
Area	
Los Angeles	=AVERAGEIFS(
Fresno	
San Diego	
San Bernardino	
Riverside	
Orange	

3. Select the range or column that includes the data you want Excel to average. Complete the first part of the argument by adding a comma.

	A	B	C	D	E	F	G
1	Customer Name	Area	Account Active	Membership Amount/Year		Area	
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88		Los Angeles	=AVERAGEIFS(D:D,
3	Anthony, Rob	Los Angeles	NO	\$ 179.88		Fresno	
4	Williams, Debon	Los Angeles	YES	\$ 119.88		San Diego	
5	Hernandez, Harold	Fresno	NO	\$ 119.88		San Bernardino	
6	Ochoa, Jose	Fresno	NO	\$ 119.88		Riverside	
7	Houston, Steven	Fresno	NO	\$ 119.88		Orange	

4. Select the range or column that includes the *first* criteria that you want Excel to find. This data is typically found in a separate table. Type the comma sign after you selected the range to conclude the second part of the formula.

	A	B	C	D	E	F	G
1	Customer Name	Area	Account Active	Membership Amount/Year		Area	
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88		Los Angeles	=AVERAGEIFS(D:D,C:C,
3	Anthony, Rob	Los Angeles	NO	\$ 179.88		Fresno	
4	Williams, Debon	Los Angeles	YES	\$ 119.88		San Diego	
5	Hernandez, Harold	Fresno	NO	\$ 119.88		San Bernardino	
6	Ochoa, Jose	Fresno	NO	\$ 119.88		Riverside	
7	Houston, Steven	Fresno	NO	\$ 119.88		Orange	

- Select the cell that includes the *first* criteria you want Excel to find from the previous step or type the criteria directly onto the formula. Type a comma to complete part three of the formula.

	A	B	C	D	E	F	G
1	Customer Name	Area	Account Active	Membership Amount/Year		Area	
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88		Los Angeles	=AVERAGEIFS(D:D,C:C,"YES",
3	Anthony, Rob	Los Angeles	NO	\$ 179.88		Fresno	
4	Williams, Debon	Los Angeles	YES	\$ 119.88		San Diego	
5	Hernandez, Harold	Fresno	NO	\$ 119.88		San Bernardino	
6	Ochoa, Jose	Fresno	NO	\$ 119.88		Riverside	
7	Houston, Steven	Fresno	NO	\$ 119.88		Orange	

- If you have other criterion to include, you would have to include the criteria's column/range along with the criteria itself. In the next step of the formula, select another column for the *second* criteria followed with a comma.

	A	B	C	D	E	F	G
1	Customer Name	Area	Account Active	Membership Amount/Year		Area	
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88		Los Angeles	=AVERAGEIFS(D:D,C:C,"YES",B:B,
3	Anthony, Rob	Los Angeles	NO	\$ 179.88		Fresno	
4	Williams, Debon	Los Angeles	YES	\$ 119.88		San Diego	
5	Hernandez, Harold	Fresno	NO	\$ 119.88		San Bernardino	
6	Ochoa, Jose	Fresno	NO	\$ 119.88		Riverside	
7	Houston, Steven	Fresno	NO	\$ 119.88		Orange	

- If you include another criterion, always include the column and criteria as a pair. Since you included the column in Step 6, you'll now have to include the criteria for that column.

	A	B	C	D	E	F	G	H
1	Customer Name	Area	Account Active	Membership Amount/Year		Area		
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88		Los Angeles	=AVERAGEIFS(D:D,C:C,"YES",B:B,"Los Angeles",	
3	Anthony, Rob	Los Angeles	NO	\$ 179.88		Fresno		
4	Williams, Debon	Los Angeles	YES	\$ 119.88		San Diego		
5	Hernandez, Harold	Fresno	NO	\$ 119.88		San Bernardino		
6	Ochoa, Jose	Fresno	NO	\$ 119.88		Riverside		
7	Houston, Steven	Fresno	NO	\$ 119.88		Orange		

- Press the **Enter** key on your keyboard. Use the **Auto Fill Handle** to apply the formula to other rows.

F	G
Area	AVG Active Yearly Amounts
Los Angeles	\$ 166.03
Fresno	\$ 119.88
San Diego	\$ 219.88
San Bernardino	\$ 149.88
Riverside	\$ 179.88
Orange	\$ 179.88

Logical Formulas

Formulas such as the **SUMIFS** and **AVERAGEIFS** help us understand how Excel uses conditions to provide the computation. In other words, we tell Excel to add numbers *if* something is found in a column. This type of thinking opens the door to the next set of formulas presented in this booklet. In this section you will learn how to use logical formulas.

Logical formulas are formulas that determine if a statement is true or false. The most common logical formula is the **IF** formula, known to create conditions to tell Excel to do something IF something is true and then do something else. **IF** formulas help users automate their tables by following a set of rules (or conditions).

IF Formula

As previously mentioned, the **IF** formula is one of the most popular logical formulas. The **IF** formula helps us create conditions that will tell Excel what to display if those conditions are met or not met.

To give a more practical example, imagine a room filled with 100 people. Let's say that we ask everyone who wears glasses to stand up. If we were to use an **IF** formula to communicate this instruction to the audience, we may say something like: *If you are wearing glasses, then stand up.* By default, those that do not wear glasses would remain sitting. Keep this example in mind as we explain how the formula is structured.

Example of an **IF** formula:

=IF(C2>10,"Yes","No")

The **IF** formula consists of a *minimum* of three parts in its argument. Let's break down the three parts.

=IF (Enter Condition, _____, _____)

The condition of a formula is technically called a *logical test*. Basically, you want to use one of the following three types of logical tests: the equal sign (=), the greater than sign (>) or the less than sign (<). Therefore, in the first part of the **IF** formula, you can include a statement that asks if a cell reference is *greater than* a number or another cell reference (i.e. C2>10).

The second part of the **IF** formula is a computation, a word, a phrase or a cell reference that you want Excel to display or compute *if* the condition is true.

=IF (Enter Condition, TRUE , _____)

The last part of the **IF** formula is a computation, word, phrase or a cell reference that you want Excel to display, or compute, *if* the condition is false. The “false” part of the argument can also be considered as the last choice, or the default choice. In our practical example, we discussed that the audience members that do not wear glasses remain sitting down. We didn’t have to tell them “if you don’t wear glasses remain sitting”. By default, the members knew that the only other option was to remain sitting.

=IF (Enter Condition, TRUE , FALSE)

How to use an IF Formula with one condition

IF formula can be used with one condition or many. Let’s first discuss how to use a simple **IF** formula that only contains a single condition.

To write an **IF** formula:

1. Select the cell where you want to include your **IF** formula.

	A	B	C
1	Name	State Exam	PASS OR DOES NOT PASS
2	Sinbad Q	80	
3	Robert F	85	
4	Helen S	90	
5	Roberta L	95	

2. Begin your formula with: =IF(

	A	B	C
1	Name	State Exam	
2	Sinbad Q	80	=IF(
3	Robert F	85	
4	Helen S	90	
5	Roberta L	95	

3. In the first part of the formula, include your condition. Remember, you’ll need to say if something is equal to, greater than or less than something else. After writing your condition, add a comma.

	A	B	C
1	Name	State Exam	
2	Sinbad Q	80	=IF(B2>85,
3	Robert F	85	
4	Helen S	90	
5	Roberta L	95	

- In the second part of the formula, include a computation, a word, phrase or cell reference you would like displayed if the condition is true. End the second part with a comma.

	A	B	C
1	Name	State Exam	
2	Sinbad Q	80	=IF(B2>85,"PASS",
3	Robert F	85	
4	Helen S	90	
5	Roberta L	95	

- In the last part of the formula, include a computation, word, phrase or cell reference you would like Excel to display if the condition is false. Type the **Enter** key on your keyboard to complete your formula.

	A	B	C
1	Name	Sta	
2	Sinbad Q		=IF(B2>85,"PASS","FAIL"
3	Robert F	85	
4	Helen S	90	
5	Roberta L	95	

The **IF** formula can be tricky so it's always a good idea to check your work to make sure you did it correctly.

	A	B	C
1	Name	State Exam	PASS OR DOES NOT PASS
2	Sinbad Q	80	FAIL
3	Robert F	85	FAIL
4	Helen S	90	PASS
5	Roberta L	95	PASS

How to use the IF Formula with more than one condition

Previously, you learned how to use the **IF** formula with a single condition. But what if you need to include additional conditions? Much of this depends on what you're trying to accomplish. Let's look at a very practical and simple example. If I have a group of 100 people in a room and I say, "if you are older than 50 years old, stand up and if you are younger than 20

years old hop on one foot.” This example actually has three options: those that are older than 50 years old, those that are younger than 20 years old and those that are in between.

Think of the **IF** formula in the same way. Here’s what an **IF** formula may look like for the first part of our example:

=IF(Person>50, stand up, FALSE)

To continue with our example, we would have to add another condition. This means that we would have to add another **IF** formula in the FALSE part of the formula because our statement would be false according to the first condition. This is what the **IF** formula would look like:

=IF(Person>50, stand up, IF(Person<20, hop on foot, FALSE))

Lastly, we have one group remaining: everyone in between. By default, this group would be the last option; the last resort. The final formula would look something like this:

=IF(Person>50, stand up, IF(Person<20, hop on foot, remain seated))

Since you are using two **IF** formulas, you will need to close the final argument with two parentheses.

Hopefully, the example made sense. Let’s see how this will work in Excel.

An Easy way to use an IF Formula with multiple conditions

In our practical example, we described using multiple conditions in Excel by adding to the FALSE part of the argument. This is probably the easiest way to create an **IF** formula with multiple conditions.

To write an **IF** formula with multiple conditions:

1. Select the cell where you want to include your **IF** formula.

D	E	F
Name	Age	Action
Robert F.	34	
Clovis D.	25	
Arthur H.	68	
Perla S.	39	

2. Begin your formula with **=IF(**

D	E	F
Name	Age	Action
Robert F.	34	=IF(
Clovis D.	25	
Arthur H.	68	
Perla S.	39	

3. Create you first condition by using an equal sign, a greater than sign or a less than sign and include a comma at the end.

	A	B	C	D	E	F
1	Age	Action		Name	Age	Action
2	50	Stand		Robert F.	34	=IF(E2>A2,
3	20-50	Sit		Clovis D.	25	
4	20	Hop		Arthur H.	68	
5				Perla S.	39	

4. In the second part of the argument, include what you would want Excel to display if the first condition is true. End the second part with a comma.

	A	B	C	D	E	F
1	Age	Action		Name	Age	Action
2	50	Stand		Robert F.	34	=IF(E2>A2,\$B\$2,
3	20-50	Sit		Clovis D.	25	
4	20	Hop		Arthur H.	68	
5				Perla S.	39	

5. Since you have other options, begin another IF statement immediately after the second part of the argument and begin the argument.

	A	B	C	D	E	F
1	Age	Action		Name	Age	Action
2	50	Stand		Robert F.	34	=IF(E2>A2,\$B\$2,IF(
3	20-50	Sit		Clovis D.	25	
4	20	Hop		Arthur H.	68	
5				Perla S.	39	

6. Inside the argument of the *second* IF statement, type your second condition (and include an equal sign, greater than sign or less than sign) and add a comma at the end.

	A	B	C	D	E	F	G
1	Age	Action		Name	Age	Action	
2	50	Stand		Robert F.	34	=IF(E2>A2,\$B\$2,IF(E2<A4,	
3	20-50	Sit		Clovis D.	25		
4	20	Hop		Arthur H.	68		
5				Perla S.	39		

7. Include a phrase, word, computation or cell reference you would want Excel to display if the second condition is true. Add a comma.

	A	B	C	D	E	F	G
1	Age	Action		Name	Age	Action	
2	50	Stand		Robert F.	34	=IF(E2>A2,\$B\$2,IF(E2<A4,\$B\$4,	
3	20-50	Sit		Clovis D.	25		
4	20	Hop		Arthur H.	68		
5				Perla S.	39		

8. For the last condition of the formula, include the default condition and close the arguments with two closed parentheses.

	A	B	C	D	E	F	G	H
1	Age	Action		Name	Age	Action		
2	50	Stand		Robert F.	34	=IF(E2>A2,\$B\$2,IF(E2<A4,\$B\$4,\$B\$3))		
3	20-50	Sit		Clovis D.	25			
4	20	Hop		Arthur H.	68			
5				Perla S.	39			

If you have more than two conditions, then you would just need to add another **IF** statement in the FALSE part of the argument and continue to add **IF** statements as you see fit.

D	E	F
Name	Age	Action
Robert F.	34	Sit
Clovis D.	25	Sit
Arthur H.	68	Stand
Perla S.	39	Stand

Remember, the *last* **IF** statement would need a FALSE part and as many closed parentheses as there are **IF** statements.

Using IF Formulas as the TRUE statement of an argument

In the previous example, we created an **IF** formula with multiple conditions. In that example, the **IF** formulas would continue in the FALSE part of the argument. However, there are instances in which you may need to add an **IF** statement for conditions that are true. Let's go back to the example of our audience with 100 people. Let's assume that we want tell the audience, "if you are over 50, raise your hand if you wear glasses". Let's break down this statement by using an argument, like we do in formulas. First of all, our **IF** formula begins with the condition: if a person is over fifty.

=IF(Person>50, TRUE, FALSE)

Next, we are saying that if that statement is true, that we want people to raise their hand *if* they wear glasses. This means that we would need to add an entire **IF** formula in the second part of the argument. It may look something like this:

=IF(Person>50, IF(Person=Glasses, Raise Hand, Don't Raise Hand), FALSE)

Our formula is now describing a statement *for the condition if it's true*. Therefore, in the TRUE **IF** formula we would need to include the three parts: condition, true statement and false statement. In our example, if a person wears glasses they will need to raise their hand. For the people not wearing glasses, they don't need to raise their hand (by default).

There is one missing piece to this formula. What about all the people who are not over 50? Well, by default, they belong in the FALSE statement of the original **IF** formula. Our complete formula would look something like this:

=IF(Person>50, IF(Person=Glasses, Raise Hand, Don't Raise Hand), Do nothing)

To create an **IF** formula like this in Excel:

1. Select the cell where you want to write your **IF** formula.

C	D	E
Name	Age	Action
Robert F.	34	
Clovis D.	25	
Arthur H.	68	
Perla S.	39	

2. Begin your **IF** formula like this: **=IF(**

C	D	E
Name	Age	Action
Robert F.	34	=IF(
Clovis D.	25	
Arthur H.	68	
Perla S.	39	

- Write your first condition. Remember, you'll need an equal sign, a greater than sign or a less than sign. End this part with a comma.

	A	B	C	D	E
1	Age		Name	Age	Action
2	50		Robert F.	34	=IF(D2>A2,
3	20-50		Clovis D.	25	
4	20		Arthur H.	68	
5			Perla S.	39	

- Begin your second **IF** formula and open the argument.

C	D	E
Name	Age	Action
Robert F.	34	=IF(D2>A2,IF(
Clovis D.	25	
Arthur H.	68	
Perla S.	39	

- Write a second condition for this **IF** formula and make sure that you include an equal sign, a greater than sign or a less than sign. Add a comma at the end.

	A	B	C	D	E	F
1	Age		Name	Age	Action	
2	50		Robert F.	34	=IF(D2>A2,IF(A2="Glasses",	
3	20-50		Clovis D.	25		
4	20		Arthur H.	68		
5			Perla S.	39		

- Next, select a cell reference or write a word, phrase or formula you want to display if this second condition is true. Add a comma at the end.

	A	B	C	D	E	F	G
1	Age		Name	Age	Action		
2	50		Robert F.	34	=IF(D2>A2,IF(A2="Glasses", "Hand Up",		
3	20-50		Clovis D.	25			
4	20		Arthur H.	68			
5			Perla S.	39			

7. Select a default cell reference, word, phrase or formula you want displayed if this second condition is false. End the *second IF* formula with a closed parenthesis *and* a comma.

	A	B	C	D	E	F	G	H
1	Age		Name	Age	Action			
2	50		Robert F.	34	=IF(D2>A2,IF(A2="Glasses","Hand Up","No Hands"),			
3	20-50		Clovis D.	25				
4	20		Arthur H.	68				
5			Perla S.	39				

8. Complete the final step of the *first IF* statement by selecting a cell reference or writing a formula, word or phrase if the *first* condition is false. End the entire argument with a closed parenthesis.

	A	B	C	D	E	F	G	H	I
1	Age		Name	Age	Action				
2	50		Robert F.	34	=IF(D2>A2,IF(A2="Glasses","Hand Up","No Hands"),"Nothing")				
3	20-50		Clovis D.	25					
4	20		Arthur H.	68					
5			Perla S.	39					

The final result should not result with an error message. Regardless, always check your work to make sure that the logic makes sense and the formula is correct.

C	D	E
Name	Age	Action
Robert F.	34	Nothing
Clovis D.	25	Nothing
Arthur H.	68	No Hands
Perla S.	39	No Hands

AND Formula

The **AND** formula works well with **IF** formulas because they provide an opportunity to include additional conditions and make a statement true *if* all conditions are true. Typically, the **AND** formula is not used on its own because it only returns the words "True" or "False". The **AND** formula has an argument that exclusively contains conditions. That means, that all parts of the **AND** formula must contain an equal sign, greater than sign or a less than sign.

Example of the **AND** formula:

=AND(C2>=10,C2<50)

The best way to think of the **AND** formula is by reading it in the following way:

C2>=10 AND C2<50

Basically, the argument is saying that both conditions have to be met: cell C2 needs to be greater than or equal to 10 *and* cell C2 is less than 50.

To create an **AND** formula:

1. Select the cell where you want to write your **AND** formula.

	A	B	C	D	E
1	More than	100	AND	less than	200
2					
3	1.	145			

2. Begin your formula with **=AND(**

	A	B	C	D	E
1	More than	100	AND	less than	200
2					
3	1.	145	=AND(		

3. Create the first condition by using an equal sign, a greater than sign or a less than sign. To add another condition, add a comma.

	A	B	C	D	E
1	More than	100	AND	less than	200
2					
3	1.	145	=AND(B3>B\$1		

4. Add a second condition in the argument and if you need to add more conditions add another comma. When you are done adding all conditions that must be true, end the argument with a closed parenthesis.

	A	B	C	D	E
1	More than	100	AND	less than	200
2					
3	1.	145	=AND(B3>B\$1,B3<E\$1)		

Remember, the **AND** formula will return a computation that will say either the word *true* or *false*.

If you don't want Excel to return either the word *true* or *false*, then you can use both the **AND** and the **IF** formula together.

	A	B	C	D	E
1	More than	100	AND	less than	200
2					
3	1.	145	TRUE		

Using the AND Formula with an IF Formula

Since using the **AND** formula by itself returns the words *true* or *false*, the **IF** formula can be used to display something else other than those words.

To use the **IF** formula and the **AND** formula together:

1. Click on the cell where you want to write your formula.

D	E	F
Name	Age	Action
Robert F.	12	
Clovis D.	25	
Arthur H.	68	
Perla S.	39	

2. Begin the **IF** formula: **=IF(**

D	E	F
Name	Age	Action
Robert F.	12	=IF(
Clovis D.	25	
Arthur H.	68	
Perla S.	39	

3. Begin the condition in the first part of the formula by adding a logical formula. In this case, begin the **AND** formula with an open argument.

D	E	F
Name	Age	Action
Robert F.	12	=IF(AND(
Clovis D.	25	
Arthur H.	68	
Perla S.	39	

- The following parts of the **AND** argument will include conditions that all have to be met. Begin by entering the first condition (which should include an equal sign, a greater than sign or a less than sign). Complete the first part with a comma.

	A	B	C	D	E	F
1	Lowest Age	Highest Age		Name	Age	Action
2	25	45		Robert F.	12	=IF(AND(E2>A2,
3				Clovis D.	25	
4				Arthur H.	68	
5				Perla S.	39	

- Include a second part of the argument (if necessary) and any additional conditions (followed with commas). Once you include all conditions, close the argument and include a comma to continue with the **IF** formula.

	A	B	C	D	E	F
1	Lowest Age	Highest Age		Name	Age	Action
2	25	45		Robert F.	12	=IF(AND(E2>A2,E2<B2),
3				Clovis D.	25	
4				Arthur H.	68	
5				Perla S.	39	

- Add a computation, a word, cell reference or phrase to display if the **AND** formula is true. Include a comma at the end.

	A	B	C	D	E	F	G	H	I
1	Lowest Age	Highest Age		Name	Age	Action			
2	25	45		Robert F.	12	=IF(AND(E2>A2,E2<B2),"Meets Requirements"			
3				Clovis D.	25				
4				Arthur H.	68				
5				Perla S.	39				

- Add the a computation, word, cell reference or phrase to display if the **AND** formula is false. Close the argument with a closed paranthesis.

	A	B	C	D	E	F	G	H	I
1	Lowest Age	Highest Age		Name	Age	Action			
2	25	45		Robert F.	12	=IF(AND(E2>A2,E2<B2),"Meets Requirements","N/A")			
3				Clovis D.	25				
4				Arthur H.	68				
5				Perla S.	39				

Check your formula for any errors and spot check your data.

D	E	F
Name	Age	Action
Robert F.	12	N/A
Clovis D.	25	N/A
Arthur H.	68	N/A
Perla S.	39	Meets Requirements

OR Formula

The **OR** formula also works well with **IF** formulas because the **OR** formula provides an opportunity to include additional conditions and make a statement true *if* any of the conditions are met. Typically, the **AND** and **OR** formula are not used on their own because these two formulas only return the words “True” or “False”. The **OR** formula has an argument that exclusively contains conditions. That means, that all parts of the **OR** formula must contain an equal sign, greater than sign or a less than sign.

Example of the **OR** formula:

=OR(C2>=10,C2<50)

The best way to think of the **OR** formula is by reading it in the following way:

C2>=10 OR C2<50

Basically, the argument is saying that any conditions has to be met: cell C2 is greater than or equal to 10 *or* cell C2 is less than 50.

To create an **OR** formula:

1. Select the cell where you want to write your **OR** formula.

	A	B	C	D	E
1	More than	100	OR	less than	200
2					
3	1.	145			

2. Start by typing you **OR** formula: **=OR(**

	A	B	C	D	E
1	More than	100	OR	less than	200
2					
3	1.	145	=OR(		

3. Type your first condition and complete the first part with a comma.

	A	B	C	D	E
1	More than	100	OR	less than	200
2					
3	1.	145	=OR(B3>B1,		

4. Add a second condition in the argument and if you need to add more conditions add another comma. When you are done adding all conditions, end the argument with a closed parenthesis.

	A	B	C	D	E
1	More than	100	OR	less than	200
2					
3	1.	145	=OR(B3>B1,B3<E1)		

As mentioned previously, the **OR** formula will only return the words “True” or “False”, letting you know that any condition was met. Next, we’ll take a look at how the **OR** formula and the **IF** formula can be used together.

	A	B	C	D	E
1	More than	100	OR	less than	200
2					
3	1.	145	TRUE		

Using the OR Formula with an IF Formula

Since using the **OR** formula on its own returns the words *true* or *false*, the **IF** formula can be used to display something else other than those two words.

To use the **IF** formula and the **OR** formula together:

1. Click on the cell where you want to write your formula.

D	E	F
Name	Age	Action
Robert F.	12	
Clovis D.	25	
Arthur H.	68	
Perla S.	39	

2. Begin the **IF** formula: =IF(

D	E	F
Name	Age	Action
Robert F.	12	=IF(
Clovis D.	25	
Arthur H.	68	
Perla S.	39	

- Begin the condition in the first part of the formula by adding a logical formula. In this case, begin the **OR** formula with an open argument.

	A	B	C	D	E	F
1	Lowest Age	Highest Age		Name	Age	Action
2	25	45		Robert F.	12	=IF(OR(
3				Clovis D.	25	
4				Arthur H.	68	
5				Perla S.	39	

- The following parts of the **OR** argument will include conditions. Keep in mind that using the **OR** formula will allow any of the conditions in the argument to be met. Begin by entering the first condition (which should include an equal sign, a greater than sign or a less than sign). Complete the first part with a comma.

	A	B	C	D	E	F
1	Lowest Age	Highest Age		Name	Age	Action
2	25	45		Robert F.	12	=IF(OR(E2>\$A\$2,
3				Clovis D.	25	
4				Arthur H.	68	
5				Perla S.	39	

- Include a second part of the argument (if necessary) and any additional conditions (followed with commas). Once you include all conditions, close the argument and include a comma to continue with the **IF** formula.

	A	B	C	D	E	F	G	H	I
1	Lowest Age	Highest Age		Name	Age	Action			
2	25	45		Robert F.	12	=IF(OR(E2>\$A\$2,E2<\$B\$2),"Meets Age",			
3				Clovis D.	25				
4				Arthur H.	68				
5				Perla S.	39				

- Add a computation, a word, cell reference or phrase to display if the **OR** formula is true. Include a comma at the end.

	A	B	C	D	E	F	G
1	Lowest Age	Highest Age		Name	Age	Action	
2	25	45		Robert F.	12	=IF(OR(E2>\$A\$2,E2<\$B\$2),	
3				Clovis D.	25		
4				Arthur H.	68		
5				Perla S.	39		

7. Add the a computation, word, cell reference or phrase to display if the **OR** formula is false. Close the argument with a closed paranthesis.

	A	B	C	D	E	F	G	H
1	Lowest Age	Highest Age		Name	Age	Action		
2	25	45		Robert F.	12	=IF(OR(E2>\$A\$2,E2<\$B\$2),	"Meets Age"	
3				Clovis D.	25			
4				Arthur H.	68			
5				Perla S.	39			

Check your formula for any errors and spot check your data.

	A	B	C	D	E	F
1	Lowest Age	Highest Age		Name	Age	Action
2	25	45		Robert F.	12	Meets Age
3				Clovis D.	25	Meets Age
4				Arthur H.	68	Meets Age
5				Perla S.	39	Meets Age

More Advanced Functions in Excel

The following functions are advanced techniques to accomplish certain tasks in Excel. These functions range from setting up an easier process for your formulas, correcting formulas and accessing information in a more efficient manner.

Name Ranges

Many times, you'll need to toggle back and forth between spreadsheets to complete a formula. Using **Name Ranges** may drastically assist with this process. **Name Ranges** allow you to title, or name, a column, table, area, location or range. This way, if you are writing a formula and plan to use a table or column from another spreadsheet, you can easily enter the name of the table or column without the need of toggling back and forth.

How to Apply Name Ranges

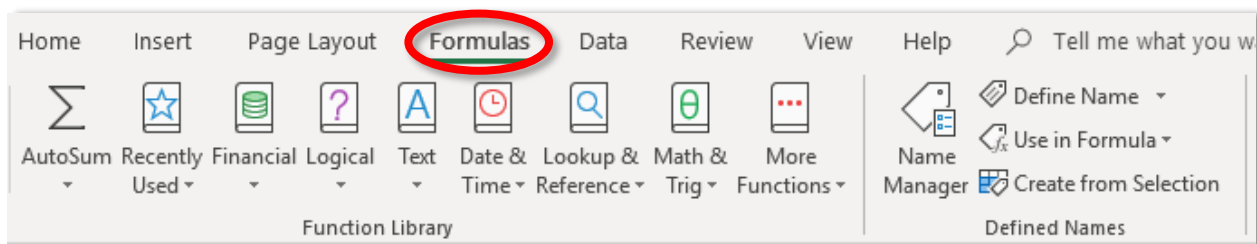
Naming a table or a column is relatively easy. Remember, when done correctly, this step will facilitate the process of completing a formula that requires you to go back and forth between spreadsheets.

To create a **Name Range**:

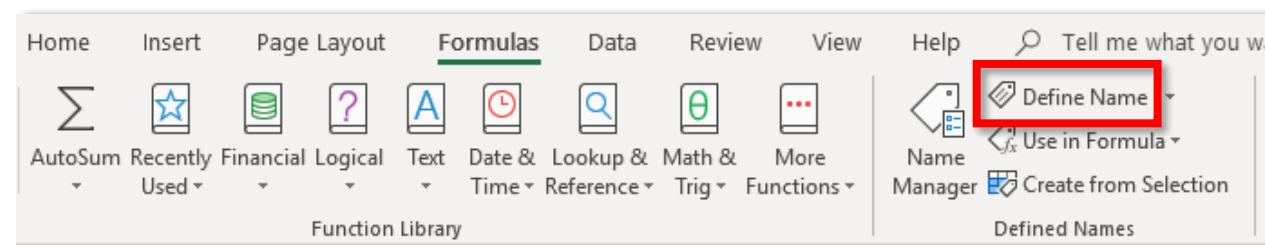
1. Select a column, table, area or cells that you would like to name.

	A	B	C	D
1	Customer Name	Area	Account Active	Membership Amount/Year
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88
3	Anthony, Rob	Los Angeles	NO	\$ 179.88
4	Williams, Debon	Los Angeles	YES	\$ 119.88
5	Hernandez, Harold	Fresno	NO	\$ 119.88

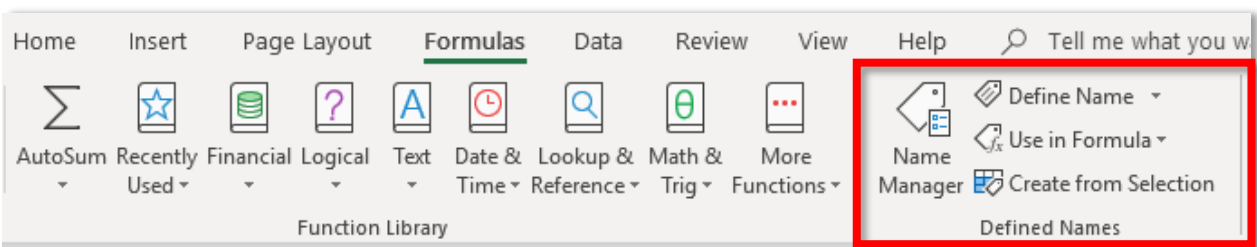
2. Navigate to the **Formulas** tab.



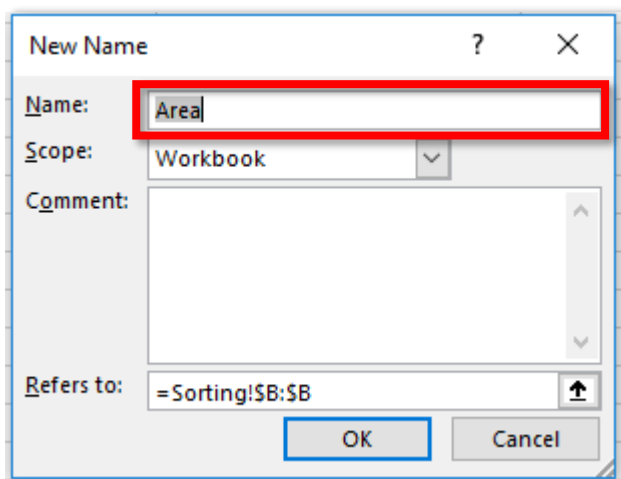
3. Locate the **Defined Names** group.



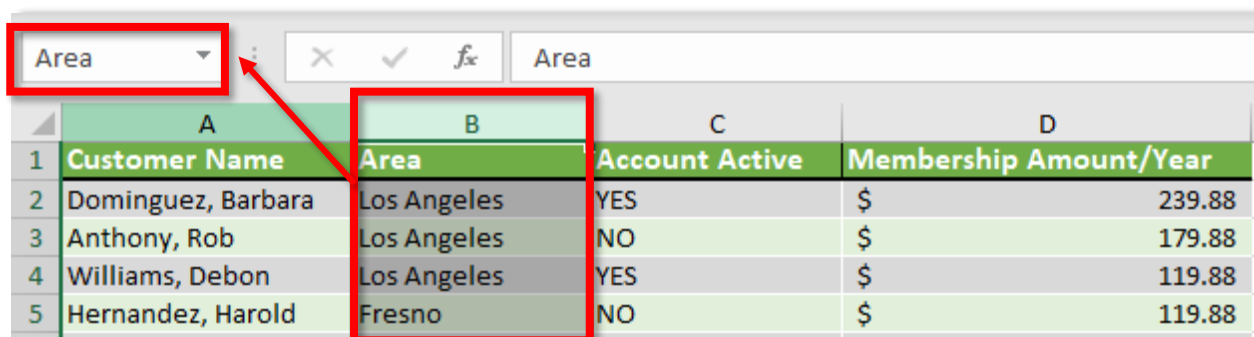
4. Select the command called **Define Name**.



- After selecting the **Define Name** command, Excel will display a window. Name the range in the *Name* box. Pick a name you can easily remember and one that will not interfere with other ranges you have named. Select the **OK** button when done.



You'll know that you successfully named your range when you select the newly named range and the name of your range appears in the **Name Box**.



The Excel spreadsheet shows a table with 5 rows and 4 columns. The 'Name Box' at the top left shows 'Area' with a red box around it. A red arrow points from the 'Area' name in the 'Name Box' to the 'Area' column header in the table. The table data is as follows:

	A	B	C	D
1	Customer Name	Area	Account Active	Membership Amount/Year
2	Dominguez, Barbara	Los Angeles	YES	\$ 239.88
3	Anthony, Rob	Los Angeles	NO	\$ 179.88
4	Williams, Debon	Los Angeles	YES	\$ 119.88
5	Hernandez, Harold	Fresno	NO	\$ 119.88

How to quickly name and access your tables

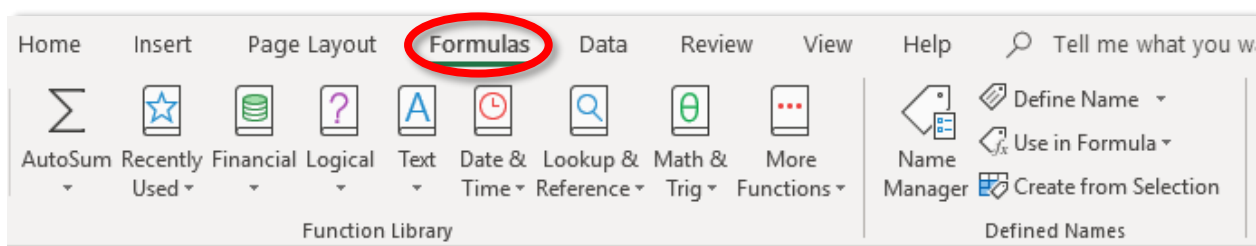
You can quickly and easily name your tables as well. Naming your tables allows you to quickly identify them when you're including a range in a formula or to toggle back and forth between spreadsheets. Let's discuss how you can name a table and access it quickly by naming it.

To name a table:

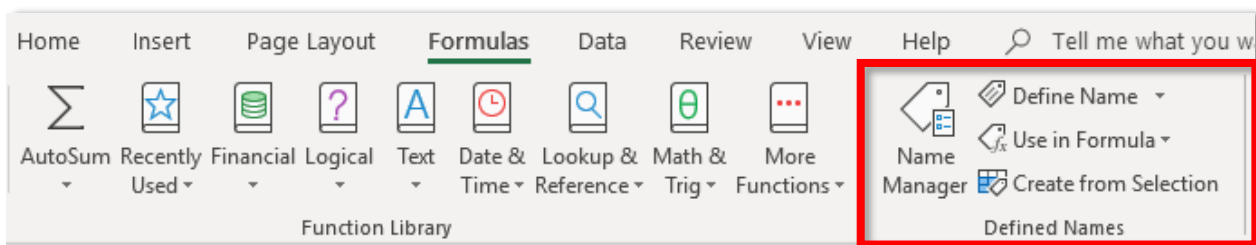
1. Select the entire range of your table.

	A	B	C	D	E	F
1	Count	Account ID	Account Name	Account Manager	Location	
2	1	11368	Bright Minds Non-Profit	Sebastian D.	CA	
3	2	11457	JFK Online College	Claudia R.	CA	
4	3	11498	Rock Learning Centers	Maria G.	IL	
5	4	11500	ITT Technical Institute - Palm Springs	Matthew J.	IL	
6	5	11459	Los Angeles USD	Horacio M.	CA	
7	6	11458	Jupiter International	Francisco Y.	CA	
8	7	11474	Educacion Escolar Para Ninos, SA de CV	William W.	IL	
9	8	11487	Cloud Works, Inc.	George K.	CA	
10	9	11488	STEM Worldwide Academy	Isaac K.	CA	
11	10	11465	Institution of Math CRL	Debra S.	CA	
12						

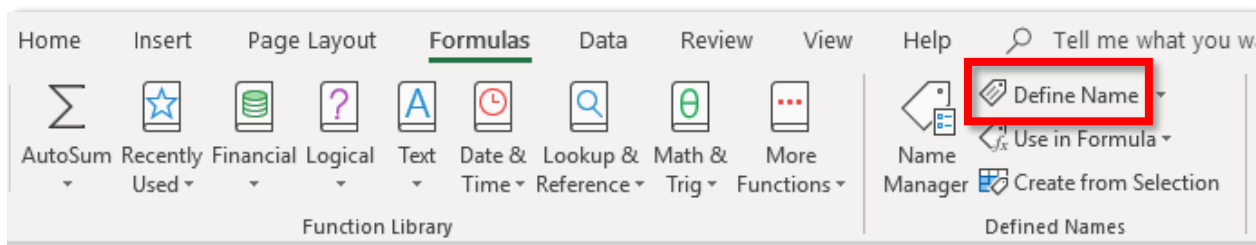
2. Access the **Formulas** tab.



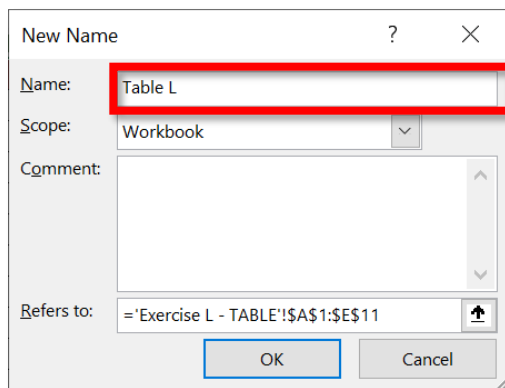
3. Find the **Defined Names** group.



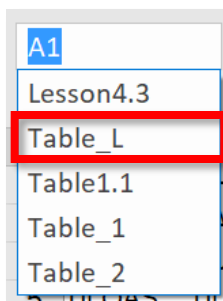
4. In the **Defined Names** group, select the **Define Name** command.



5. In the pop-up window, name the table in the *Name* box. Be careful because Excel will not accept space characters. Therefore, you'll need to include dashes or underscores to name your tables. No spaces. Click the **OK** button.



6. Moving forward, when you need to locate the table you just named, you can use the **Name Box** and find your table from the dropdown menu.

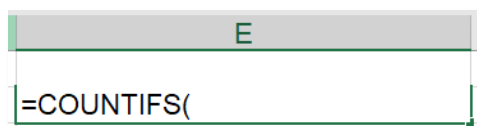


How to use Name Ranges in your formulas

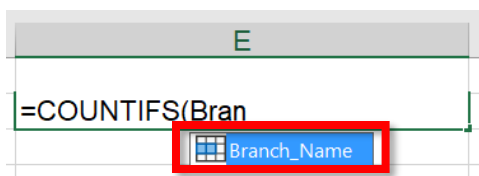
The best part about naming your ranges or tables is that you can use the name ranges in a formula. If a formula asks you for a range, a table array or a lookup array, you can use the name of the table or column instead of having to select the range.

To use name ranges in your formulas:

1. First, make sure that your tables or columns have been named.
2. Begin your formula.

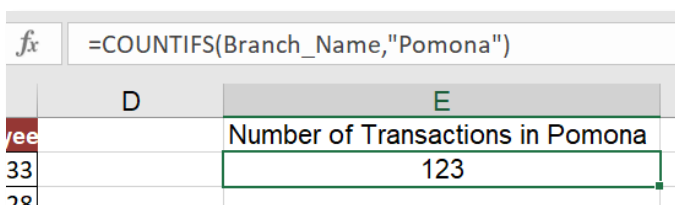


- If the formula requires you to select a range (such as a column or area), type the name of the table or column instead. This will prompt Excel to display a short menu of



options that should include the ranges or tables that you named. Select the name range.

- Complete the formula and you will find that you just saved some time and energy by avoiding having to select a range or (in some cases) going back and forth between spreadsheets.



Auditing Formulas

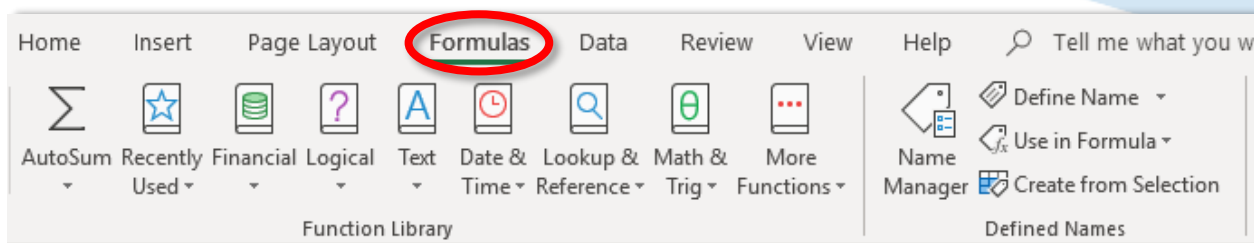
Excel understands that we may sometimes work with tons of data in spreadsheets and that mistakes can happen. The **Formula Auditing** group helps users check for errors, trace cell references and display the formula for analysis. This helps users quickly identify any problems with the formulas or with the calculations. In this section, we'll explore the different ways that Excel allows us to audit formulas.

The Show Formulas Command

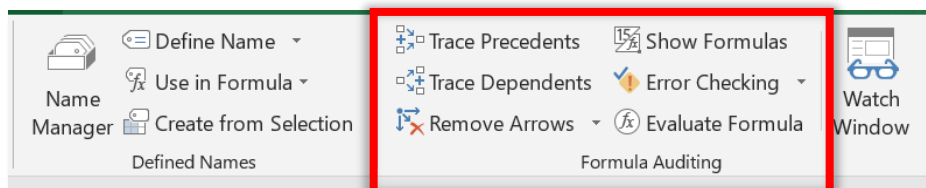
As you know, when we create formulas, the cell will display the computation and the formula bar will include the formula itself. There may be instances in which you have a table with tons of formulas, but maybe one of those formulas seems to be incorrect. In this case, the **Show Formulas** command in the **Formula Auditing** group, allows you to display all formulas in their respective cells within your spreadsheet.

To use the **Show Formulas** command:

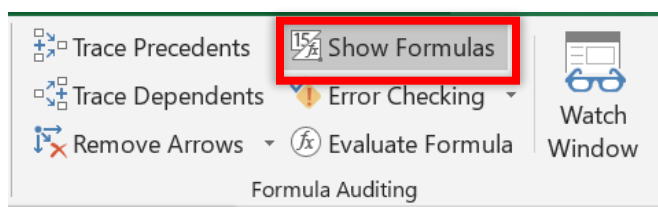
1. Navigate to the **Formulas** tab.



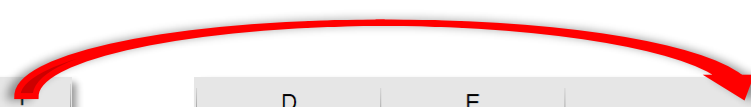
2. Locate the **Formula Auditing** group.



3. Click on the **Show Formulas** command.



Selecting the **Show Formulas** command will display all formulas in the cells. Below is a comparison of what a table may look before and after selecting the **Show Formulas** command.



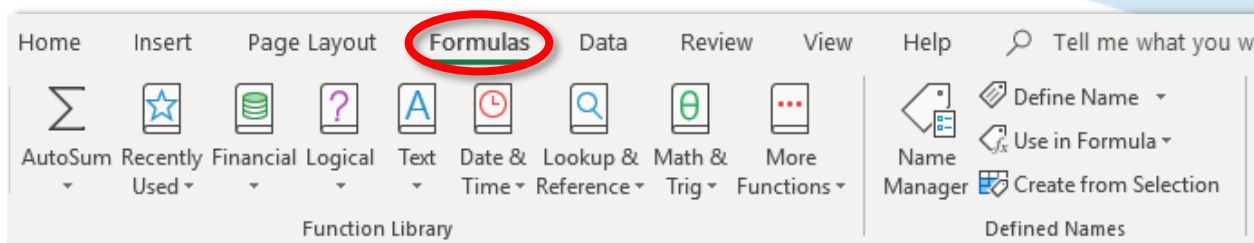
D	E		D	E	F
Account	User ID	Account	Account ID	User ID	Account Name
11368	10145	Bright	11368	10145	=VLOOKUP(\$D2,'Exercise L - TABLE'!B:C,2,FALSE)
11368	10081	Bright	11368	10081	=VLOOKUP(\$D3,'Exercise L - TABLE'!B:C,2,FALSE)
11368	10107	Bright	11368	10107	=VLOOKUP(\$D4,'Exercise L - TABLE'!B:C,2,FALSE)
11368	10709	Bright	11368	10709	=VLOOKUP(\$D5,'Exercise L - TABLE'!B:C,2,FALSE)
11368	10216	Bright	11368	10216	=VLOOKUP(\$D6,'Exercise L - TABLE'!B:C,2,FALSE)
11368	10097	Bright	11368	10097	=VLOOKUP(\$D7,'Exercise L - TABLE'!B:C,2,FALSE)
11368	10135	Bright	11368	10135	=VLOOKUP(\$D8,'Exercise L - TABLE'!B:C,2,FALSE)
11368	10464	Bright	11368	10464	=VLOOKUP(\$D9,'Exercise L - TABLE'!B:C,2,FALSE)

How to remove the Show Formulas function

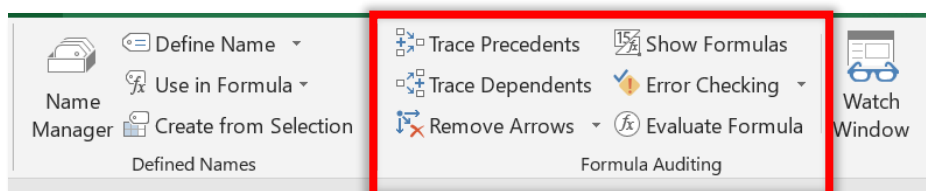
Follow these easy steps to no longer use the **Show Formulas** option in Excel.

To discontinue the use of the **Show Formulas** command:

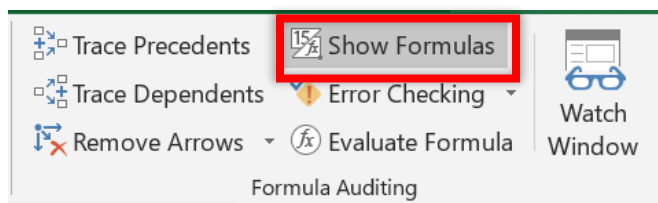
1. Navigate to the **Formulas** tab.



2. Locate the **Formula Auditing** group.



3. Deselect the **Show Formulas** command.



Introduction to Error Checking

Typically, when you create a formula and there is an issue, Excel will display a dialog box telling you that there is an error message with the formula. Additionally, if the formula worked well, it may return an error message such as #N/A or #NAME?. In these cases, you can quickly go back and fix the formulas.

There is an additional step that will help you check for errors in formulas in Excel, in case you need it. Excel allows users to use the **Error Checking...** command to check for particular errors. The most commonly used commands to check for errors are the following:

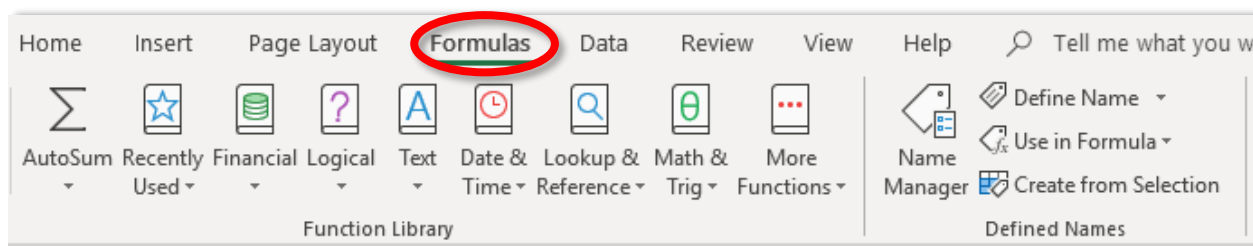
Error Checking

If your spreadsheet contains any errors, this command will display the *Error Checking* pop-up window, allowing you check errors one-by-one. The reason why you would want to

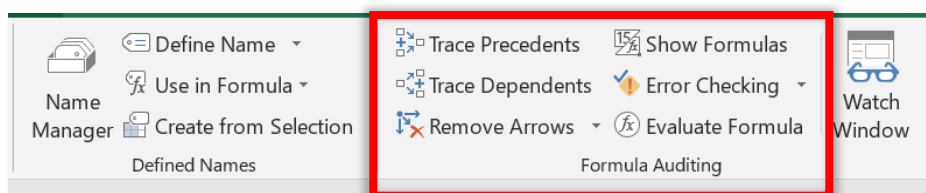
use this feature is because you get tons of information on why the error occurred in the first place and have different options to correct (or ignore) this error message.

To use **Error Checking**:

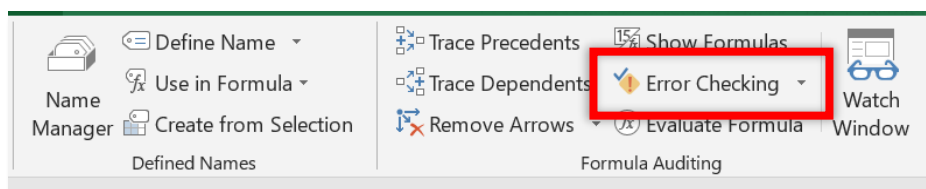
1. Navigate to the **Formulas Tab**.



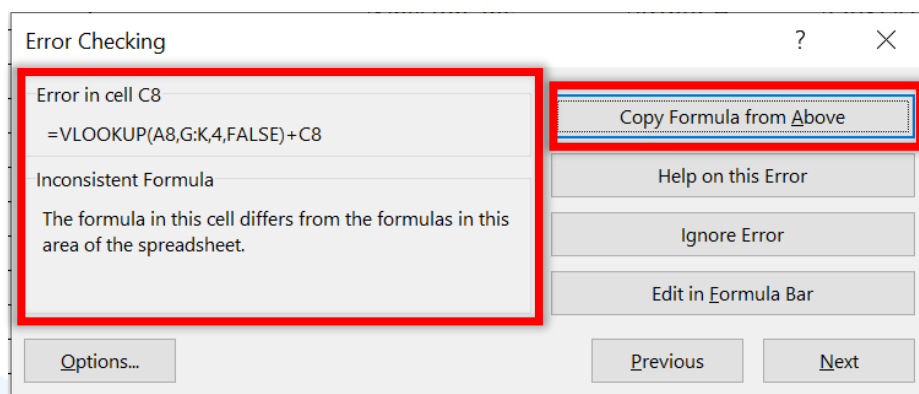
2. Locate the **Formula Auditing** group.



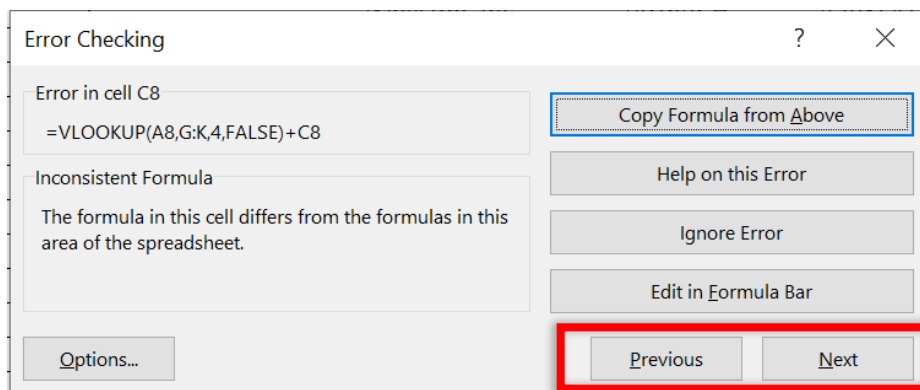
3. Click on the **Error Checking** command.



4. A window will display next with a few options. On the left side, you'll see the formula containing the error and below that you will find the reason for the error message. If the error is an inconsistent formula, then you can easily just use the *Copy Formula from Above* button to update the formula with the formula used in the cell above.

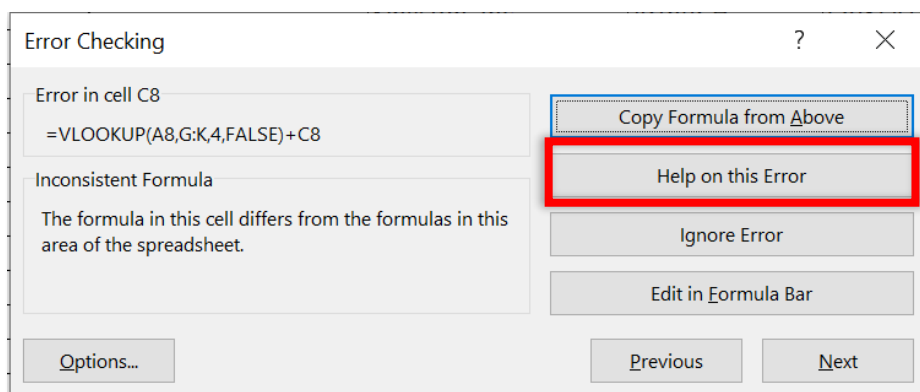


- To continue to edit errors, use the *Previous* and *Next* buttons in the pop-up window.

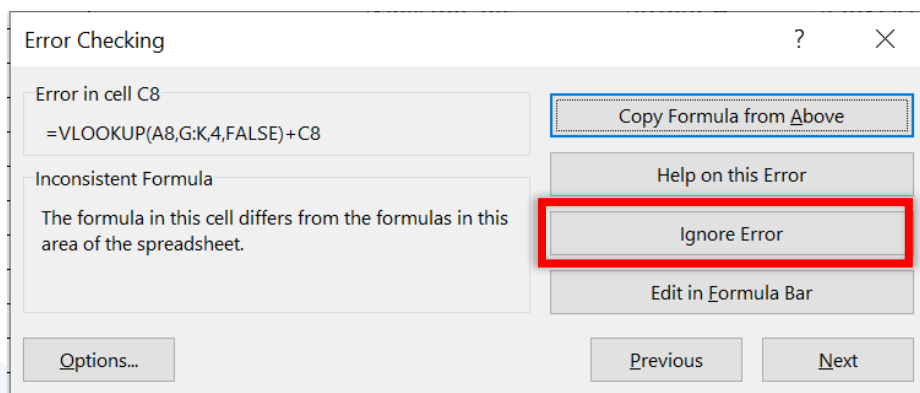


There are a few more options you can use when checking for errors. In the dialog box, there are three more options for you to choose from besides *Copy Formula from Above*:

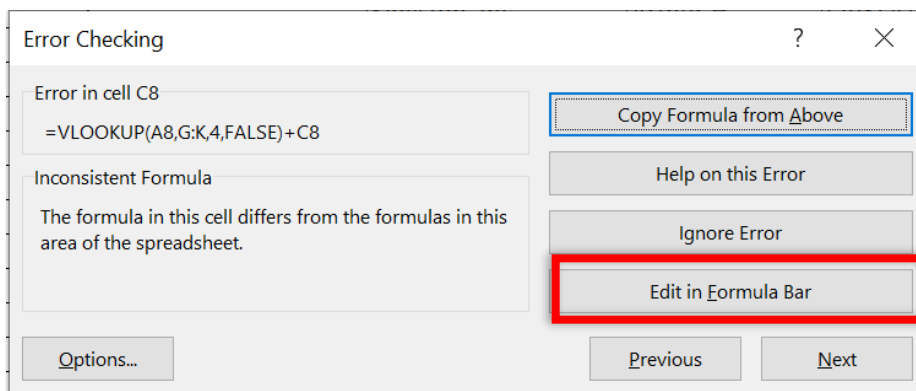
- **Help on this Error:** Use this option to get additional information about your error by visiting Microsoft's website and receive a more detailed comment about the error message you are encountering.



- **Ignore Error:** Use the *Ignore Error* option to disregard the errors in your formula and ensure that Excel doesn't flag the error message anymore.



- **Edit In Formula Bar:** Use this option to go back to the formula bar and manually make edits to your formula.



Trace Error

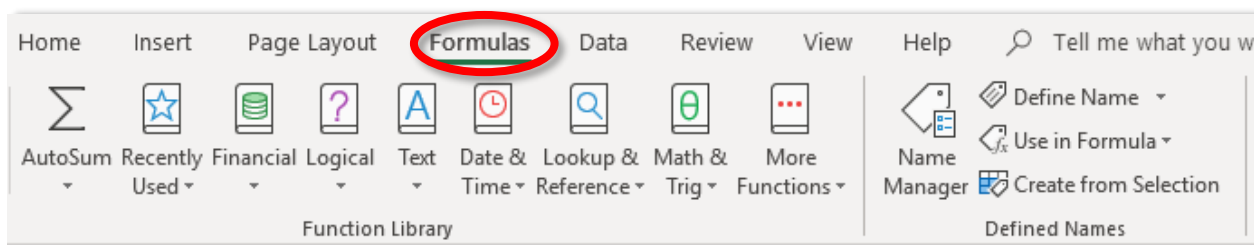
If Excel does, indeed, find errors with your functions, you can use the *Trace Error* command and use arrows that trace back to cells with error values. Remember, this means that this feature will only work if your formula returns an error value such as #N/A or #NAME?

To use the **Trace Error** feature:

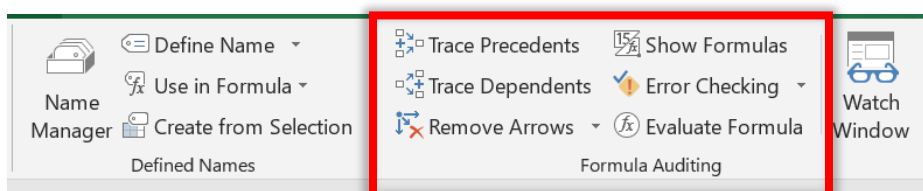
1. Select the cell that displays an error message.

7	Robert Lewis Law	2	\$60.00
8	Drew S. Wilson, MD	3	#N/A
9	Drew S. Wilson, MD	7	\$55.00

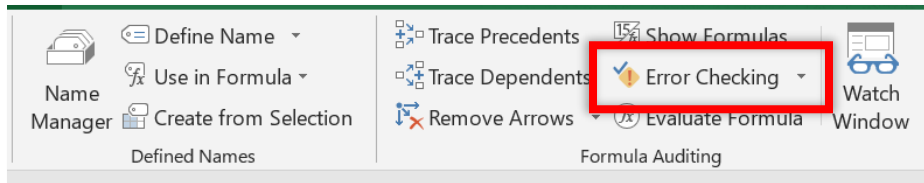
2. Navigate to the **Formulas** Tab.



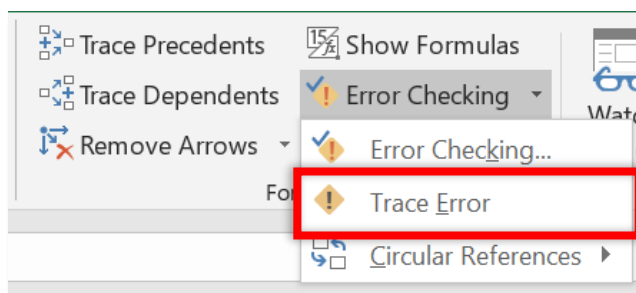
3. Locate the **Formula Auditing** group.



4. Select the **Error Checking** command to display a dropdown menu.



5. From the dropdown menu select the **Trace Error** option.



6. Excel will display blue arrows that point from the beginning cell references in your formula to other tables and cell references that you use. This is a helpful, visual way to find out what you're calculating. Now, you can fix your formula errors so that the *Trace Error* function goes away.

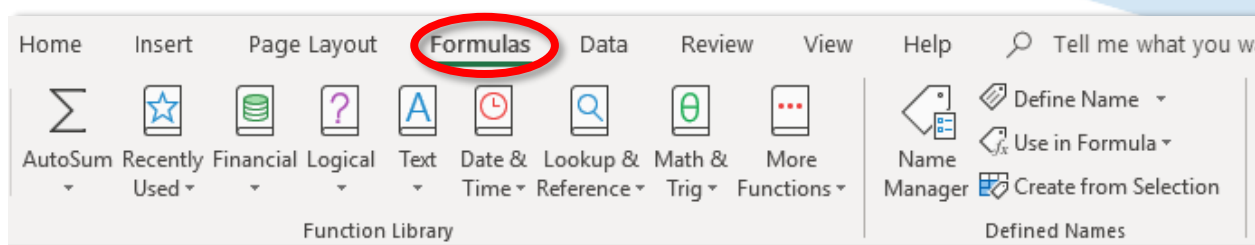
C8 =VLOOKUP(B8,G:K,4,FALSE)										
Account Name	Hours of Service	Hourly Charge	Amount to Invoice			Account Name	Account Contact	Phone Number	Hourly Charge	Contract Ter
Robert Lewis Law	10	\$60.00				Robert Lewis Law	Robert F.	(180) 510-1635	\$60.00	6 mo
Robert Lewis Law	8	\$60.00				Drew S. Wilson, MD	Clovis D.	(280) 225-3640	\$55.00	2 mo
Drew S. Wilson, MD	9	\$55.00				Kingston, Inc.	Arthur H.	(298) 414-9122	\$65.00	15 mo
Robert Lewis Law	2	\$60.00				Sacred Stone LLC	Perla S.	(161) 354-8602	\$70.00	15 mo
Robert Lewis Law	1	\$60.00				A++ Education Center	Jocelyn W.	(283) 610-2399	\$50.00	12 mo
Robert Lewis Law	2	\$60.00				Stonewall, LLC	Rebecca F.	(259) 896-3725	\$55.00	6 mo
Drew S. Wilson, MD	3	#N/A				Pomona USD	Herbert H.	(144) 178-9150	\$58.00	12 mo
Drew S. Wilson, MD	7	\$55.00				Young Enterprises	Jason K.	(227) 200-9757	\$66.00	18 mo
Robert Lewis Law	5	\$60.00								
Robert Lewis Law	3									

Circular References

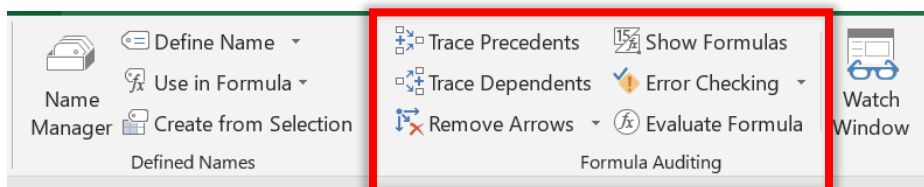
Circular references occur when formulas are created with cells that trace back to itself in one way or another. They are basically a formula that depends on this own value. Excel typically provides a notice when circular references occur but will not automatically correct the circular references. Sometimes these circular references appear because there was a mistake on your end, but they are easy to identify when using the *Error Checking* Command.

To identify and correct a **Circular Reference**:

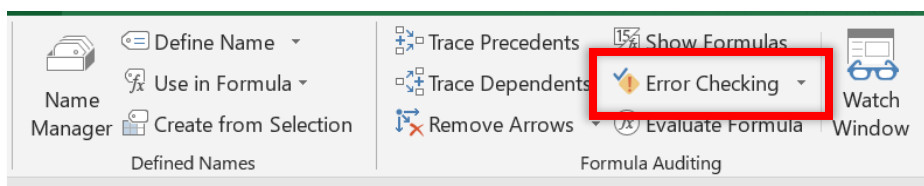
1. Navigate to the **Formulas** Tab.



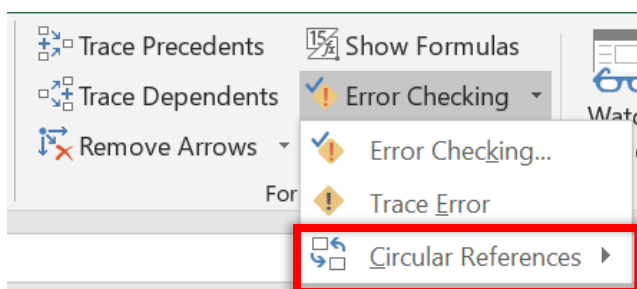
2. Locate the **Formula Auditing** group.



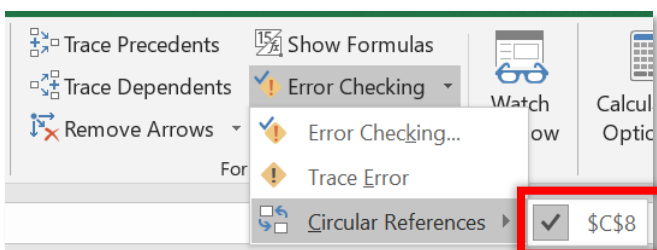
3. Select the **Error Checking** command to display a dropdown menu.



4. From the dropdown menu select the **Circular References** option.



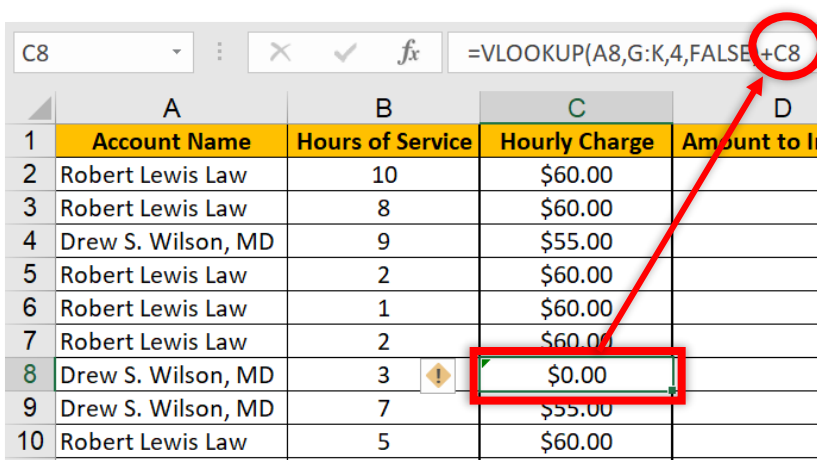
5. The **Circular References** option will only appear if Excel has detected a circular reference. This option will display a submenu with the cell location where the circular reference occurs. Select the cell.



6. Check for any circular reference mistakes. The best way to do this is by checking to see if you included the same cell in the formula (i.e. you created a formula in cell C8 but for some reason you are doing a computation by adding C8). Remove the circular reference.

Trace Dependents

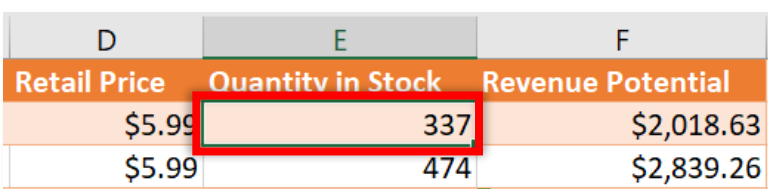
The **Trace Dependents** option of the **Formula Auditing Group** is helpful to determine which cells have formulas that depend on the cell you selected. Therefore, it traces the cell reference to any cell that contains a formula where that cell reference is needed. The **Trace Dependents** option traces cell references by adding blue arrows.



	A	B	C	D
1	Account Name	Hours of Service	Hourly Charge	Amount to Invoice
2	Robert Lewis Law	10	\$60.00	
3	Robert Lewis Law	8	\$60.00	
4	Drew S. Wilson, MD	9	\$55.00	
5	Robert Lewis Law	2	\$60.00	
6	Robert Lewis Law	1	\$60.00	
7	Robert Lewis Law	2	\$60.00	
8	Drew S. Wilson, MD	3	\$0.00	
9	Drew S. Wilson, MD	7	\$55.00	
10	Robert Lewis Law	5	\$60.00	

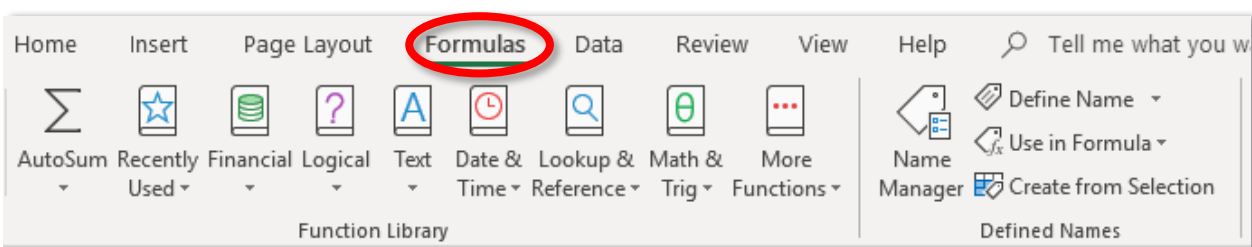
To use the **Trace Dependents** option:

1. Select the cell that you believe is used in a formula.

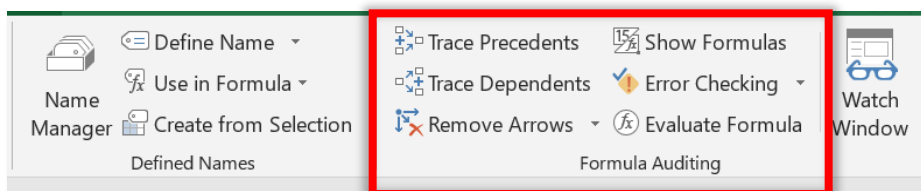


D	E	F
Retail Price	Quantity in Stock	Revenue Potential
\$5.99	337	\$2,018.63
\$5.99	474	\$2,839.26

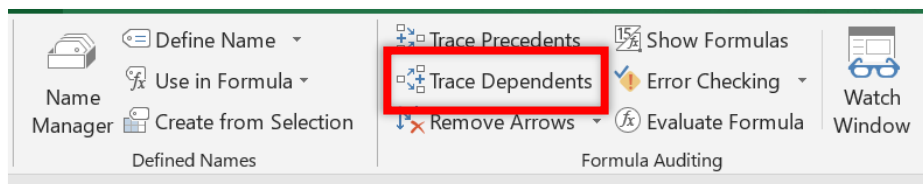
2. Navigate to the **Formulas** tab.



3. Locate the **Formula Auditing** group.



4. Select the **Trace Dependents** command.



Selecting the **Trace Dependents** command will add a blue arrow from the cell reference you selected in step one to the cell that uses the cell reference in its formula.

D	E	F
Retail Price	Quantity in Stock	Revenue Potential
\$5.99	337	\$2,018.63
\$5.99	474	\$2,839.26

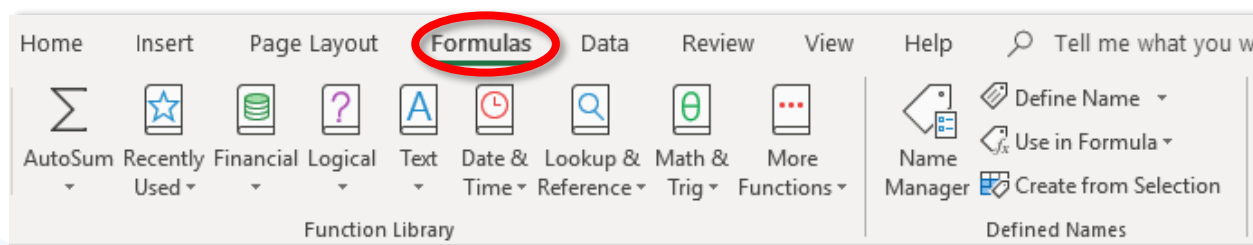
Trace Precedents

The **Trace Precedents** command allows you to click on a cell with a formula and traces all the cells references used in the formula. This command is helpful when trying to understand what kind of calculations are being made and you need to track the cell references to make any corrections or edits.

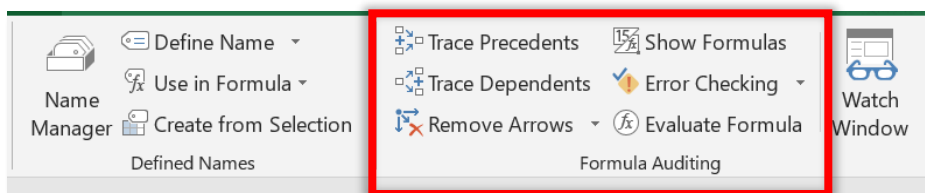
1. Select the cell that you believe is used in a formula.

D	E	F
Retail Price	Quantity in Stock	Revenue Potential
\$5.99	337	\$2,018.63
\$5.99	474	\$2,839.26

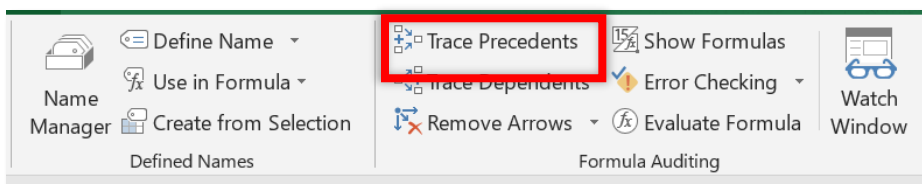
2. Navigate to the **Formulas** tab.



3. Locate the **Formula Auditing** group.



4. Select the **Trace Precedents** command.



Using the **Trace Precedents** command will add arrows to your cell references, allowing you to track the cells included in your formula.

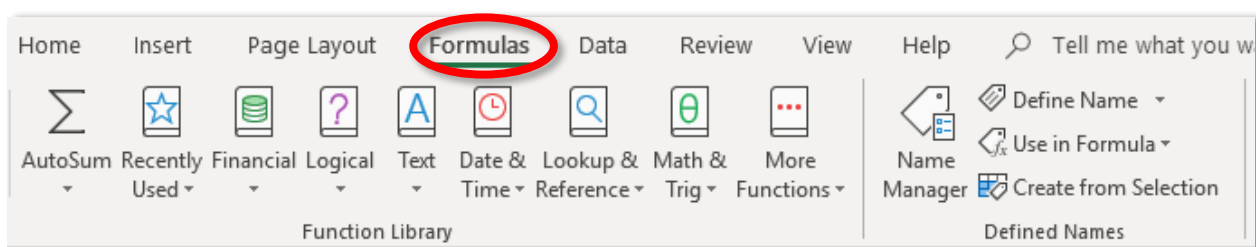
D	E	F
Retail Price	Quantity in Stock	Revenue Potential
\$5.99	337	\$2,018.63
\$5.99	474	\$2,839.26

How to remove Arrows

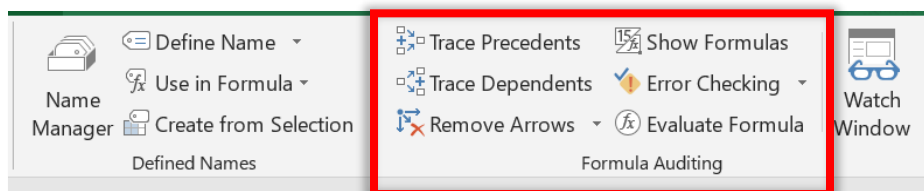
When using some of the commands in the **Formula Auditing** group, you'll notice that blue arrows will be displayed to trace or track your cell references. Although the blue arrows help you quickly and easily identify the sources of your data, they don't go away by themselves.

To remove the blue arrows from your spreadsheet:

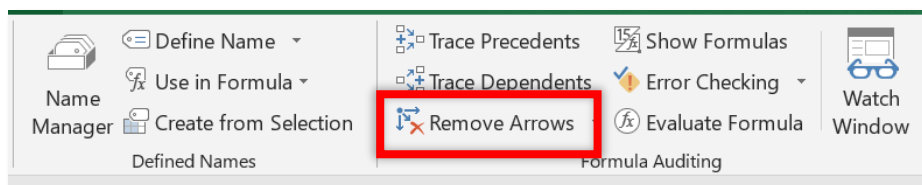
1. Navigate to the **Formulas** tab.



2. Locate the **Formula Auditing** group.



3. Select the **Remove Arrows** command.



Lookup Formulas

Lookup formulas allow you to transfer information from one table to another. Lookup formulas use an important detail from one table and use that detail to *lookup* information in another table to transfer over. There are a few lookup formulas that are typically used in Excel. Those are the ones we will be exploring next.

VLOOKUP Formula

A **VLOOKUP** is a good formula to use when you want to transfer data from one table to the other that is typically organized in the same manner. To use the **VLOOKUP** formula, you need to ensure that each table has one key element that is the same. This key element is a unique identifier such as an ID, a SKU number, a reference number, a name, a social security number or anything that is distinctive of the entry.

Example of the **VLOOKUP** formula:

=VLOOKUP(A2,F:M,8,FALSE)

The **VLOOKUP** formula consists of four parts in the argument:

=VLOOKUP (Unique Identifier, Range, Number of Columns, False entry)

Let's explore each part of the argument in detail. First, the argument needs a unique identifier in both tables. When creating the formula, make sure to select the unique identifier of table #1.

=VLOOKUP (Unique Identifier, _____, _____, _____)

Next, move over to table #2 and select the range that includes the unique identifier *and* the data you want to transfer. You'll need to make sure that the first column of the range is the unique identifier in table #2.

=VLOOKUP (Unique Identifier, Range starting with Unique Identifier, _____, _____)

In the third part of the argument, enter a number. This number will correspond with the number of columns that set apart the unique identifier from the data you want transferred. Therefore, if there are 8 columns from the unique identifier to the column that includes the data that you want transferred, then enter the number eight.

=VLOOKUP (Unique Identifier, Range, Number of Columns, _____)

The last part of the argument is a true or false statement, but not the TRUE or FALSE statements typically used in Logic formulas. In a VLOOKUP, the word TRUE means *approximate match* and the word FALSE means *exact match*. Most of the time, you would most likely include the word FALSE.

=VLOOKUP (Unique Identifier, Range, Number of Columns, FALSE)

To write a **VLOOKUP**:

1. Select a cell to write your **VLOOKUP**.

	A	B	C
1	Account Name	Hours of Service	Hourly Charge
2	Robert Lewis Law	10	
3	Robert Lewis Law	8	
4	Drew S. Wilson, MD	9	

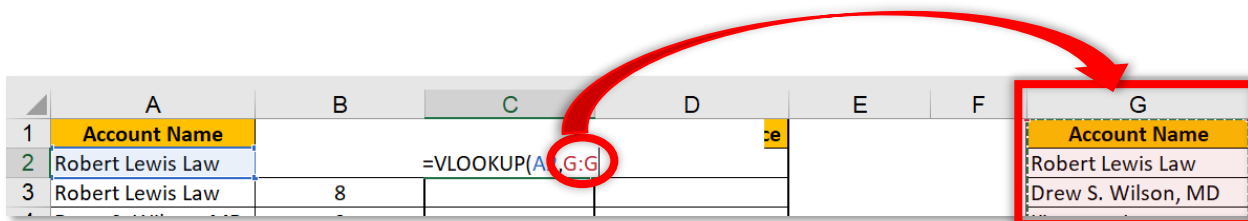
2. Begin writing the **VLOOKUP** in this way: =VLOOKUP(

	A	B	C
1	Account Name	Hours of Service	
2	Robert Lewis Law	10	=VLOOKUP(
3	Robert Lewis Law	8	
4	Drew S. Wilson, MD	9	

3. Select the unique identifier. Add a comma at the end.

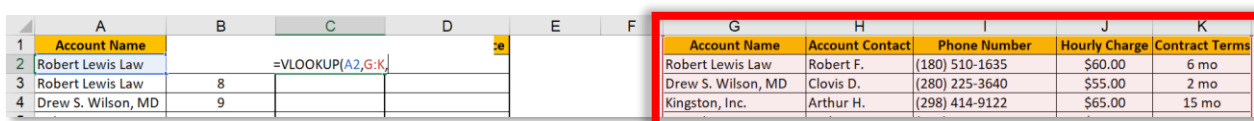
	A	B	C
1	Account Name	Hours of Service	
2	Robert Lewis Law	10	=VLOOKUP(A2,
3	Robert Lewis Law	8	
4	Drew S. Wilson, MD	9	

- Continue writing your formula by moving on to the second table and select the column that contains the unique identifier.



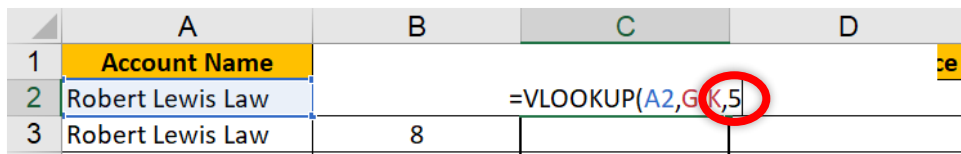
	A	B	C	D	E	F	G
1	Account Name						Account Name
2	Robert Lewis Law		=VLOOKUP(A2,G:G				Robert Lewis Law
3	Robert Lewis Law	8					Drew S. Wilson, MD

- As you select the column with the unique identifier, hold on to the click of the mouse and work your way to the right side of the table. Select the appropriate number of columns. There are two reminders in this step: 1) you can only move to the right of the table; 2) you need to make sure that the data you want to transfer is included *somewhere* in the range you are selecting. Add a comma.



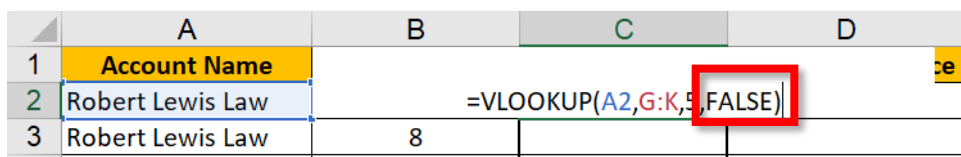
	A	B	C	D	E	F	G	H	I	J	K
1	Account Name						Account Name	Account Contact	Phone Number	Hourly Charge	Contract Terms
2	Robert Lewis Law		=VLOOKUP(A2,G:K				Robert Lewis Law	Robert F.	(180) 510-1635	\$60.00	6 mo
3	Robert Lewis Law	8					Drew S. Wilson, MD	Clovis D.	(280) 225-3640	\$55.00	2 mo
4	Drew S. Wilson, MD	9					Kingston, Inc.	Arthur H.	(298) 414-9122	\$65.00	15 mo

- Count the number of columns from the unique identifier to the data you want transferred. Enter this number in the third part of the argument and complete the part with a comma.



	A	B	C	D
1	Account Name			
2	Robert Lewis Law		=VLOOKUP(A2,G:K,5	
3	Robert Lewis Law	8		

- In the last part of the argument, type the word FALSE to have Excel look up an exact match. End the argument and press the **Enter** key on your keyboard.



	A	B	C	D
1	Account Name			
2	Robert Lewis Law		=VLOOKUP(A2,G:K,5,FALSE)	
3	Robert Lewis Law	8		

After completing the formula, you will see the data transferred from the second table to the original table where you wrote the formula.

	A	B	C	D
1	Account Name	Hours of Service	Hourly Charge	Amount to Invoice
2	Robert Lewis Law	10	\$60.00	
3	Robert Lewis Law	8	\$60.00	
4	Drew S. Wilson, MD	9	\$55.00	

HLOOKUP Formula

The **HLOOKUP** works in the same style as the **VLOOKUP** formula, but is instead used horizontally. Therefore, instead of selecting a range from left to right, you select a range from top to bottom. **HLOOKUP** aren't used too much since most tables are organized with rows. The **HLOOKUP** would be used if the tables are set from top to bottom.

Example of the **HLOOKUP** formula:

=HLOOKUP(A2,13:15,8,FALSE)

The **HLOOKUP** formula consists of four parts in the argument:

=HLOOKUP (Unique Identifier, Range, Number of Rows, False entry)

Let's explore the argument in detail. In the same fashions a **VLOOKUP**, the argument needs a unique identifier in both tables. When creating the formula, make sure to select the unique identifier of table #1.

=HLOOKUP (Unique Identifier, _____, _____, _____)

Next, navigate to table #2 and select the range that includes the unique identifier *and* the data you want to transfer. You'll need to make sure that the first row you select includes the unique identifier in table #2.

=HLOOKUP (Unique Identifier, Range starting with Unique Identifier, _____, _____)

In the third part of the argument, you'll enter a number. This number will correspond with the number of rows that sets apart the unique identifier from the data you want transferred. Therefore, if there are 8 rows from the unique identifier to the row that includes the data that you want transferred, then enter the number eight.

=HLOOKUP (Unique Identifier, Range, Number of Rows, _____)

The last part of the argument is a true or false statement. In an HLOOKUP, the word TRUE means *approximate match* and the word FALSE means *exact match*. Most of the time, you would most likely include the word FALSE.

=HLOOKUP (Unique Identifier, Range, Number of Columns, FALSE)

To write an **HLOOKUP** formula:

1. Select a cell to write your **HLOOKUP** formula.

	A	B
1	Account Name	Phone Number
2	Robert Lewis Law	
3	Drew S. Wilson, MD	
4	Kingston, Inc.	

2. Begin writing the **HLOOKUP** formula in this way: =HLOOKUP(

	A	B
1	Account Name	
2	Robert Lewis Law	=HLOOKUP(
3	Drew S. Wilson, MD	
4	Kingston, Inc.	

3. Select the unique identifier. Add a comma at the end.

	A	B
1	Account Name	
2	Robert Lewis Law	=HLOOKUP(A2,
3	Drew S. Wilson, MD	
4	Kingston, Inc.	

4. Continue your formula by moving to the second table. Select the row that contains the unique identifier first.

2	R	=HLOOKUP(A2, 13:13)
3	Drew S. Wilson, MD	
4	Kingston, Inc.	
5	Sacred Stone LLC	
6	A++ Education Center	
7	Stonewall, LLC	
8	Pomona USD	
9	Young Enterprises	
10		
11		
12		
13	Account Name	Robert Lewis Law
14	Account Contact	Robert F.
15	Phone Number	(180) 510-1635
16	Hourly Charge	\$60.00
17	Contract Terms	6 mo

5. As you click on the row, hold with your mouse and work your way down the table until you make sure that the data that you want transferred is included in the range you just selected. There are two reminders in this step: 1) you can only move from top to bottom; 2) you need to make sure that the data you want to transfer is included *somewhere* in the range you are selecting. Add a comma.

1	
2	R =HLOOKUP(A2,13:17,3,)
3	Drew S. Wilson, MD
4	Kingston, Inc.
5	Sacred Stone LLC
6	A++ Education Center
7	Stonewall, LLC
8	Pomona USD
9	Young Enterprises
10	
11	
12	
13	Account Name Robert Lewis Law Drew S. Wilson, MD
14	Account Contact Robert F. Clovis D.
15	Phone Number (180) 510-1635 (280) 225-3640
16	Hourly Charge \$60.00 \$55.00
17	Contract Terms 6 mo 2 mo

- Count the number of rows from your unique identifier to the data you want transferred in the second table. Enter this number in the third part of the argument and add a comma.

1	
2	R =HLOOKUP(A2,13:17,3,)
3	Drew S. Wilson, MD
4	Kingston, Inc.

- In the last part of the argument, type the word FALSE to have Excel look up an exact match. End the argument and press the **Enter** key on your keyboard.

1	
2	R =HLOOKUP(A2,13:17,3,FALSE)
3	Drew S. Wilson, MD
4	Kingston, Inc.

After completing the formula, you will see the data transferred from the second table to the original table where you wrote the formula.

1	Account Name	Phone Number
2	Robert Lewis Law	(180) 510-1635
3	Drew S. Wilson, MD	(280) 225-3640
4	Kingston, Inc.	(298) 414-9122

LOOKUP Formula

Along the same family, the **LOOKUP** formula is also used to find data to transfer from one table to the other. Unlike the **VLOOKUP** and the **HLOOKUP** formulas, the **LOOKUP** formula only performs an *approximate match* in a single column or row. Although this may be an issue in some instances, the formula is still very useful because you are not restricted by the order of the columns. In other words, you don't have to select a range from left to right like you have to in a **VLOOKUP** formula.

For the best results, the table where you are trying to transfer the data must be organized in ascending order. If this table is not sorted in ascending order, your results may vary when using the **LOOKUP** formula.

Example of a **LOOKUP** formula:

=LOOKUP(A2,13:15,8,FALSE)

The **LOOKUP** formula consists of three parts in the argument:

=LOOKUP (Unique Identifier (UI), Column Or Row with UI, Column Or Row)

A **LOOKUP** formula needs to begin with the unique identifier. When creating the formula, make sure to select the unique identifier to begin your argument.

=LOOKUP (Unique Identifier, _____, _____)

Next, navigate to table #2 and select a column or row that contains all the unique identifiers.

=LOOKUP (Unique Identifier, Column Or Row with Unique Identifier, _____)

In the third part of the argument, you'll also select a column or row. This column or row is the data that you plan on transferring from this table to the other table.

=LOOKUP (Unique Identifier, Range, Column or row containing data needed)

To write a **LOOKUP** formula:

1. Make sure that the data in the *lookup* table (the one where you'll be transferring the data) is sorted in *ascending* order by the unique identifier.

	A	B	C
1	Store Branch	Store ID	Employees
2	Pomona	1234	29
3	Diamond Bar	4567	28
4	Glendale	7891	33

2. Click on the cell where you want to begin your **LOOKUP** formula.

F	G	H
Store ID	Store Manager	Employees
4567	R. Perez	
1234	C. Chavez	
7891	H. Williams	

3. Begin typing your **LOOKUP** formula in this manner: =LOOKUP(

F	G	H
Store ID	Store Manager	
4567	R. Perez	=LOOKUP(
1234	C. Chavez	
7891	H. Williams	

4. Select your unique identifier to begin your argument and add a comma.

F	G	H
Store ID	Store Manager	
4567	R. Perez	=LOOKUP(F2,
1234	C. Chavez	
7891	H. Williams	

5. Navigate to the lookup table (the second table) and select the column or row that contains all the unique identifiers. Add a comma.

	A	B	C	D	E	F	G	H	I
1	Store Branch	Store ID	Employees			Store ID	Store Manager		
2	Pomona	1234	29			4567	R. Perez	=LOOKUP(F2,B:B,	
3	Diamond Ba	4567	28			1234	C. Chavez		
4	Glendale	7891	33			7891	H. Williams		

6. Select the row or column that contains the data you want transferred from the lookup table. Hit the **Enter** key on your keyboard to complete the **LOOKUP** formula.

	A	B	C	D	E	F	G	H	I
1	Store Branch	Store ID	Employees			Store ID	Store Manager		
2	Pomona	1234	29			4567	R. Perez	=LOOKUP(F2,B:B,C:C)	
3	Diamond Bar	4567	28			1234	C. Chavez		
4	Glendale	7891	33			7891	H. Williams		

Check your data to ensure the formula is working properly. If you notice that the data transferred does not look right correct the formula. One great way to correct the formula is by checking that the lookup table is, indeed, sorted by the unique identifier in *ascending* order.

Store ID	Store Manager	Employees
4567	R. Perez	28
1234	C. Chavez	29
7891	H. Williams	33

INDEX Formula

Although some may not consider the **INDEX** formula as a lookup formula, the **INDEX** formula does help find data and transfer it from one table to another. Unlike the other lookup formulas, the **INDEX** formula returns a value *based on a position* you include in the argument.

Example of an **INDEX** formula:

=INDEX(A:D,8,3)

The **INDEX** formula consists of three parts in the argument:

=INDEX (Range, Number of Rows, Number of Columns)

The first part of the argument in an **INDEX** formula includes a range. As it's common in most of these formulas, the range must contain the data you're trying to transfer from one table to another table.

=INDEX (Range, _____, _____)

Next, you'll need to tell Excel how many rows it should count from top to bottom. Therefore, if the data you want extracted is located in the 8th row (from the top), then you will enter the number eight in the second part of the formula.

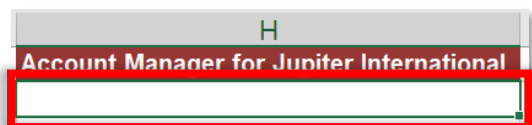
=INDEX (Range, Number of Rows, _____)

Finally, end the formula with the number of columns starting from the first column in your range. Therefore, if the data you want transferred is located in the 3rd column (starting from the first column in your range), then you will include the number three in your formula.

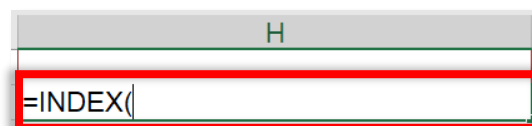
=INDEX (Range, Number of Rows, Number of Columns)

How to use an **INDEX** formula:

1. Click on the cell where you want to write your **INDEX** formula.



2. Begin your **INDEX** formula in the form =INDEX(



3. Move your cursor to the table that contains the data you want transferred and make sure that the range includes the data you're looking for. Add a comma after selecting the range.



- Count the number of rows starting with the first row (at the top) of your range until you reach the row that contains the data you want transferred. Enter the number in the argument and include a comma.

	A	B	C	D	E	F	G	H
1	Count	Account ID	Account Name	Account Manager	Location			=INDEX(A:E,7,)
2	1	11368	Bright Minds Non-Profit	Sebastian D.	CA			
3	2	11457	JFK Online College	Claudia R.	CA			
4	3	11498	Rock Learning Centers	Maria G.	IL			
5	4	11500	ITT Technical Institute - Palm Springs	Matthew J.	IL			
6	5	11459	Los Angeles USD	Horacio M.	CA			
7	6	11458	Jupiter International	Francisco Y.	CA			
8	7	11474	Educacion Escolar Para Ninos, SA de CV	William W.	IL			

- Count the number of rows starting from the first column in your range until you find the column that includes the data you want transferred. Enter this number as the last part of the argument and close the argument by hitting **ENTER** on your keyboard.

	A	B	C	D	E	F	G	H
1	Count	Account ID	Account Name	Account Manager	Location			=INDEX(A:E,7,4)
2	1	11368	Bright Minds Non-Profit	Sebastian D.	CA			
3	2	11457	JFK Online College	Claudia R.	CA			
4	3	11498	Rock Learning Centers	Maria G.	IL			
5	4	11500	ITT Technical Institute - Palm Springs	Matthew J.	IL			
6	5	11459	Los Angeles USD	Horacio M.	CA			
7	6	11458	Jupiter International	Francisco Y.	CA			
8	7	11474	Educacion Escolar Para Ninos, SA de CV	William W.	IL			

If done correctly, the **INDEX** formula will display the data according to the coordinates (or arguments) you included.

	A	B	C	D	E	F	G	H
1	Count	Account ID	Account Name	Account Manager	Location			Account Manager for Jupiter International
2	1	11368	Bright Minds Non-Profit	Sebastian D.	CA			Francisco Y.
3	2	11457	JFK Online College	Claudia R.	CA			
4	3	11498	Rock Learning Centers	Maria G.	IL			
5	4	11500	ITT Technical Institute - Palm Springs	Matthew J.	IL			
6	5	11459	Los Angeles USD	Horacio M.	CA			
7	6	11458	Jupiter International	Francisco Y.	CA			
8	7	11474	Educacion Escolar Para Ninos, SA de CV	William W.	IL			

MATCH Formula

A great lookup formula is the **MATCH** formula. However, the **MATCH** formula will not help you look up a specific value, but instead helps you identify the position of the value. In other words, the **MATCH** formula will return a number, specifying the location of the value you're searching for. Since using the **MATCH** formula helps you identify the position of a value, the **MATCH** formula is typically used with other formula (such as the **INDEX** formula) to include the position of a value.

Example of a **MATCH** formula:

=MATCH(G3,A:A,0)

The **MATCH** formula consists of three parts in the argument:

=MATCH (Unique Identifier, Column or Row, Match Type)

Let's explore the **MATCH** formula in detail. The first part of the formula's argument is the unique identifier. Remember, this can be text, a cell reference, an ID or anything that is unique to your entry.

=MATCH (Unique Identifier, _____, _____)

The second part of the argument is a range. Typically, this range is a column or a row. Remember, the range must contain the unique identifier you are looking for.

=MATCH (Unique Identifier, Column or Row, _____)

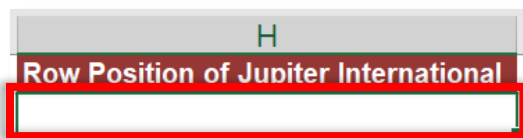
The last part of the argument may be new to most Excel users. The Match type requires you to enter the number 1, 0 or -1. Here is the difference between the three options:

- 1 = Finds the largest value that is less than or equal to the unique identifier. If this option is used, then the lookup table must be sorted by the unique identifier in *ascending* order.
- 0 = Exact match
- -1 = Finds the smallest value that is greater than or equal to the unique identifier. If this option is used, then the lookup table must be sorted by the unique identifier in *descending* order.

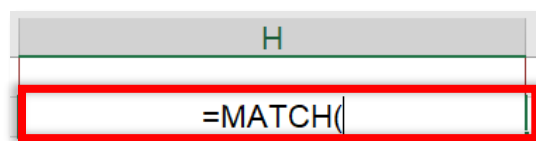
=MATCH (Unique Identifier, Column or Row, 0)

To use a **MATCH** formula:

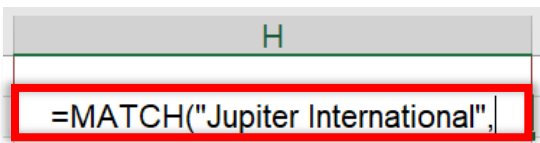
1. Select the cell where you want to write your **MATCH** formula.



2. Begin writing your **MATCH** formula: =MATCH(



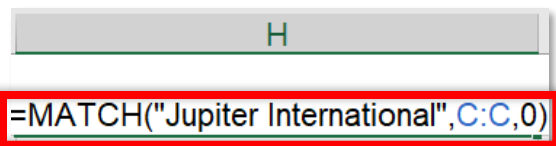
- Choose the cell reference, enter a value, ID or calculation for your unique identifier. Add a comma.



- In the table that contains the information you want, select the range that contains the unique identifier. Add a comma.

C	D	E	F	G	H
Account Name	Account Manager	Location			
Bright Minds Non-Profit	Sebastian D.	CA			=MATCH(\"Jupiter International\",C:C,
JFK Online College	Claudia R.	CA			
Rock Learning Centers	Maria G.	IL			
ITT Technical Institute - Palm Springs	Matthew J.	IL			
Los Angeles USD	Horacio M.	CA			
Jupiter International	Francisco Y.	CA			
Educacion Escolar Para Ninos, SA de CV	William W.	IL			

- Include the number 0, 1, or -1 to complete the **MATCH** formula.



If done correctly, the **MATCH** formula will return a number. This number represents the position of the unique identifier depending if the **MATCH** formula's range was a row or a column. For example, if a **MATCH** formula returns the number 7, this means that the unique identifier was found in the 7th row.

C	D	E	F	G	H
Account Name	Account Manager	Location			Row Position of Jupiter International
Bright Minds Non-Profit	Sebastian D.	CA			7
JFK Online College	Claudia R.	CA			
Rock Learning Centers	Maria G.	IL			
ITT Technical Institute - Palm Springs	Matthew J.	IL			
Los Angeles USD	Horacio M.	CA			
Jupiter International	Francisco Y.	CA			
Educacion Escolar Para Ninos, SA de CV	William W.	IL			

Pivot Tables

Pivot Tables are one of the most powerful tools used in Excel because they allow to make computations and organize your data without the need of formulas. **Pivot Tables** are specialized tables created from data sets. This means that you will need to already have a table or data set created in order to use a **Pivot Table**.

What is a Pivot Table?

A **Pivot Table** is a specialized table that summarizes your data. **Pivot Tables** are created from data sets and allow you to make easy calculations based on the data that you have, without the need of formulas. This powerful tool helps users analyze data and organize it in a *quick* way that regular tables may not be able to.

Why use a Pivot Table?

Pivot Tables are best used when you have a data set with a significant amount of entries. When working with tens of thousands of entries, using formulas may slow down your Excel workbook, but **Pivot Tables** can summarize your data in just a few clicks. **Pivot Tables** also set up the foundation for creating **Pivot Charts** and create a visually-appealing presentation of the data you are analyzing.

How to create a simple Pivot Table

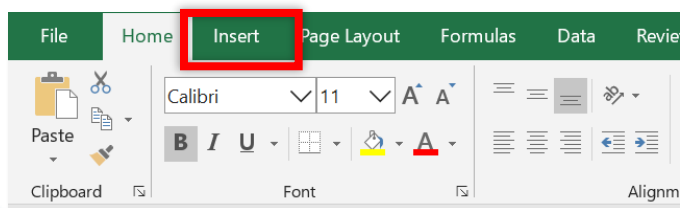
Excel makes it very easy to create **Pivot Tables**. Before you get started, you'll need a table with data. You will create a **Pivot Table** based on this data.

To create a simple **Pivot Table**:

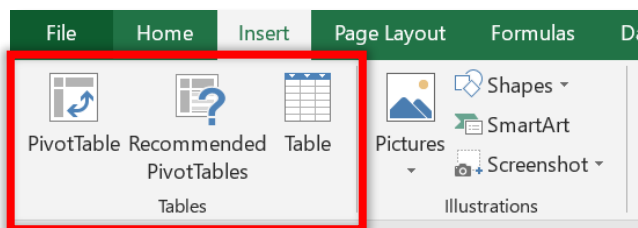
1. Select your table or data set.

	A	B	C	D	E
1	Sales Manager	Account ID	Account Name	Opportunity Status	Account Size
2	Raul Espinoza	00001	Howard & Son Inc.	Prospecting	\$49,963.00
3	Colette Robins	00002	The Getaway Franchise	Closed/Won	\$9,307.00
4	Bruce Corral	00003	Steele Plumbing Inc.	Closed/Lost	\$11,472.00
5	Stacey Nguyen	00004	Loma Linda Unified School District	Negotiating	\$40,902.00
6	Bruce Corral	00005	ABC Study Group	Closed/Lost	\$61,510.00
7	Stacey Nguyen	00006	Valley Way LLC	Negotiating	\$6,613.00
8	Bruce Corral	00007	Robotics R' Us	Prospecting	\$70,392.00
9	Raul Espinoza	00008	MarMendez Inc.	Closed/Won	\$53,472.00

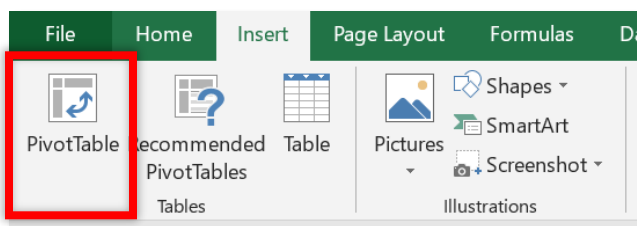
2. Navigate to the **Insert** tab.



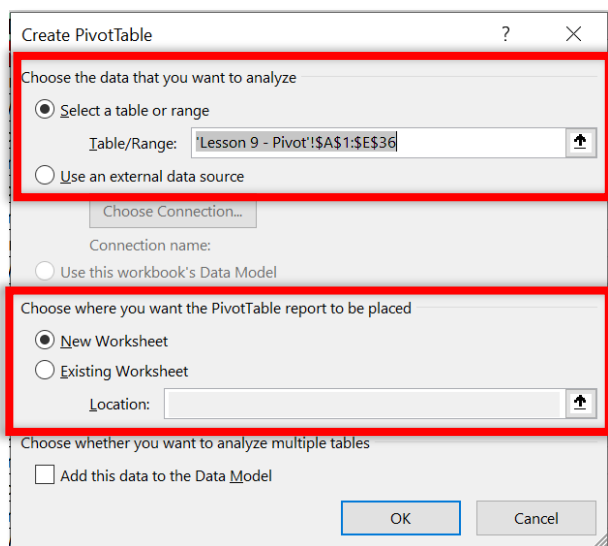
3. Locate the **Tables** group.



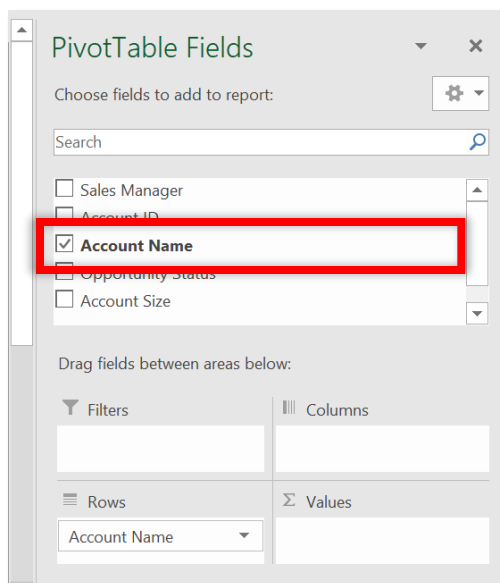
4. Click on the **Pivot Table** command.



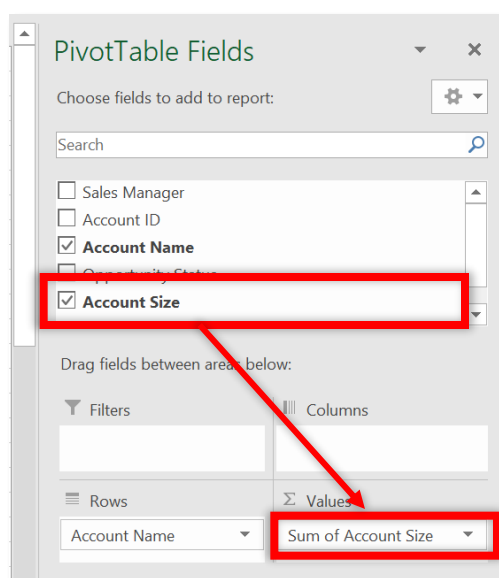
5. In the pop-up window, confirm the table or range and choose where you want the **Pivot Table** to be placed. By default, your **Pivot Table** can be created in a new spreadsheet. Click **OK** to continue.



6. On the right side of your screen, the **Field List** will appear. Select the data field you want included as a row by checking a box.



- Decide how you want to summarize your data and select a quantifiable field. Drag the quantifiable field from the available field bank at the top and move it to the **Values** box.



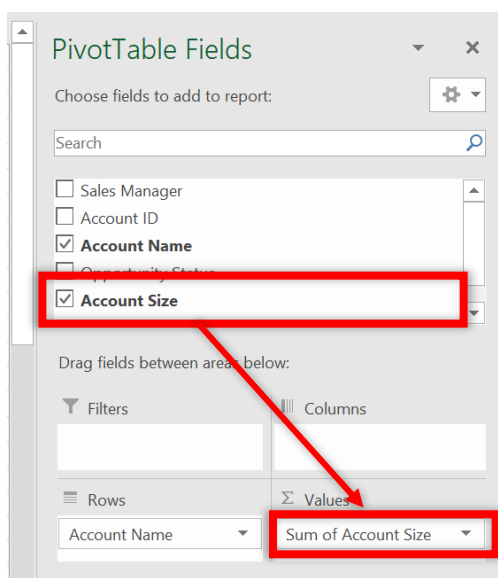
You can continue to manipulate your data in any way or form of your choosing. As you make updates to the fields, the **Pivot Table** will update accordingly.

	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	
7	Brandy Branding	60958	
8	Corkie's LLC	64589	
9	Cruz Cruise Ships LLC	1352	
10	Drew's Italian Kitchen	13242	
11	Green B LLC	1745	
12	Howard & Son Inc.	49963	

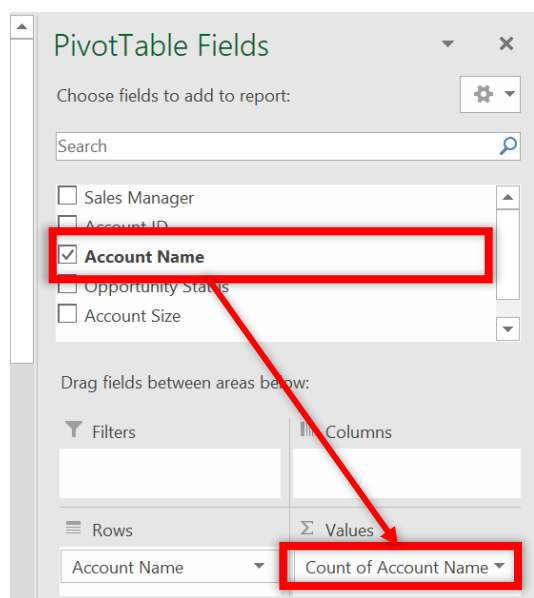
How to make calculations in Pivot Tables

Pivot Tables are powerful because they allow you to make calculations of all sorts. There are two main ways to make calculations in **Pivot Tables**:

1. **Using quantifiable fields** – Excel quickly identifies quantifiable fields in **Pivot Tables**. This makes it easy to manipulate the calculation. You can use SUM functions, COUNT functions and AVERAGE functions (to name a few) with your **Pivot Tables**. To make these calculations, just drag the appropriate quantifiable field to the **Values** quadrant of the **Pivot Table**.



2. **Using Non-Quantifiable Fields (Or Text fields)** – Technically, you can also use text fields (i.e. fields that are not numbers). If you use text fields, Excel will rightfully assume that you want to make a count of those fields. Therefore, when you move a non-quantifiable field to the **Values** quadrant, Excel will automatically make a COUNT function.

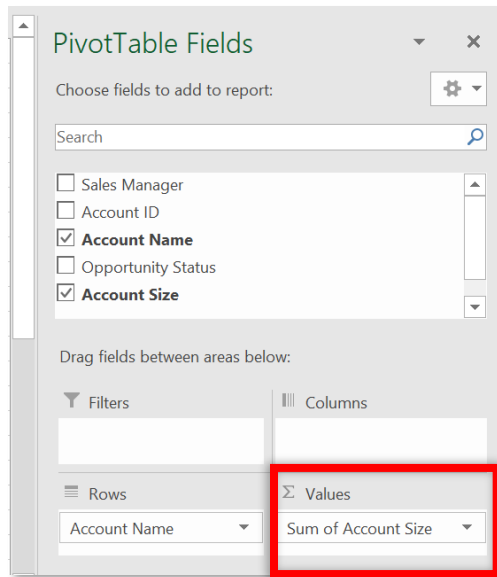


How to change the calculation type of a Pivot Table

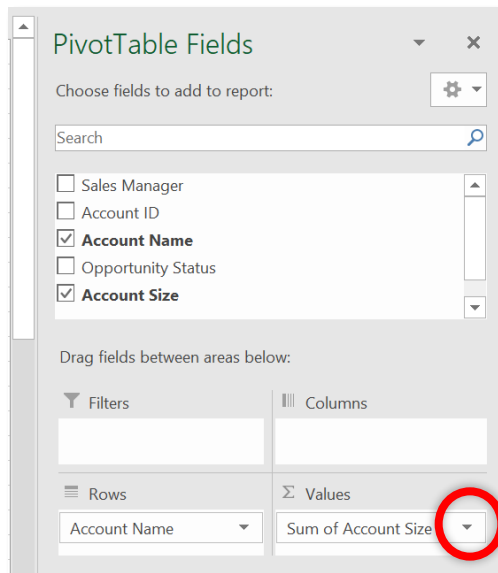
Excel will give you a default calculation when you move a field to the **Values** quadrant. You can always change the type of calculation in a **Pivot Table**.

To change the calculation type of a **Pivot Table**:

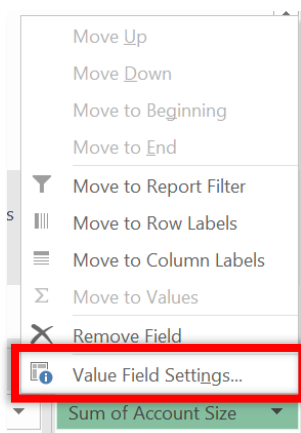
1. Locate the **Values** quadrant.



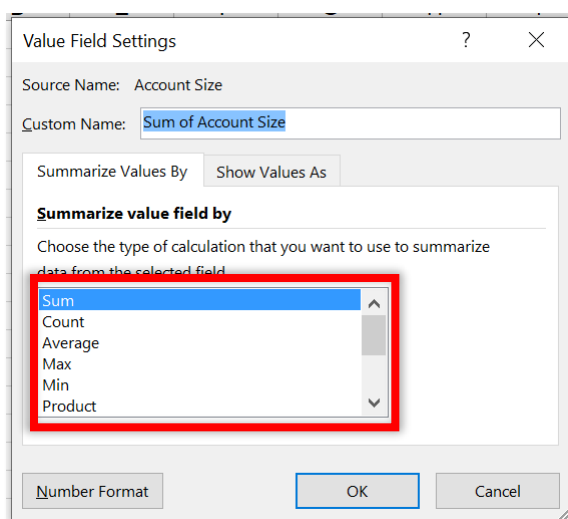
2. Next to the field, click on the drop-down arrow.



3. From the menu options, select the **Value Field Settings** option.



4. In the pop-up window, select the type of calculation you want for your **Pivot Table** from the options below. Click the **OK** button when you are done.



How to change the Data Source of a Pivot Table

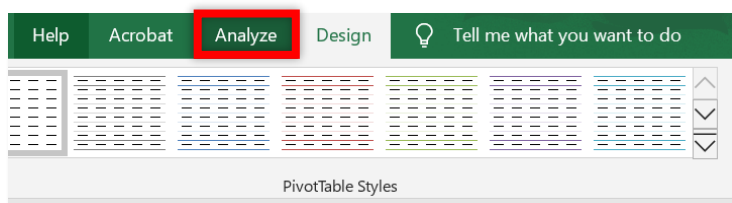
As mentioned previously, to create a **Pivot Table**, you need a data set. However, you may run into a situation in which you originally started with a data set, for example, that has 4 columns, and now your original data set increased to 7 columns. **Pivot Tables** do not automatically update with any new rows or columns. **Pivot Tables** only read off of the original data set that you selected when the **Pivot Table** was created. If you need to update the range of the original data set, you'll need to change the **Data Source**.

To change the **Data Source** of a **Pivot Table**:

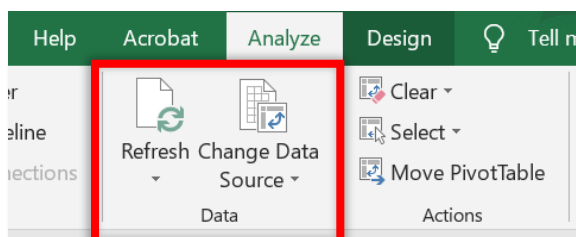
1. Click anywhere inside the **Pivot Table**.

	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	

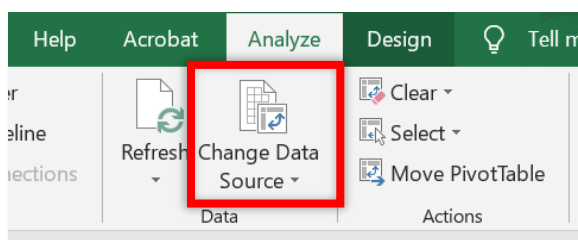
2. Navigate to the **Analyze** tab.



3. Locate the **Data** group.



4. Select the **Change Data Source** command.

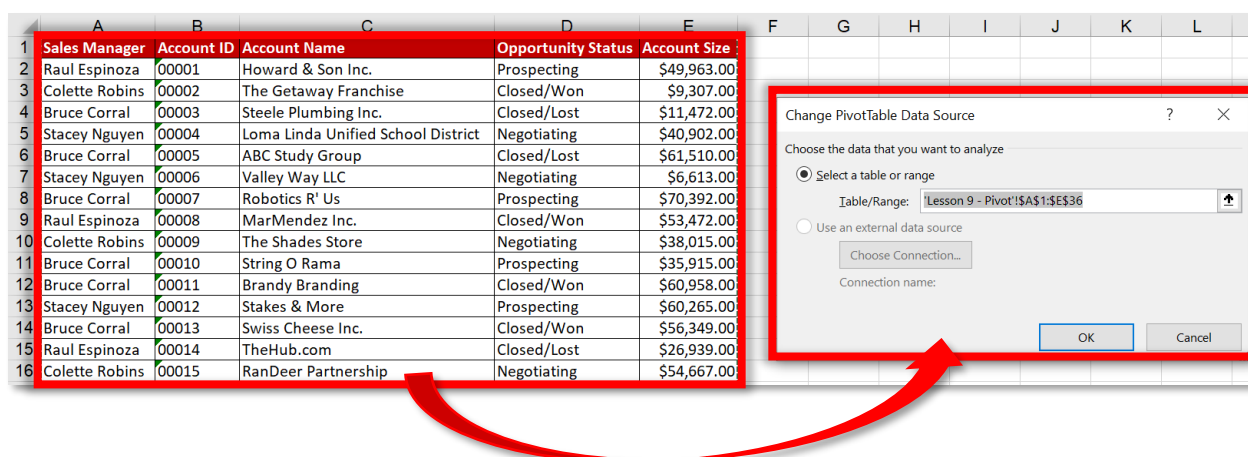


5. Excel will then display a pop-up window, allowing you to change the range you originally selected. You will also see your original table displayed. You can select your new range by using your mouse and the *Table/Range* field will update accordingly. Once you select the appropriate range, click the **OK** button.

If you followed these steps correctly, your **Pivot Table** will now include any additional rows or columns and will make the appropriate updates.

How to Refresh the data in a Pivot Table

When making particular changes to your original data set, **Pivot Tables** don't automatically catch those changes. This means that if you changed the name of an entry in the original table, the **Pivot Table** *will not* update with that new entry name. In this case, you would have to use the **Refresh** command for **Pivot Tables**. Before explaining how to locate and use the **Refresh** command, let's first explore under what circumstances would you use the **Refresh** command.



Sales Manager	Account ID	Account Name	Opportunity Status	Account Size
Raul Espinoza	00001	Howard & Son Inc.	Prospecting	\$49,963.00
Colette Robins	00002	The Getaway Franchise	Closed/Won	\$9,307.00
Bruce Corral	00003	Steele Plumbing Inc.	Closed/Lost	\$11,472.00
Stacey Nguyen	00004	Loma Linda Unified School District	Negotiating	\$40,902.00
Bruce Corral	00005	ABC Study Group	Closed/Lost	\$61,510.00
Stacey Nguyen	00006	Valley Way LLC	Negotiating	\$6,613.00
Bruce Corral	00007	Robotics R' Us	Prospecting	\$70,392.00
Raul Espinoza	00008	MarMendez Inc.	Closed/Won	\$53,472.00
Colette Robins	00009	The Shades Store	Negotiating	\$38,015.00
Bruce Corral	00010	String O Rama	Prospecting	\$35,915.00
Bruce Corral	00011	Brandy Branding	Closed/Won	\$60,958.00
Stacey Nguyen	00012	Stakes & More	Prospecting	\$60,265.00
Bruce Corral	00013	Swiss Cheese Inc.	Closed/Won	\$56,349.00
Raul Espinoza	00014	TheHub.com	Closed/Lost	\$26,939.00
Colette Robins	00015	RanDeer Partnership	Negotiating	\$54,667.00

1. **Made changes to the original data set** – If you changed the entry of any cell in the original data set, your **Pivot Table** will not automatically update. To make your **Pivot Table** update the new changes, you'll need to use the **Refresh** command.
2. **Added new columns or rows to a Table** – If you formatted your data set as a **Table**, then you really don't have to worry about changing the **Data Source** (which was discussed in the previous section). This is because Excel will automatically perceive any new columns or rows as being part of the **Table** that you named. In this case, if you add anything new to a **Table**, you'll just need to use the **Refresh** command.
3. **Added new entries to your range** – As described earlier, if you add a new entry (row) or a new column to your range, you'll need to also use the **Refresh** command.

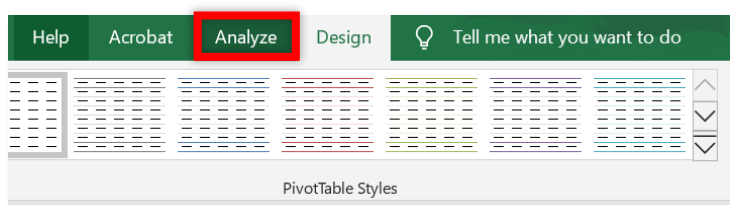
Basically, you'll need to use the **Refresh** command anytime a change has been made to the original data set.

To use the **Refresh** command:

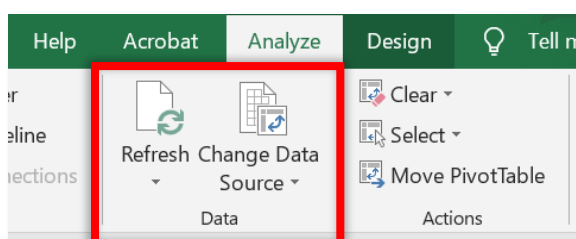
1. Click anywhere inside the **Pivot Table**.

	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	

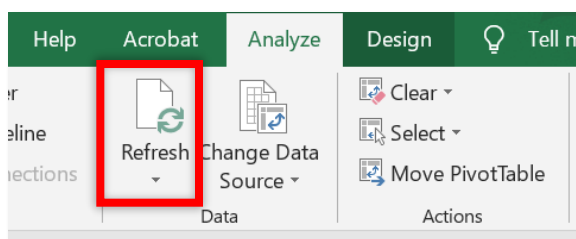
2. Navigate to the **Analyze** tab.



3. Locate the **Data** group.



4. Select the **Refresh** command.



The **Refresh** command technically has a drop-down menu that allows you to exclusively update the **Pivot Table** you're working on or **all Pivot Tables** at once.

How to hide the Field List of a Pivot Table

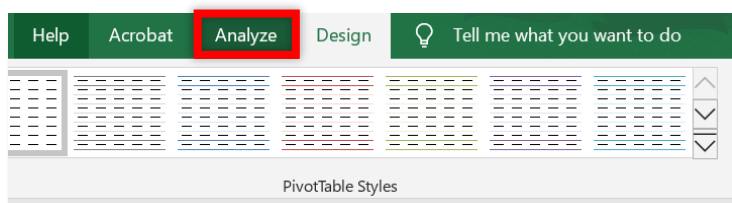
The **Field List** appears automatically after creating a **Pivot Table**. The **Field List** can be displayed or hidden by simply selecting or unselecting the **Field List** command, respectively.

To hide the **Field List**:

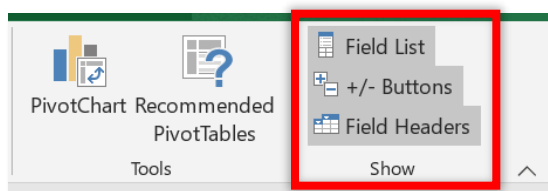
1. Click anywhere inside the **Pivot Table**.

	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	

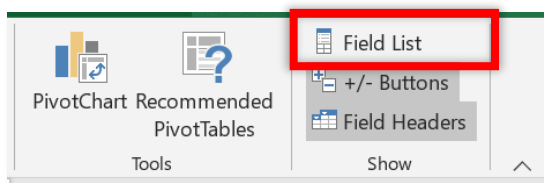
2. Navigate to the **Analyze** tab.



3. Locate the **Show** group.



4. Unselect the **Field List** command.



How to hide the buttons in Pivot Tables

Pivot Tables use buttons to group and expand selections that may be additional rows or subtotals. These buttons can be hidden in order to make your **Pivot Tables** more presentable. Additionally, hiding these buttons will also make your **Pivot Charts** look more presentable as well.

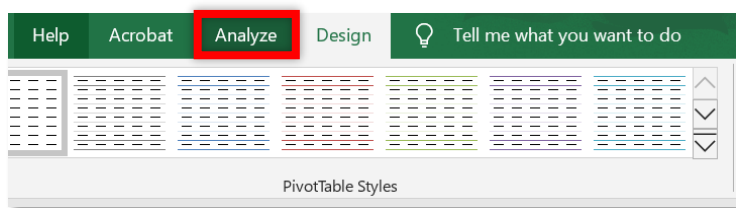
3	Row Labels	Sum of Account Size
4	ABC Study Group	61510
5	Closed/Lost	61510
6	ADA LLC	16734
7	Closed/Won	16734
8	Azel Furniture	27525

To hide the buttons in your **Pivot Table**:

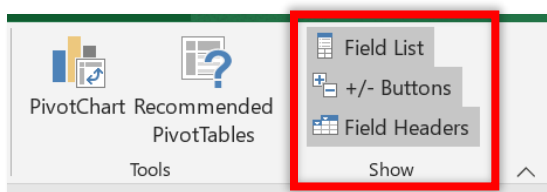
1. Click anywhere inside the **Pivot Table**.

	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	

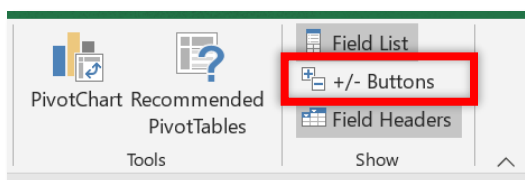
2. Navigate to the **Analyze** tab.



3. Locate the **Show** group.



4. Unselect the **Buttons** command.



If done correctly, the buttons on your **Pivot Table** will disappear.

3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	Closed/Lost	61510	
6	ADA LLC	16734	
7	Closed/Won	16734	
8	Azel Furniture	27525	



3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	Closed/Lost	61510	
6	ADA LLC	16734	
7	Closed/Won	16734	
8	Azel Furniture	27525	

How to hide the Field Headers in Pivot Tables

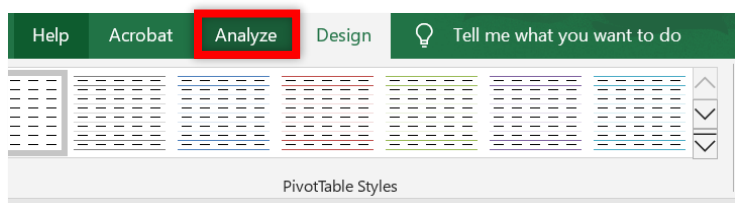
By default, Excel names the headers of your tables. You can change most column labels by clicking directly and typing. You can also hide the **Field Headers** since they most likely appear as a *Row Label* or *Column Label*.

To hide the **Field Headers** in your **Pivot Table**:

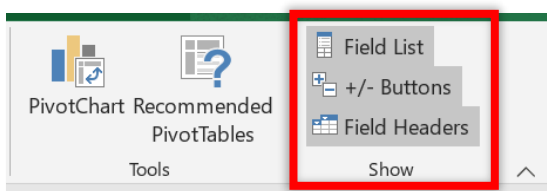
1. Click anywhere inside the **Pivot Table**.

	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	

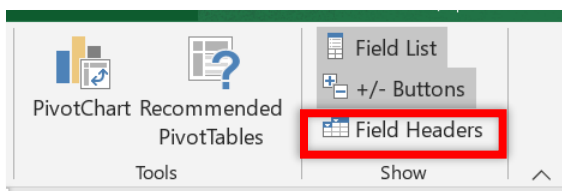
2. Navigate to the **Analyze** tab.



3. Locate the **Show** group.



4. Unselect the **Field Headers** command.



If done correctly, you'll notice that the **Field Headers** in your **Pivot Table** are no longer visible.

3	Row Labels	Sum of Account Size
4	ABC Study Group	61510
5	Closed/Lost	61510
6	ADA LLC	16734
7	Closed/Won	16734
8	Azel Furniture	27525



3		Sum of Account Size
4	ABC Study Group	61510
5	Closed/Lost	61510
6	ADA LLC	16734
7	Closed/Won	16734
8	Azel Furniture	27525

How to rename your columns in a Pivot Table

Excel will automatically name the columns in your **Pivot Table**. The steps to rename the columns are pretty easy.

To rename your columns in a **Pivot Table**:

1. Click on the cell you want to rename.

3	Row Labels	Sum of Account Size
4	ABC Study Group	61510
5	Closed/Lost	61510
6	ADA LLC	16734
7	Closed/Won	16734
8	Azel Furniture	27525

2. Start typing and rename your column. Hit the **Enter** key on your keyboard when

3	Row Labels	Account Total
4	ABC Study Group	61510
5	Closed/Lost	61510
6	ADA LLC	16734
7	Closed/Won	16734
8	Azel Furniture	27525

you're done.

That's it! However, there is a catch. You cannot rename a column and use the name of an existing field in the original table. Therefore, if your original table has a column named "Accounts" and you try to rename a column in your **Pivot Table** as "Accounts", Excel will not allow it and will display an error message. The names of the columns in your **Pivot Tables** must be unique.

3	Row Labels	Sum of Account Size
4	ABC Study Group	61510
5	Closed/Lost	61510
6	ADA LLC	16734
7	Closed/Won	16734
8	Azel Furniture	27525



3	Row Labels	Account Total
4	ABC Study Group	61510
5	Closed/Lost	61510
6	ADA LLC	16734
7	Closed/Won	16734
8	Azel Furniture	27525

How to customize the style of your Pivot Table

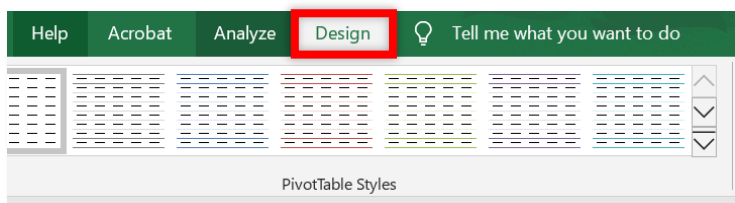
Pivot Tables allow you to use built-in designs to make them look professional and nice. If you are not happy with the style of your **Pivot Table**, you can always change the design.

To change the style of your **Pivot Table**:

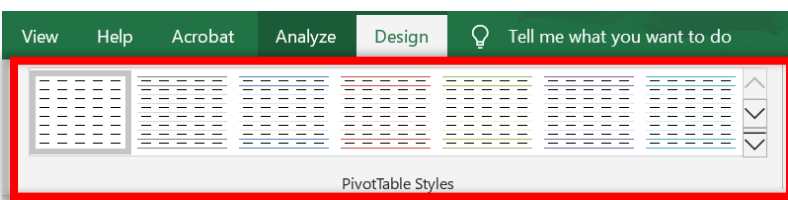
1. Click anywhere inside the **Pivot Table**.

	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	

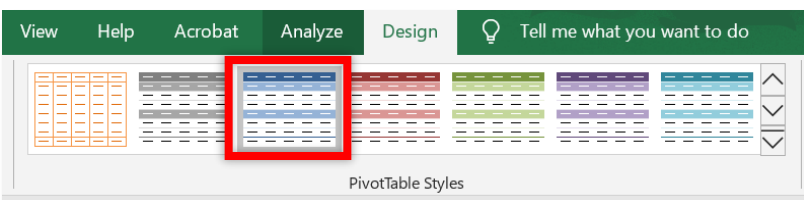
2. Navigate to the **Design** tab.



3. Locate the **PivotTable Styles** group.



4. Select the design of your **Pivot Table** from the gallery.



How to customize the Subtotals of your Pivot Table

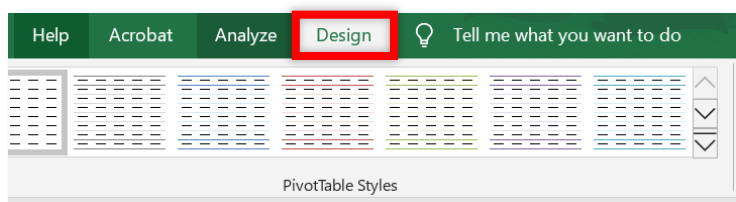
In many cases, when you create a **Pivot Table**, Excel automatically assumes that you want to display subtotals to your calculations. The subtotals can be controlled in **Pivot Tables**.

To customize the subtotals of **Pivot Tables**:

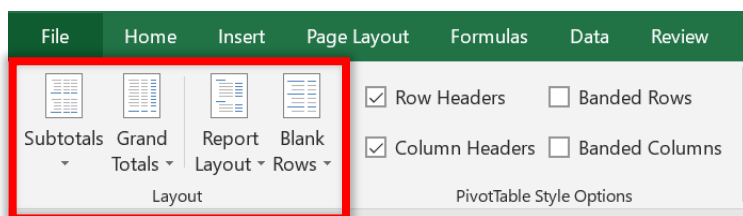
1. Click anywhere inside the **Pivot Table**.

	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	

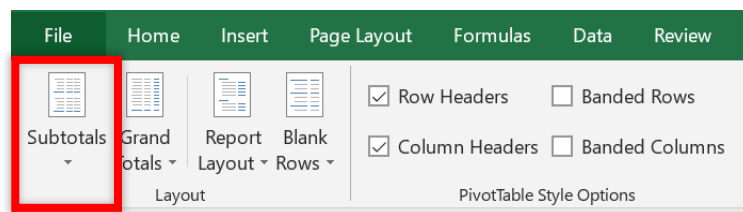
2. Navigate to the **Design** tab.



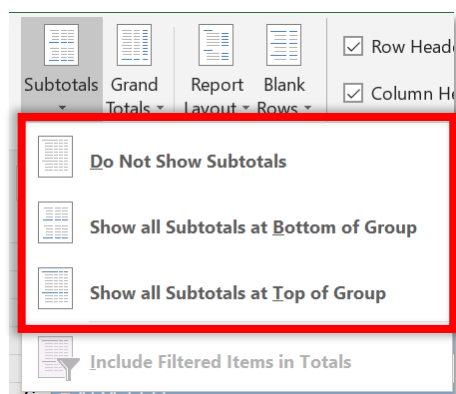
3. Locate the **Layout** group.



4. Select the **Subtotals** command.



5. In the drop-down menu, select the changes you want to make to your subtotals. If you want to completely remove any subtotals, choose the *Do Not Show Subtotals* option.



How to customize the Grand Totals of your Pivot Table

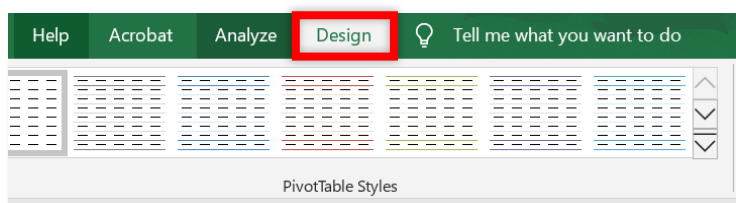
Like subtotals, Excel typically displays the grand total at the bottom of your **Pivot Table**. The grand total of your **Pivot Table** can be customized.

To customize the grand totals of **Pivot Tables**:

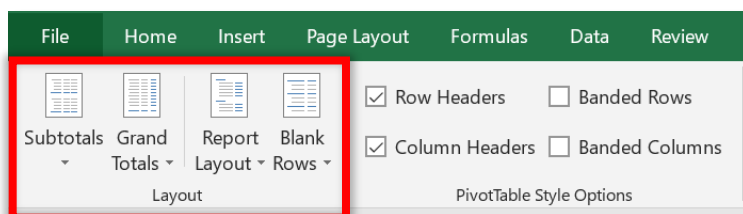
1. Click anywhere inside the **Pivot Table**.

	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	

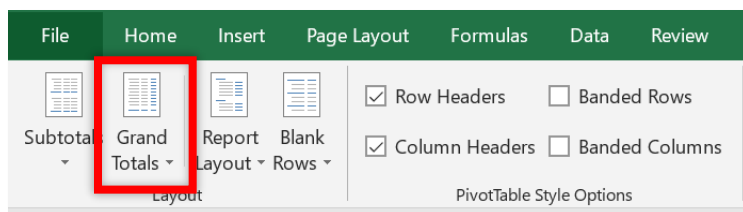
2. Navigate to the **Design** tab.



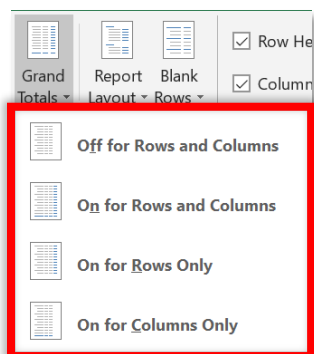
3. Locate the **Layout** group.



4. Select the **Grand Totals** command.



5. In the drop-down menu, select how you want your grand totals to appear. If you don't want any grand totals, select the *Off for Rows and Columns* option.

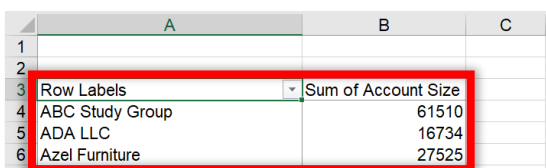


How to customize the Report Layout of your Pivot Table

By default, a **Pivot Table** uses a layout called *Compact Form*. This layout is useful when doing a quick **Pivot Table**. However, when you begin to include additional rows to your **Pivot Table**, the *Compact Form* does not look professional. In this case, it is better to use other layouts. As a rule of thumb, if your **Pivot Table** has more than one row, the best layout is the *Tabular Form* layout.

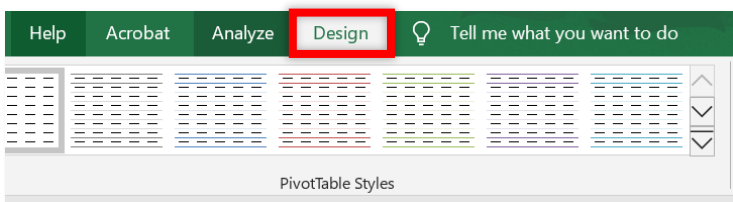
To customize the **Report Layout** of your **Pivot Table**:

1. Click anywhere inside the **Pivot Table**.

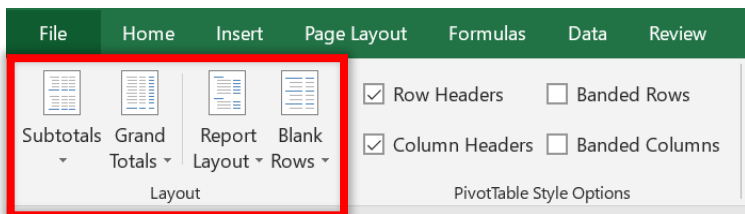


Row Labels	Sum of Account Size
ABC Study Group	61510
ADA LLC	16734
Azel Furniture	27525

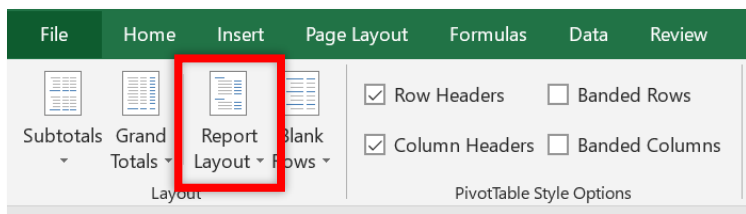
2. Navigate to the **Design** tab.



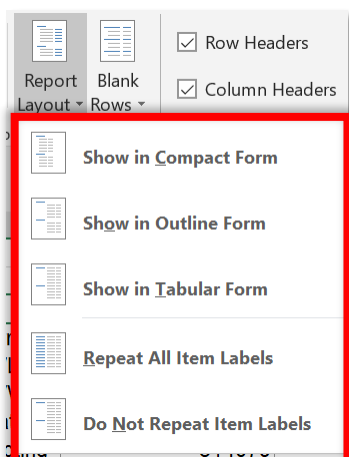
3. Locate the **Layout** group.



4. Select the **Report Layout** command.



5. In the drop-down menu, select **Report Layout** of your choice.



As mentioned previously, there is a huge difference between using the default *Compact Form* layout and another layout, such as the *Tabular Form* layout. The *Tabular Form* layout is helpful when using more than one row because it basically includes the other row fields as columns. Therefore, if you're looking to add what you would traditionally think as "columns", you may want to add rows instead and change the format to the *Tabular Form*. Below is an example comparing a **Pivot Table** with two rows in *Compact Form* and the same **Pivot Table** in *Tabular Form*.

3	Row Labels	Sum of Account Size
4	Bruce Corral	666623
5	Closed/Lost	171841
6	Closed/Won	131901
7	Negotiating	48802
8	Prospecting	314079
9	Colette Robins	214235
10	Closed/Lost	29302
11	Closed/Won	9307
12	Negotiating	175626
13	Raul Espinoza	214005
14	Closed/Lost	59833
15	Closed/Won	104209
16	Prospecting	49963
17	Stacey Nguyen	281539
18	Closed/Won	166795
19	Negotiating	54479
20	Prospecting	60265
21	Grand Total	1376402



3	Sales Manager	Opportunity Status	Sum of Account Size
4	Bruce Corral	Closed/Lost	171841
5		Closed/Won	131901
6		Negotiating	48802
7		Prospecting	314079
8	Bruce Corral Total		666623
9	Colette Robins	Closed/Lost	29302
10		Closed/Won	9307
11		Negotiating	175626
12	Colette Robins Total		214235
13	Raul Espinoza	Closed/Lost	59833
14		Closed/Won	104209
15		Prospecting	49963
16	Raul Espinoza Total		214005
17	Stacey Nguyen	Closed/Won	166795
18		Negotiating	54479
19		Prospecting	60265
20	Stacey Nguyen Total		281539
21	Grand Total		1376402

How to include columns in your Pivot Table

The reason why most people who are new to **Pivot Tables** struggle to manipulate the **Pivot Tables** is simply because of a lack of understanding regarding the rows and columns

quadrants. We traditionally think of rows as entries that we can read from left to right and columns go up and down. With **Pivot Tables**, things work a little differently.

When you use a row or a column quadrant in **Pivot Tables**, Excel uses the content of those fields to create the row and column labels. This means that if you want to add a column titled "Account Names" and you drag the *Account Names* field to the Columns quadrant, Excel will *not* create one column with the name "Account Names". Instead, Excel will add as many columns as there are entries. Therefore, if you have a table with 55 account names, then Excel will add 55 columns.

The best thing to do if you want to add columns to your **Pivot Tables** is to do the following:

1. Make sure that you *do* want the entries from a specific field to be the column labels. For example, let's say I have 5 employee names (with the names Julie, Joe, Beto, Saul, Bethany). If I add the *Employee Names* field to the column's quadrant, then Excel will add 5 columns, each with the names of the employees.
2. Most likely, the best thing you'll need to do to add (what we would consider) columns, is to add the field in the row quadrant and not the column quadrant. Then, you can easily change the **Report Layout** and it will display as a column.

Example of placing a field in the column's quadrant:

3	Sum of Account Size	Account ID						
4	Sales Manager	00001	00002	00003	00004	00005	00006	00007
5	Bruce Corral			11472		61510		70392
6	Colette Robins		9307					
7	Raul Espinoza	49963						
8	Stacey Nguyen				40902		6613	
9	Grand Total	49963	9307	11472	40902	61510	6613	70392

Example of placing a field in the rows quadrant and using the *Tabular Form* layout:

3	Sales Manager	Account ID	Sum of Account Size
4	Bruce Corral	00003	11472
5		00005	61510
6		00007	70392
7		00010	35915
8		00011	60958
9		00013	56349
10		00018	1352
11		00020	13242
12		00022	48162
13		00025	48802
14		00026	53541
15		00028	25029
16		00031	69992
17		00033	64589
18		00035	45318
19	Bruce Corral Total		666623
20	Colette Robins	00002	9307
21		00009	38015
22		00015	54667

How to Repeat entries in Pivot Tables

When using a different layout, such as the *Tabular Form* layout, Excel will place the fields entries as column labels. However, you may find that some of the rows that have repeating entries will stay blank. This is because **Pivot Tables** try to compact as much information as possible and will either group or just ignore duplicate entries.

The good news is that you can easily repeat the row labels so that your **Pivot Table** looks a lot more like a traditional table.

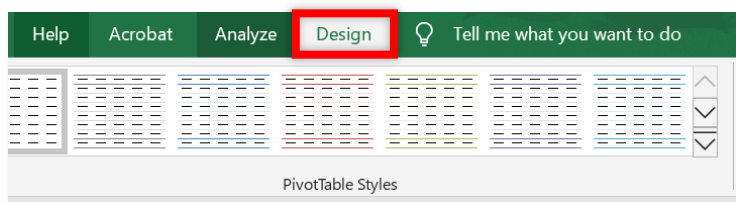
To repeat entries in your **Pivot Table**:

1. Click anywhere inside the **Pivot Table**.

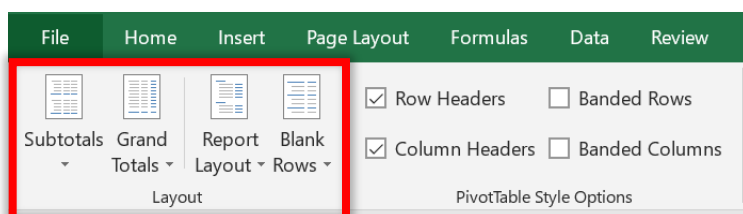
	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	

2. Navigate to the **Design** tab.

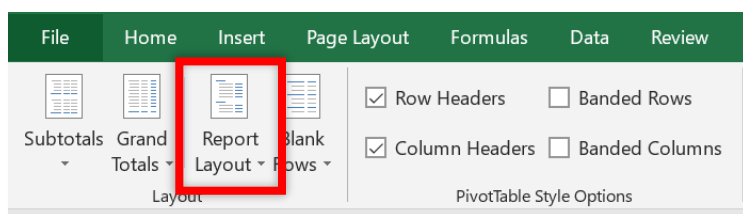
3	Sales Manager	Account ID	Sum of Account Size
4	Bruce Corral	00003	11472
5		00005	61510
6		00007	70392
7		00010	35915
8		00011	60958
9		00013	56349
10		00018	1352
11		00020	13242
12		00022	48162
13		00025	48802
14		00026	53541
15		00028	25029
16		00031	69992
17		00033	64589
18		00035	45318
19	Bruce Corral Total		666623
20	Colette Robins	00002	9307
21		00009	38015
22		00015	54667



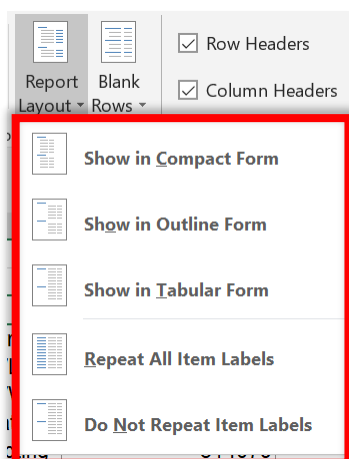
3. Locate the **Layout** group.



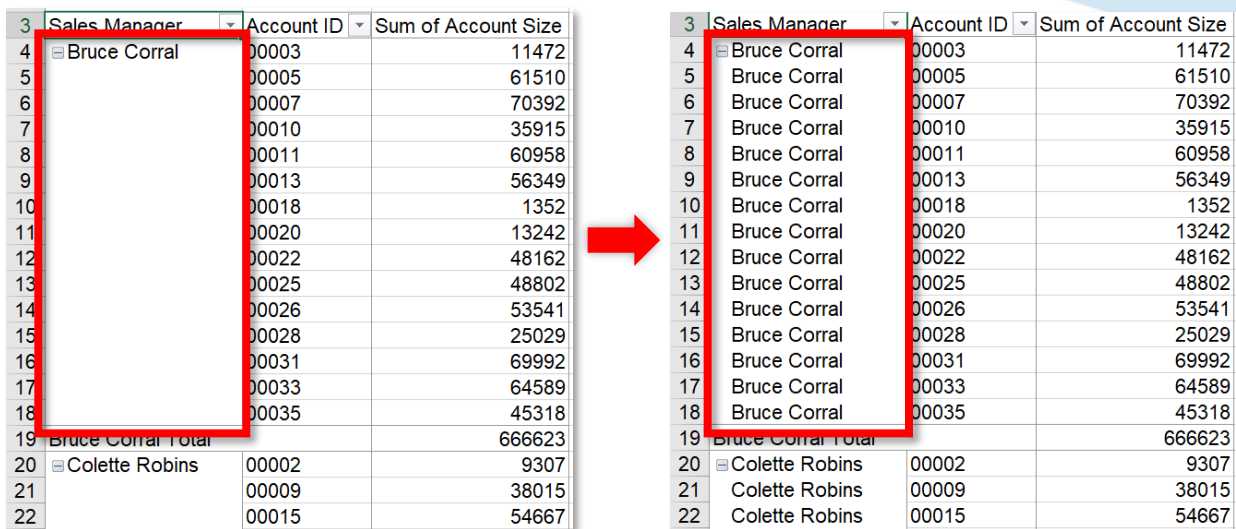
4. Select the **Report Layout** command.



5. In the drop-down menu, select the *Repeat All Item Labels* option.



If done correctly, you'll see that the row labels will repeat.



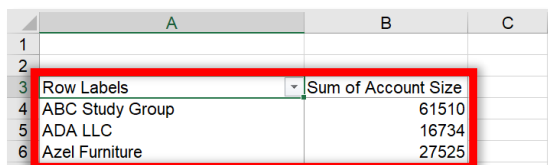
	Sales Manager	Account ID	Sum of Account Size
4	Bruce Corral	00003	11472
5		00005	61510
6		00007	70392
7		00010	35915
8		00011	60958
9		00013	56349
10		00018	1352
11		00020	13242
12		00022	48162
13		00025	48802
14		00026	53541
15		00028	25029
16		00031	69992
17		00033	64589
18		00035	45318
19	Bruce Corral Total		666623
20	Colette Robins	00002	9307
21		00009	38015
22		00015	54667

How to Insert Blank Rows in Pivot Tables

As previously mentioned, **Pivot Tables** are meant to be efficient and save time and space. This is why much of the data looks crammed in some cases. One way to make your **Pivot Tables** look nicer is by using a blank line to separate your data. This feature is helpful when you are analyzing data and you want to clearly dictate where an entry ends.

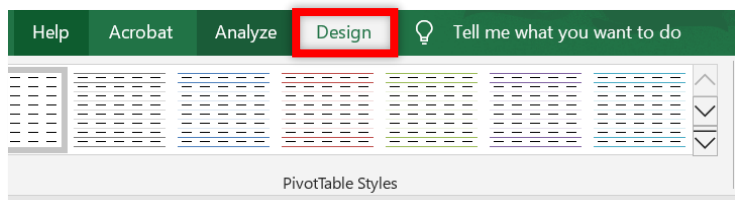
To insert a blank row in your **Pivot Table**:

1. Click anywhere inside the **Pivot Table**.

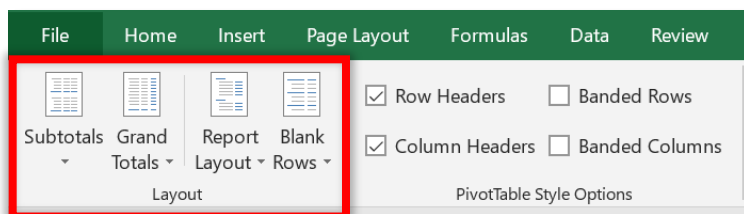


	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	

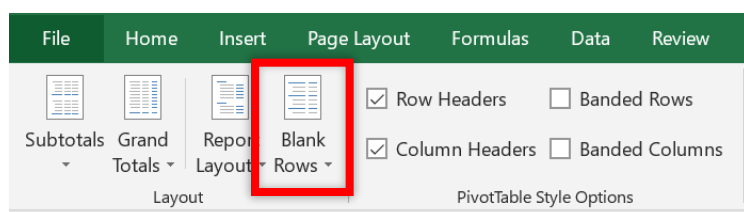
2. Navigate to the **Design** tab.



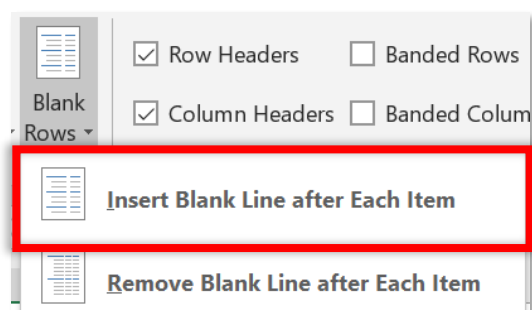
3. Locate the **Layout** group.



4. Select the **Blank Rows** command.



5. In the drop-down menu, select the **Insert Blank Line After Each Item** option.



How to Remove Blank Rows in Pivot Tables

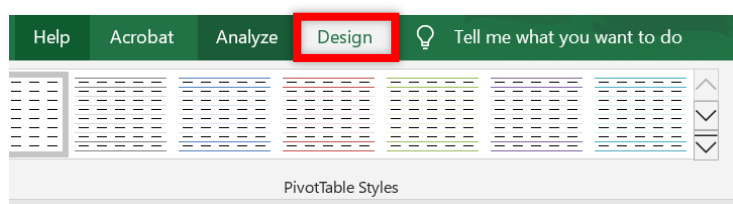
If you added a blank row to separate your items in a **Pivot Table**, you can easily remove it.

To remove blank rows in your **Pivot Table**:

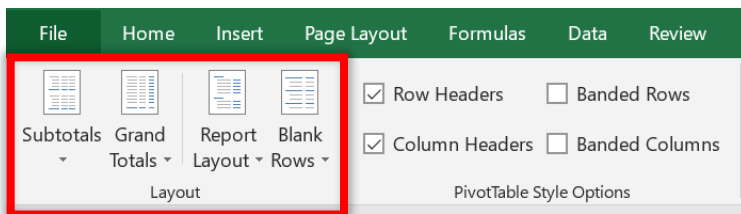
1. Click anywhere inside the **Pivot Table**.

	A	B	C
1			
2			
3	Row Labels	Sum of Account Size	
4	ABC Study Group	61510	
5	ADA LLC	16734	
6	Azel Furniture	27525	

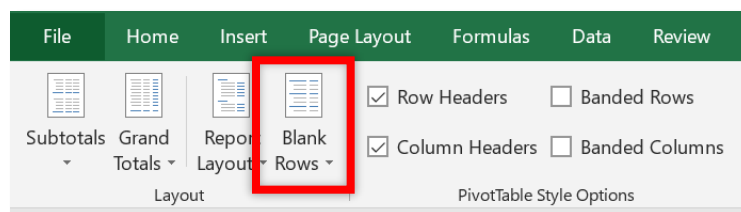
2. Navigate to the **Design** tab.



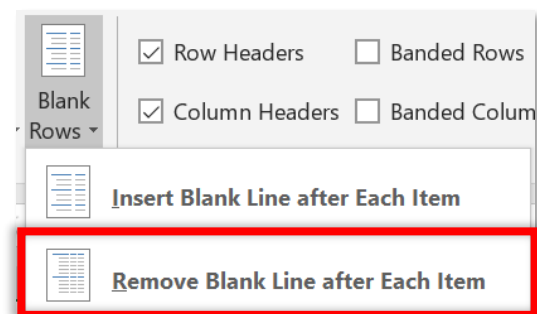
3. Locate the **Layout** group.



4. Select the **Blank Rows** command.



5. In the drop-down menu, select the **Remove Blank Line After Each Item** option.



Slicers

If you find that navigating through a **Pivot Table** is a bit daunting, then you may like using **Slicers**. Before you decide to use **Slicers**, remember, **Slicers** can only be used with specialized tables such as **Pivot Tables**. If you try to add a **Slicer** to a regular data set, it will not work.

What is a Slicer?

A **Slicer** is a filtering tool. It helps filter data in a visually-appealing way. Many people believe that using a **Slicer** is a more efficient way to filter data than using regular filters.

How to add Slicers

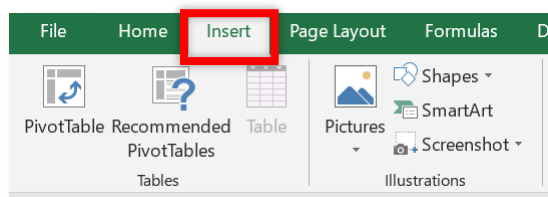
To add a **Slicer**, you'll need to first make sure that you are using a **Pivot Table** or that your data set is formatted as a table. If you're only using a data set then you will not be able to use a **Slicer**. **Slicers** also work with **Pivot Charts** and Cube Functions.

To add a **Slicer**:

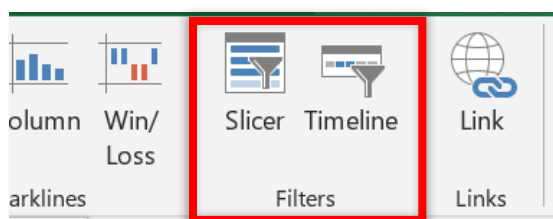
1. Click anywhere inside your table or **Pivot Table**.

	A	B	C	D
1	Customer Name	Address	City	State
2	DOMINGUEZ, BARBARA	764 W. Palm Ave.	Palm Springs	CA
3	Anthony, Rob	2220 E. 7th St.	San Francisco	CA
4	WILLIAMS, DEBON	8910 W. Larkson Ave.	San Mateo	CA
5	Hernandez, Harold	500 Union Parkway	Los Angeles	CA
6	OCHOA, JOSE	19019 Benson St.	Los Angeles	CA

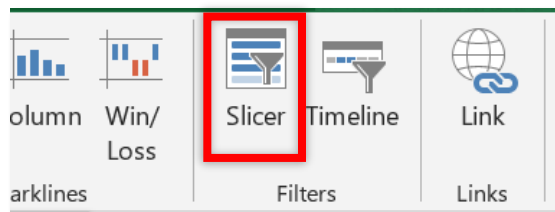
2. Click on the **Insert Tab**.



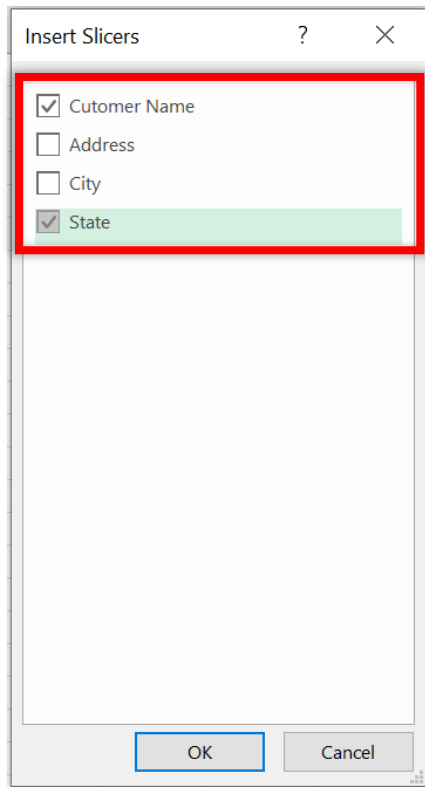
3. Locate the **Filters** group.



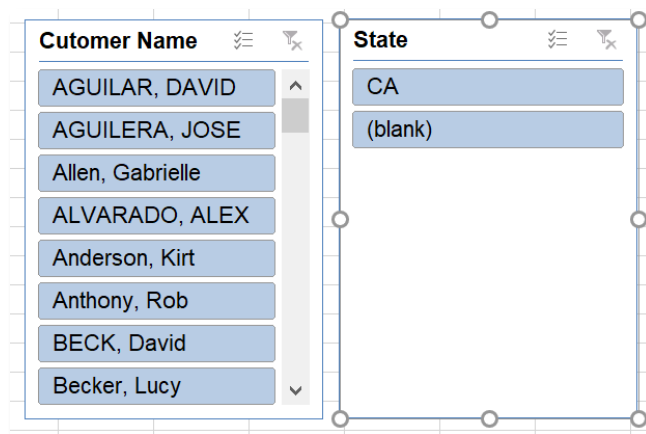
4. Select the **Slicer** command.



5. In the pop-up window, select the columns for which you want to add **Slicers**. Press the **OK** button.



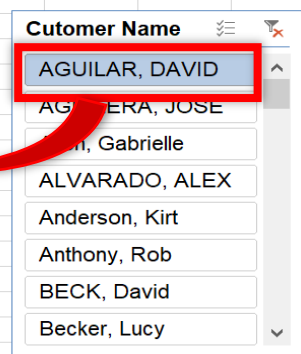
If done correctly, you'll see a list of the columns you selected. These lists are called **Slicers**.



How to use Slicers

After you created a **Slicer**, it is relatively easy to use. Just select an entry to add a filter. As you select entries, you'll witness your table filtering according to what you do in the **Slicers**.

	A	B	C	D	E	F	G	H
1	Customer Name	Address	City	State				
28	AGUILAR, DAVID	7892 Browndie Rd.	San Mateo	CA				
66								
67								
68								
69								
70								
71								
72								
73								
74								
75								
76								
77								
78								
79								
80								



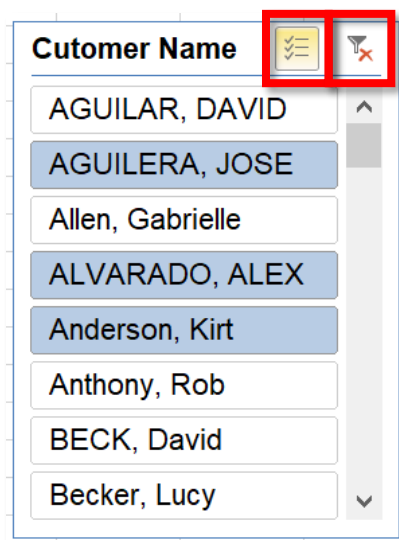
To select more than one entry, use the **Multi-Select** option. When you no longer need to use the **Multi-Select** option, unselect the **Multi-Select** button.

To remove the filters, use the **Clear Filter** command in the upper-right hand corner of the **Slicer**. Remember, making any changes to the filters will also affect your table.

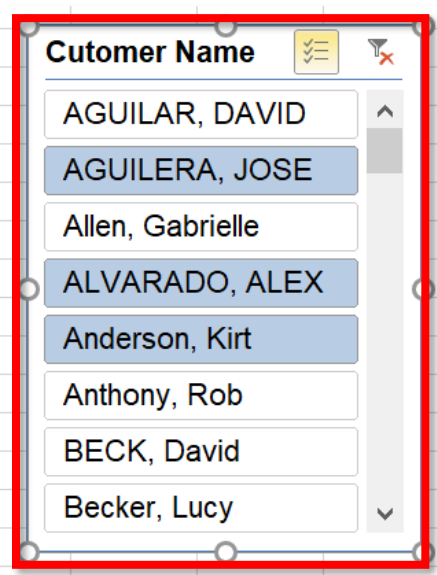
How to remove a Slicer

The easiest way to remove a **Slicer** is to delete it.

To remove a **Slicer**:



1. Select the **Slicer** you want to remove.



2. Press the **Delete** button on your keyboard.

Pivot Charts

If you're comfortable with **Pivot Tables**, then you should be comfortable doing **Pivot Charts**. **Pivot Charts** are visual graphs or tables (such as a Pie Chart or a bar graph) that visually represent the data in your **Pivot Table**. After you've created a **Pivot Table**, the process for creating a **Pivot Chart** is quick and easy.

The Connection between Pivot Charts & Pivot Tables

Pivot Tables provide the data to **Pivot Charts**. Whatever data you include in your **Pivot Table** will also be included in your **Pivot Chart**. However, be very careful when selecting too many fields in your **Pivot Tables**. If you have too many rows and fields displayed in **Pivot Tables**, Excel will try to also display all of those fields in **Pivot Charts** and your **Pivot Charts** will not look presentable or will be useless. Our recommendation is that you stick to two fields in a **Pivot Table** for optimize results in **Pivot Charts**. In some cases, you may include more than three fields.

How to Create a Column Bar-Graph

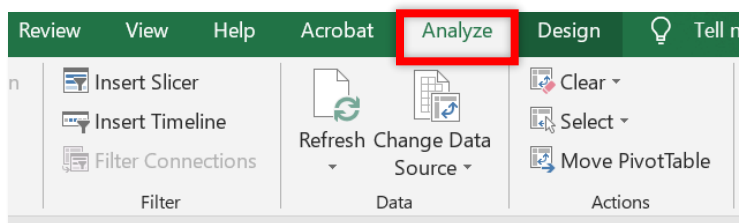
One popular **Pivot Chart** is the **Column Graph**. The **Column Graph** is a bar chart with horizontal columns. This is a great graph to use when comparing data over time or to make a comparison.

To create a **Column Bar Graph**:

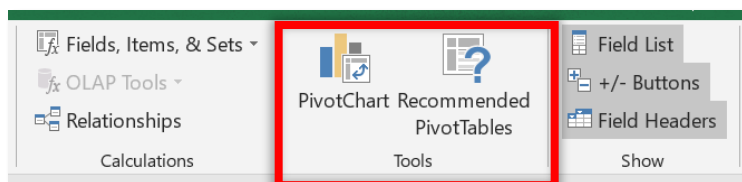
1. Select a cell inside your **Pivot Table**.

3	Row Labels	Count of Employee Name
4	Accounting	8
5	Accounts Payable	7
6	Customer Service	7
7	Operations	7
8	Sales	7
9	Warehouse	8
10	Grand Total	44

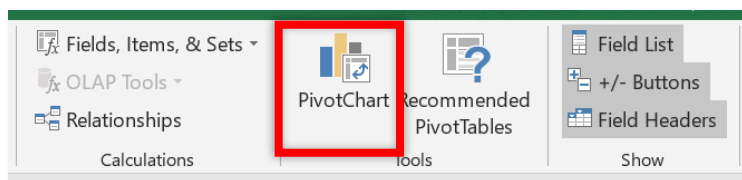
2. Locate the **Analyze** tab.



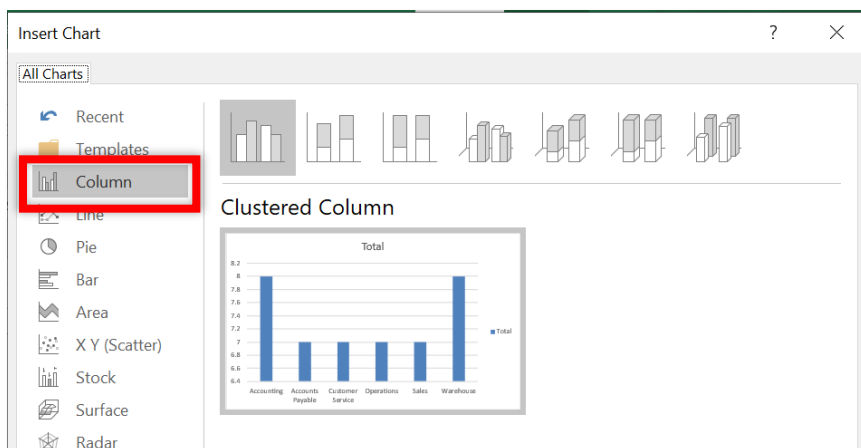
3. Find the **Tools** group.



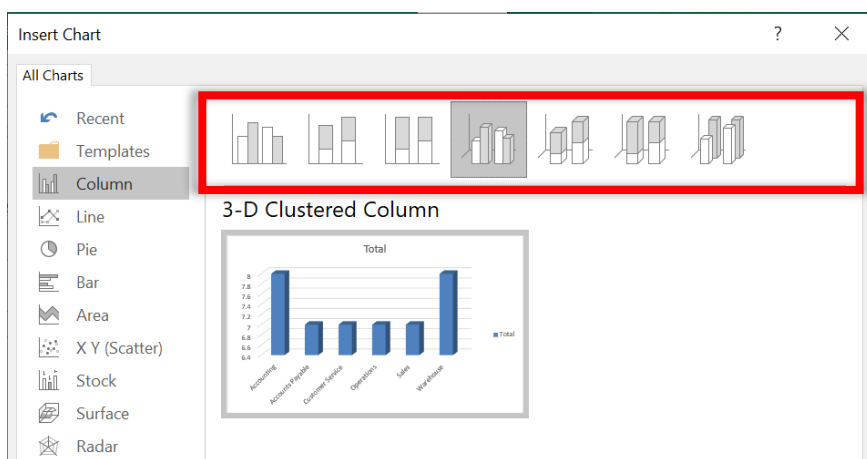
4. Select the **PivotChart** command.



5. In the pop-up window, select the *Column* option from the left side.

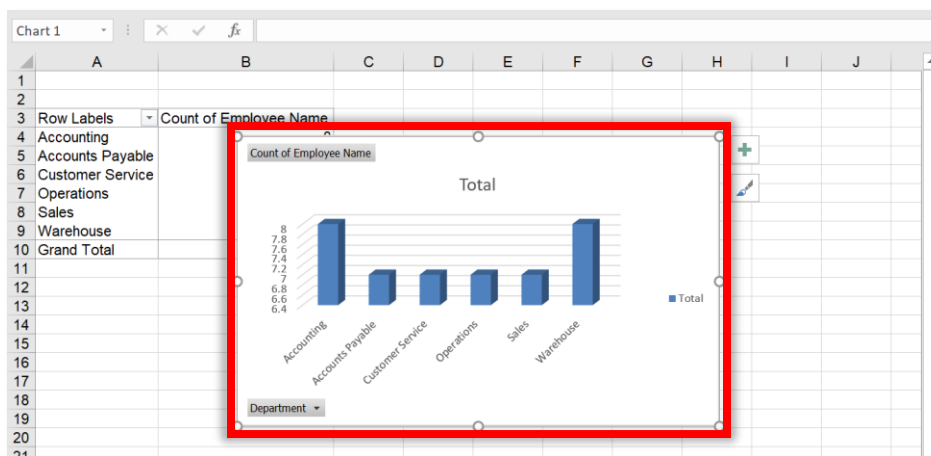


6. Select the type of Column graph you want from the top gallery.



7. Select the **OK** button.

If you followed the steps correctly, you'll find your **Pivot Chart** displayed in your spreadsheet next to the **Pivot Table**.



How to Create a Line Graph

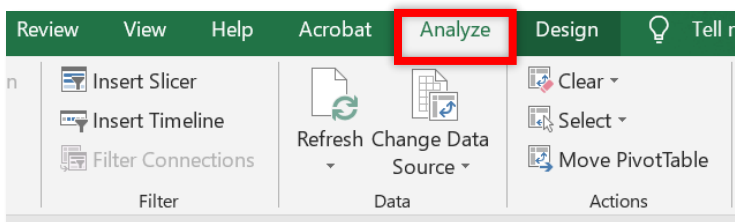
A **Line Graph** is also a very popular **Pivot Chart** because it's very easy to use and is one that most people have used in the past (most likely in school).

To create a **Line Graph**:

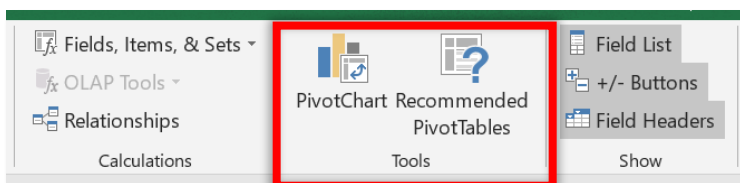
1. Select a cell inside your **Pivot Table**.

3	Row Labels	Count of Employee Name
4	Accounting	8
5	Accounts Payable	7
6	Customer Service	7
7	Operations	7
8	Sales	7
9	Warehouse	8
10	Grand Total	44

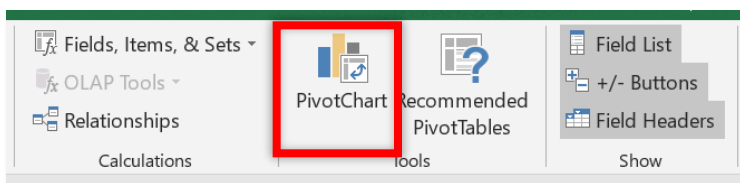
2. Locate the **Analyze** tab.



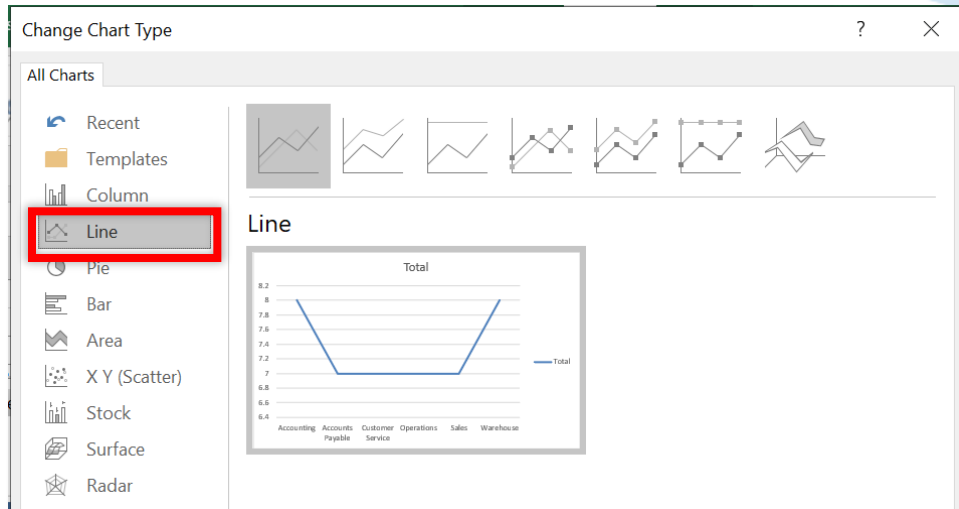
3. Find the **Tools** group.



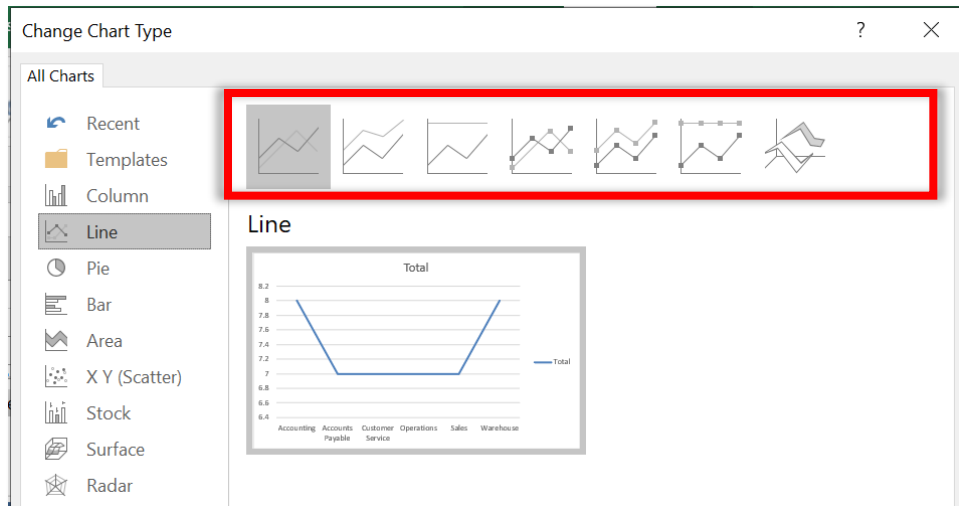
4. Select the **PivotChart** command.



5. In the pop-up window, select the *Line* option from the left side.

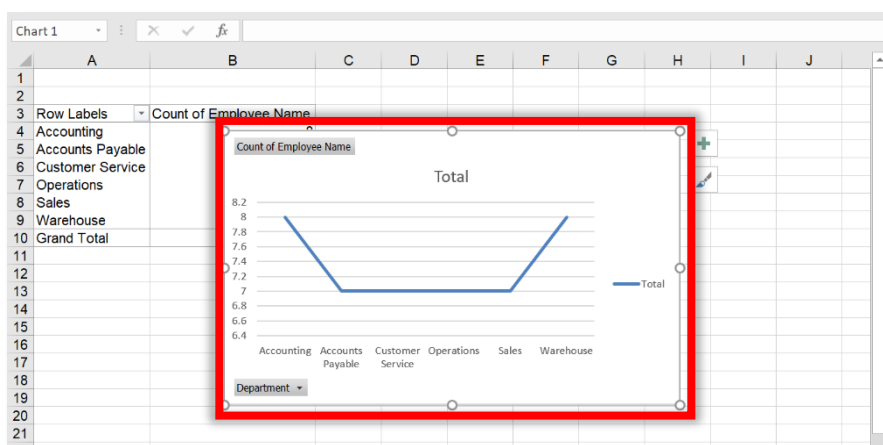


6. Select the type of Line graph you want from the top gallery.



7. Select the **OK** button.

If you followed the steps correctly, you'll find your **Pivot Chart** displayed in your spreadsheet next to the **Pivot Table**.



How to Create a Pie Chart

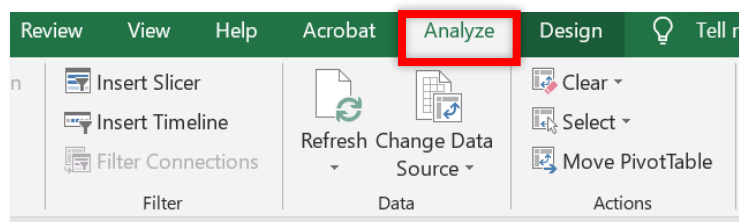
Line graphs and bar charts are great for representing timelines and comparisons. A **Pie Chart**, on the other hand is typically two-dimensional. This is one particular **Pivot Chart** in which you may only want to include two fields in your **Pivot Table**. More than two fields in your **Pivot Table** will not appropriately display in your **Pivot Chart**.

To create a **Pie Chart**:

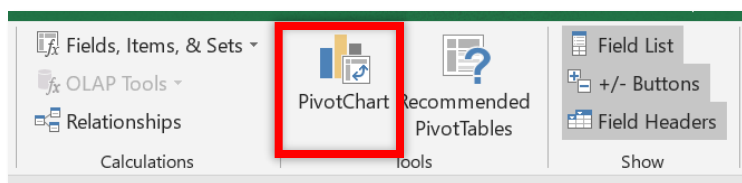
1. Select a cell inside your **Pivot Table**.

3	Row Labels	Count of Employee Name
4	Accounting	8
5	Accounts Payable	7
6	Customer Service	7
7	Operations	7
8	Sales	7
9	Warehouse	8
10	Grand Total	44

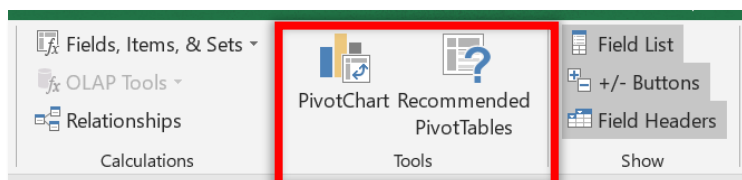
2. Locate the **Analyze** tab.



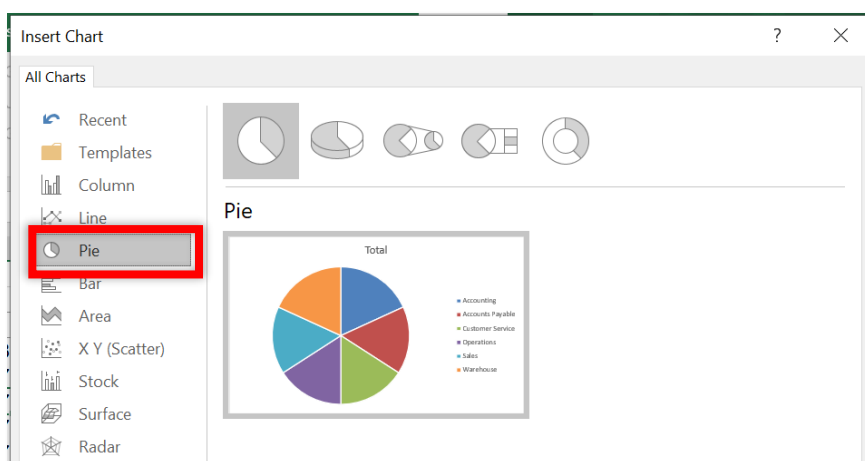
- Find the **Tools** group.



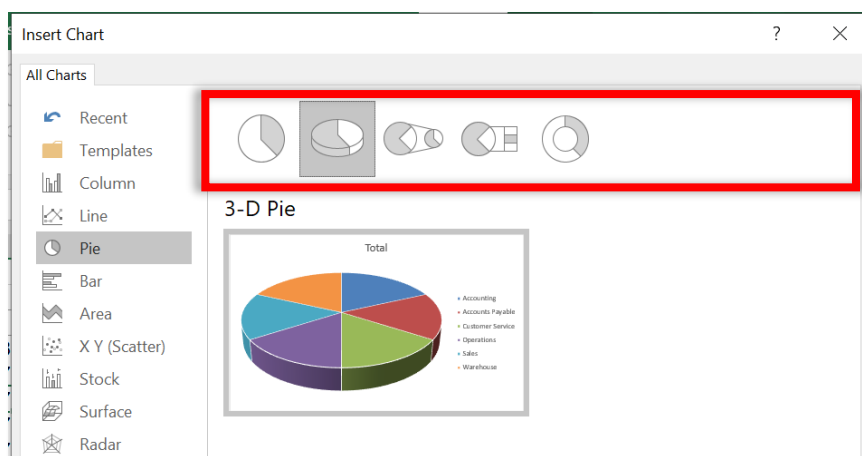
- Select the **PivotChart** command.



- In the pop-up window, select the *Pie* option from the left side.

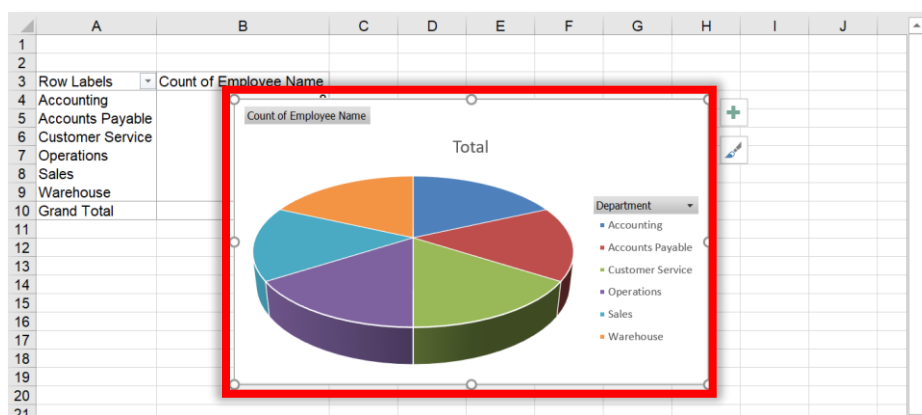


- Select the type of Pie chart you want from the top gallery.



- Select the **OK** button.

If you followed the steps correctly, you'll find your **Pivot Chart** displayed in your spreadsheet next to the **Pivot Table**.

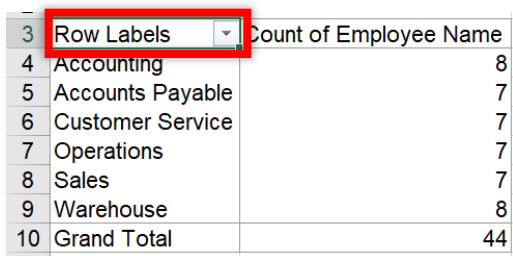


How to Create a Bar Graph

Bar Graphs display vertical bars to help you visually represent a comparison chart, growth or key differences

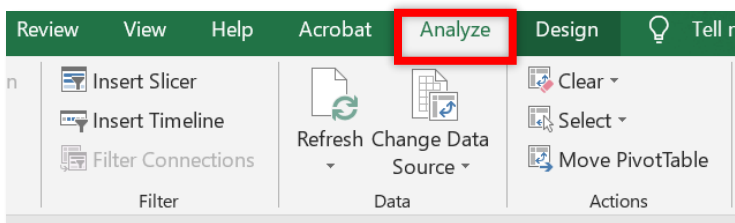
To create a **Bar Graph**:

1. Select a cell inside your **Pivot Table**.

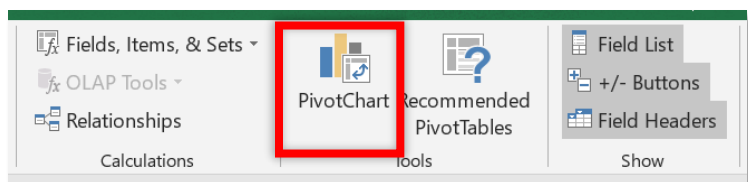


Row Labels	Count of Employee Name
Accounting	8
Accounts Payable	7
Customer Service	7
Operations	7
Sales	7
Warehouse	8
Grand Total	44

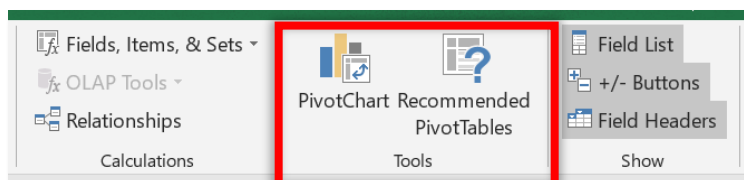
2. Locate the **Analyze** tab.



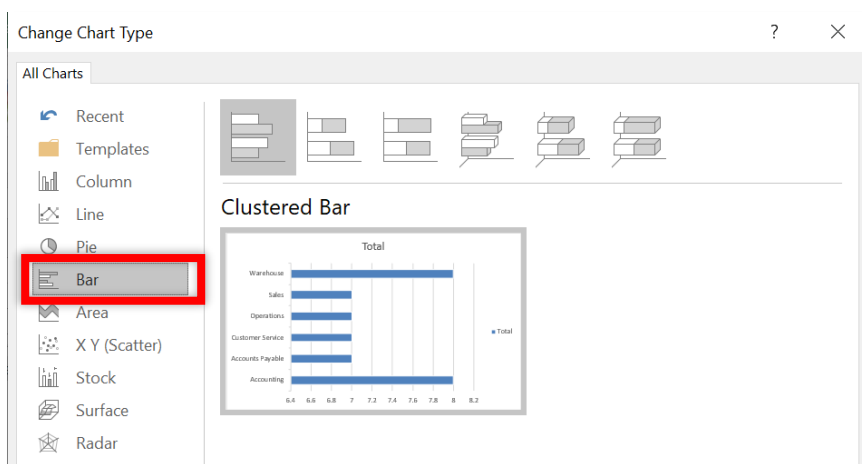
3. Find the **Tools** group.



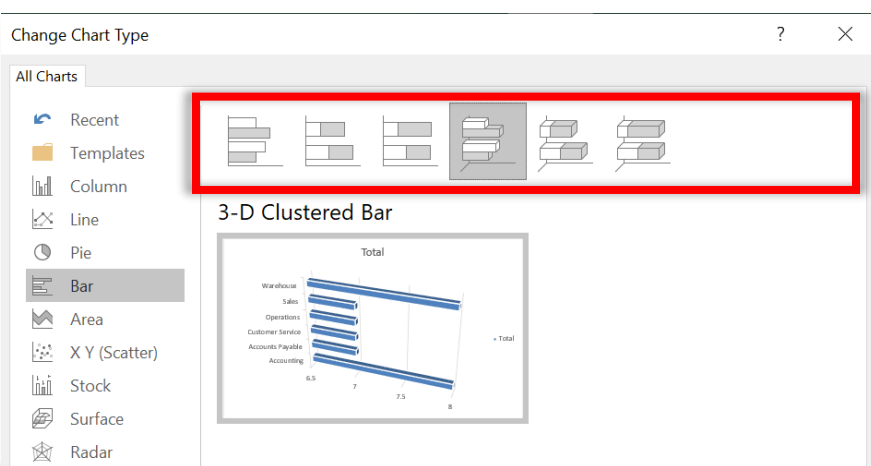
4. Select the **PivotChart** command.



5. In the pop-up window, select the *Bar* option from the left side.

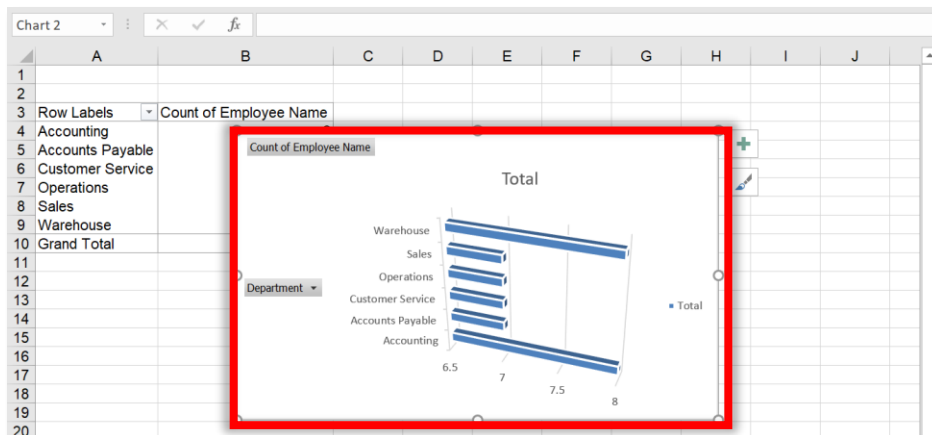


6. Select the type of Bar graph you want from the top gallery.



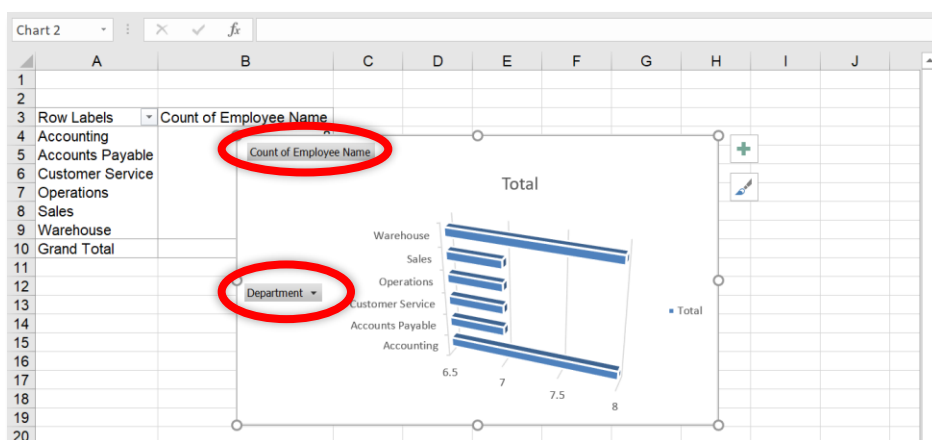
7. Select the **OK** button.

If you followed the steps correctly, you'll find your **Pivot Chart** displayed in your spreadsheet next to the **Pivot Table**.



How to remove the button labels from your Pivot Charts

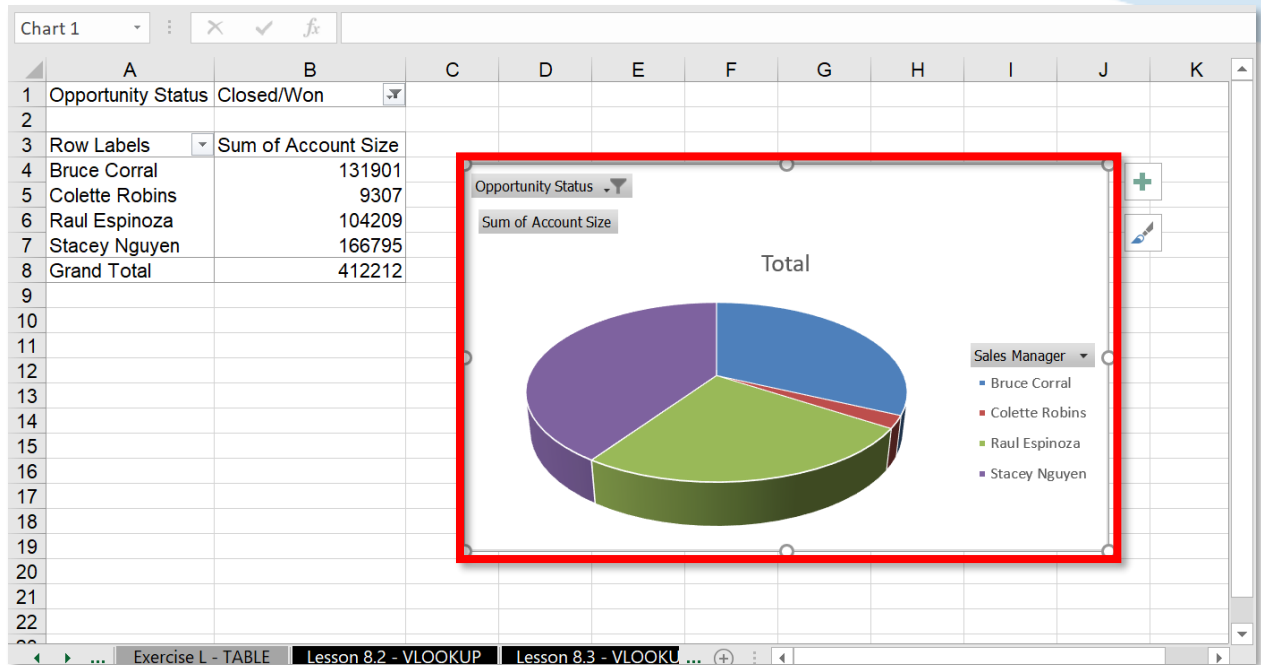
Since **Pivot Tables** feed the information for **Pivot Charts**, some of the **Pivot Table** features are also included in the **Pivot Charts**. For example, the buttons that you typically use in **Pivot Tables** also get transferred to **Pivot Charts** (see image below).



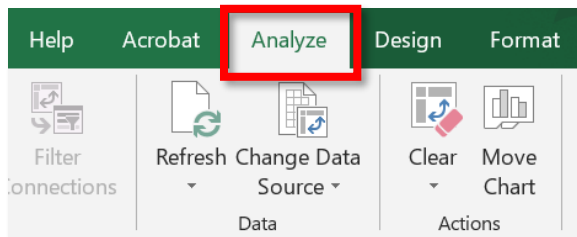
You can easily remove the buttons in **Pivot Charts** without negatively affecting your data.

To remove the button labels from your **Pivot Charts**:

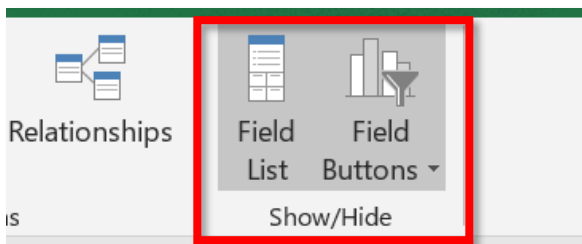
1. Select your **Pivot Chart**



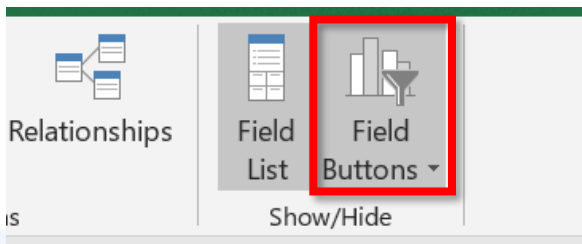
2. Navigate to the **Analyze** tab.



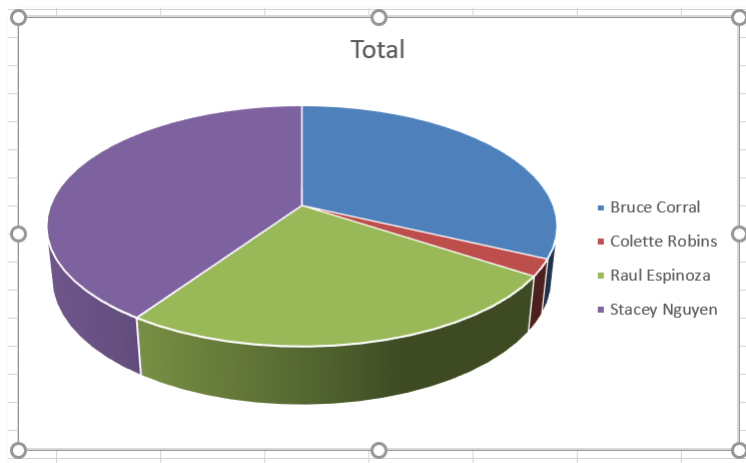
3. Locate the **Show/Hide** group.



4. Unselect the **Field Buttons** command.



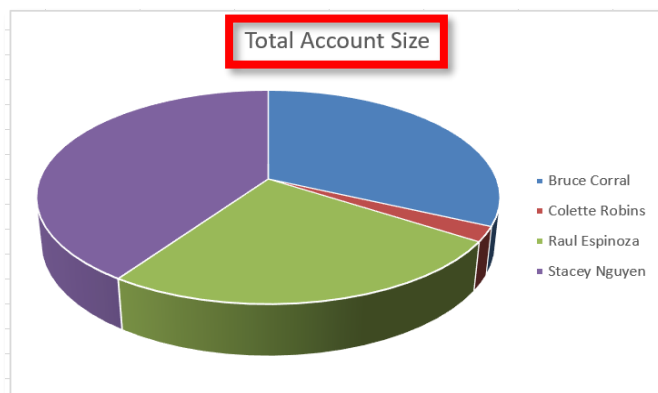
You'll know that you correctly followed these instructions because the **Pivot Chart** will no longer display the button labels. Your **Pivot Chart** may also look larger since it no longer needs to fit the button labels.



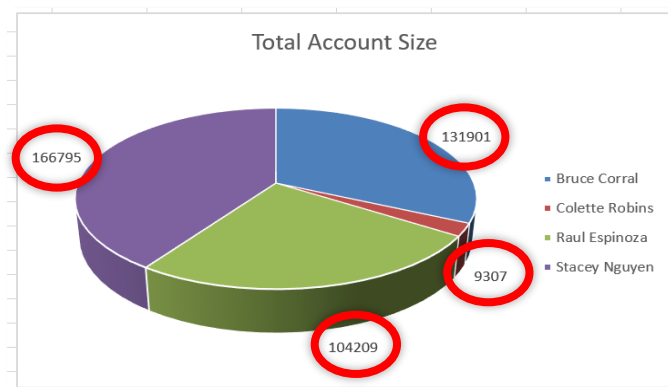
How to add an additional element to your Pivot Chart

The following are examples of elements you can add to your **Pivot Charts**:

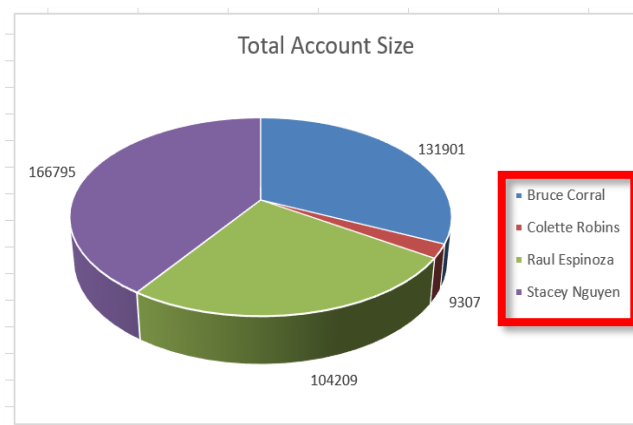
- **Chart Title** – A **Chart Title** allows you to add a title to your **Pivot Chart**.



- **Data Labels** - In order to determine the quantity or qualitative data of a **Pivot Chart**, you can use data labels.

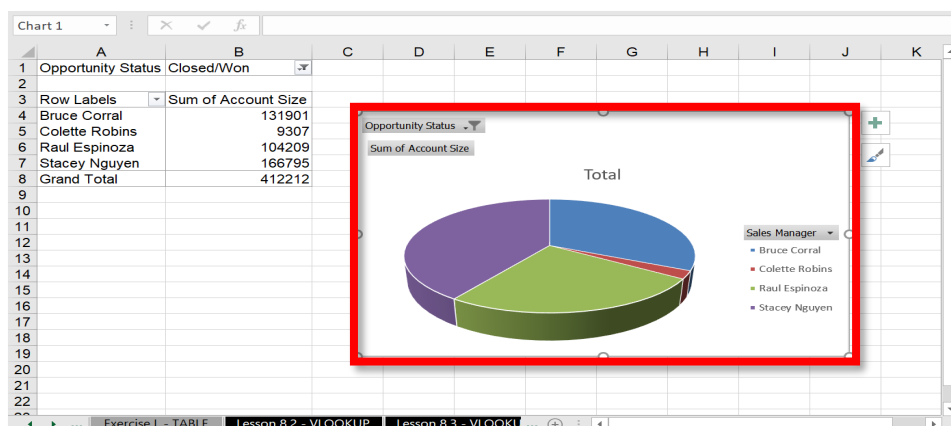


- **Legend** – The legend allows you determine what the colors or symbols represent in a **Pivot Chart**. In **Pivot Charts**, legends can be placed in different locations.

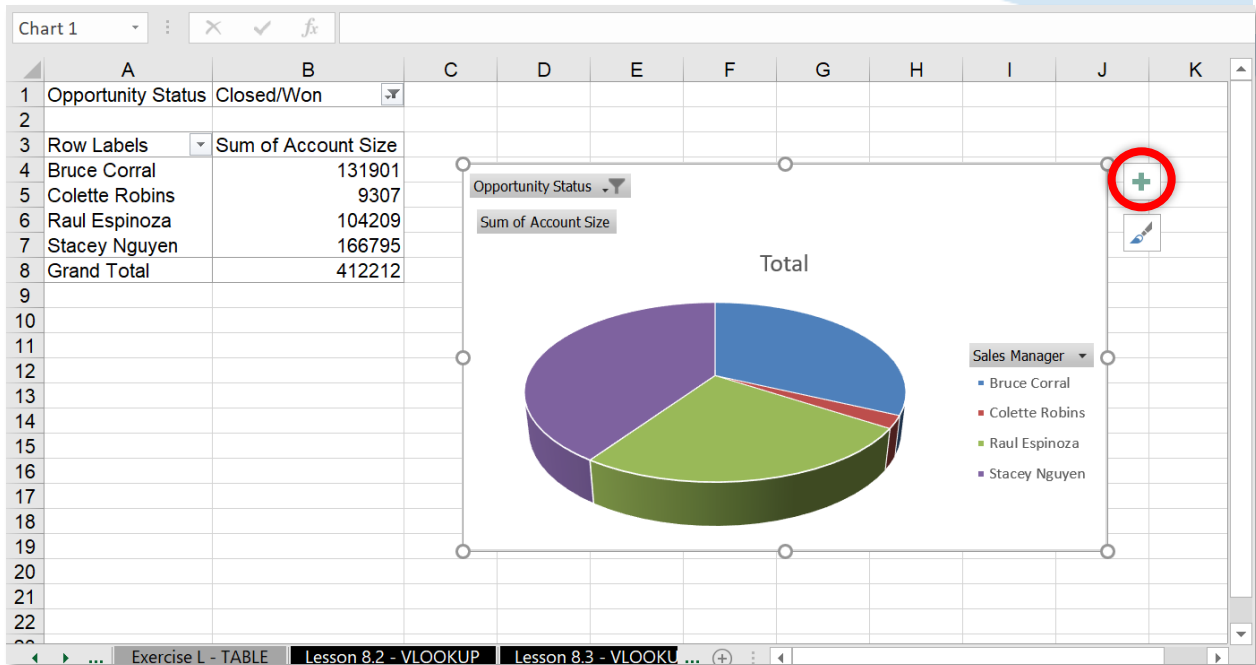


To add a chart element to your **Pivot Charts**:

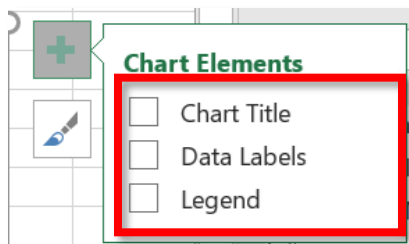
1. Select your **Pivot Chart**



2. In the upper-right hand corner of your **Pivot Chart**, look for a plus sign and click on it.



- Depending on the **Pivot Chart**, some elements may already be included in your chart by default. To add a new element, check the box of the element you want to add.

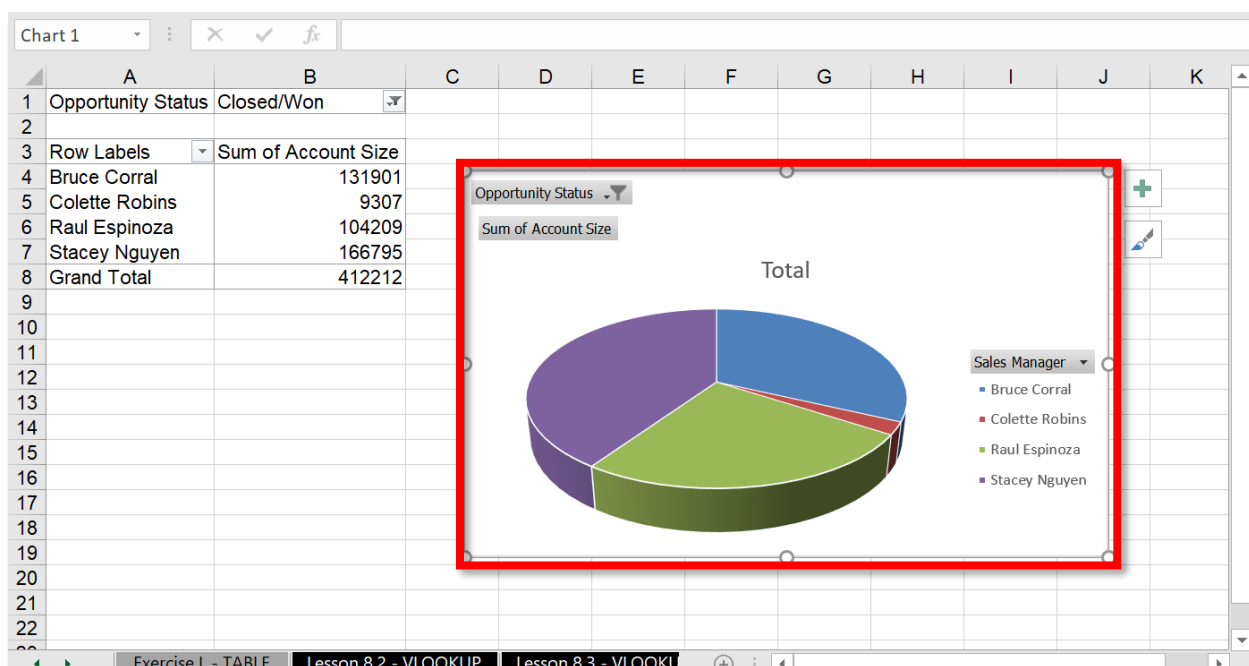


How to change the Layout of your Pivot Chart

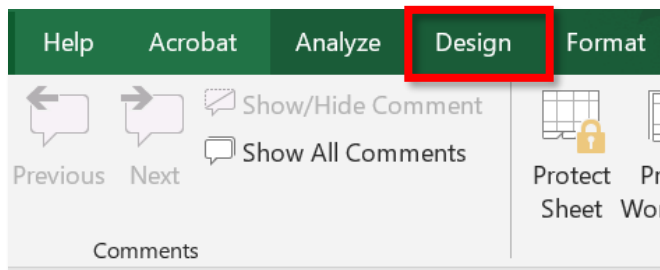
You can heavily customize **Pivot Charts**. However, if you don't have the time to make small edits to your **Pivot Charts**, or if you don't have the time to learn how to change everything, then we recommend that you use the default **Pivot Chart** layouts.

To change the layout of a **Pivot Chart**:

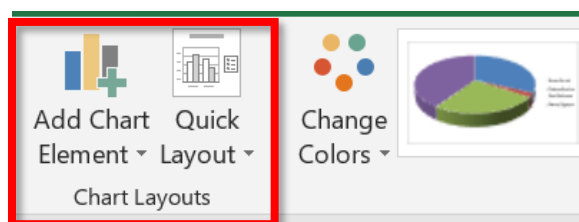
1. Select your **Pivot Chart**



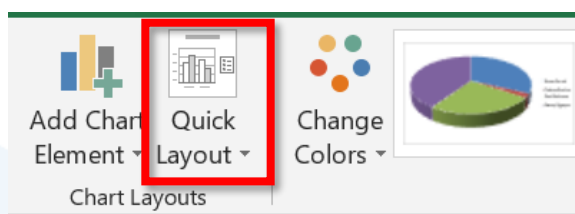
2. Navigate to the **Design** tab.



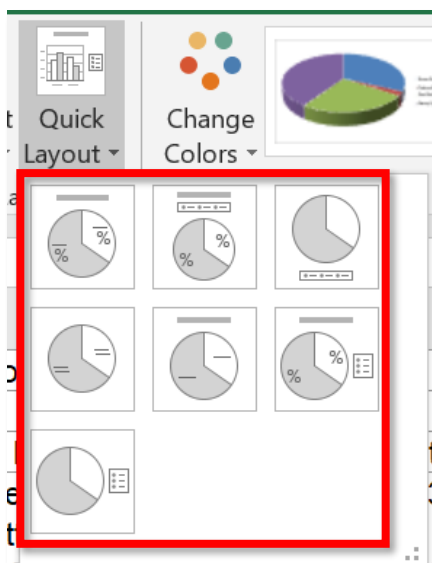
3. Locate the **Chart Layouts** group.



4. Select the **Quick Layout** drop-down menu.



- From the **Quick Layout** gallery, select the layout of your choice.

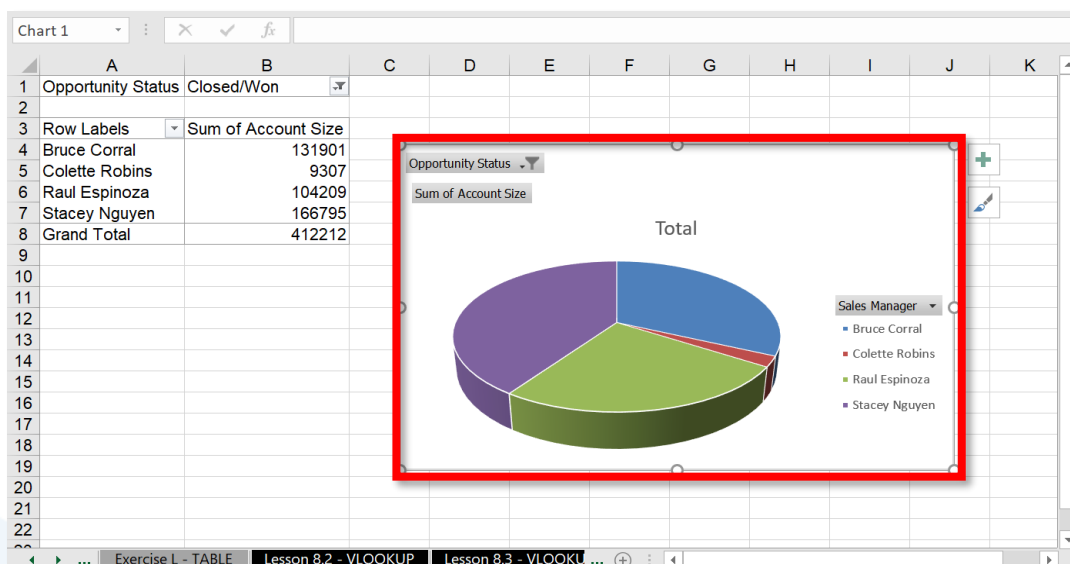


How to change the chart type of your Pivot Chart after you already created a Pivot Chart

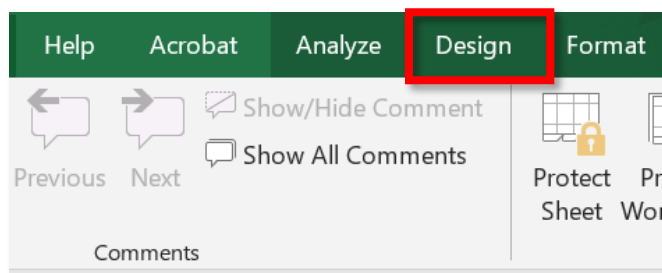
You may run into a situation in which you want to change your **Pivot Chart** completely. Perhaps, you used a pie chart but want to see if a bar graph looks a lot better. Excel makes it easy for you to switch between **Pivot Chart** types.

To change the chart type of your **Pivot Chart**:

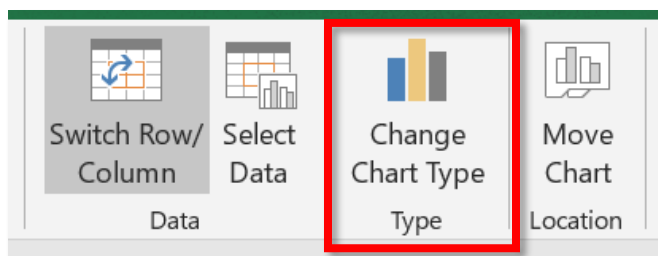
- Select your **Pivot Chart**



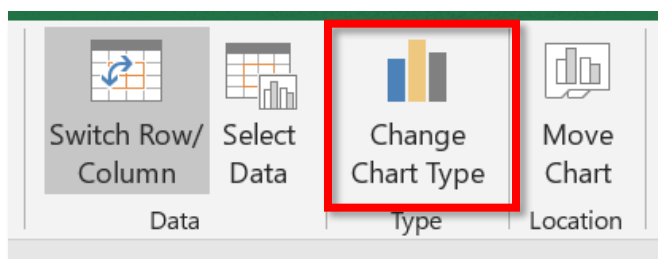
2. Navigate to the **Design** tab.



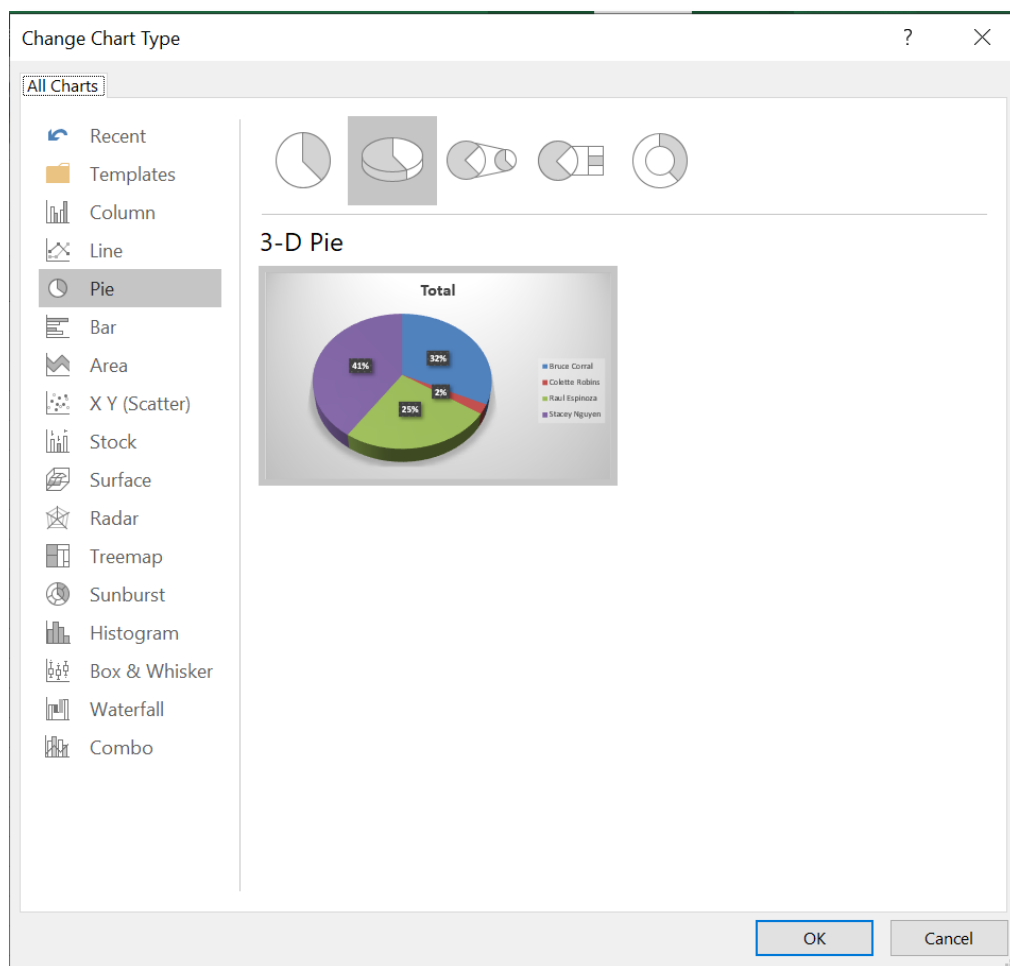
3. Locate the **Type** group.



4. Select the **Change Chart Type** command.



- Choose the **Pivot Chart** of your choice and select the **OK** button.

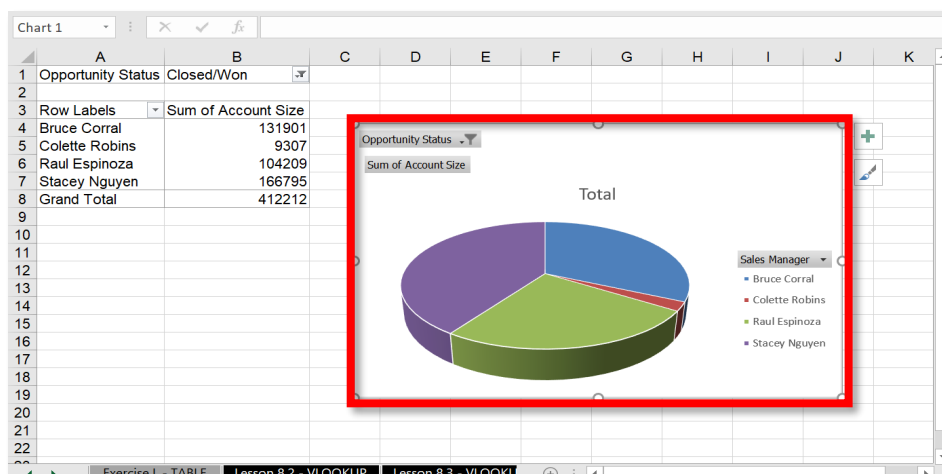


How to quickly change the color scheme of your Pivot Chart

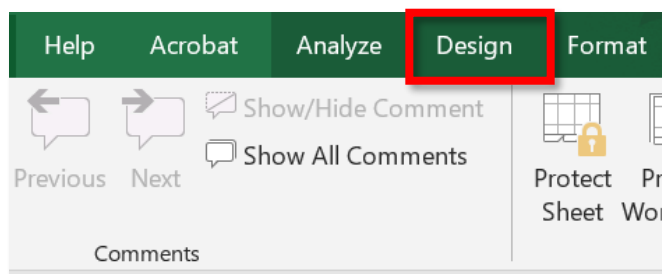
The default options available in Excel to design your **Pivot Charts** are really good. They take the stress out of deciding if your charts will look professional or not.

To quickly change the color scheme of your **Pivot Chart**:

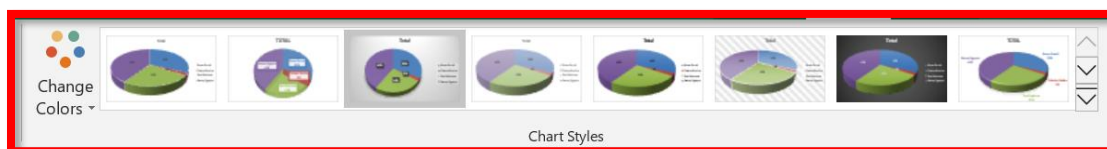
1. Select your **Pivot Chart**



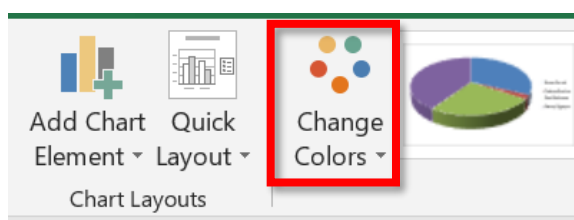
2. Navigate to the **Design** tab.



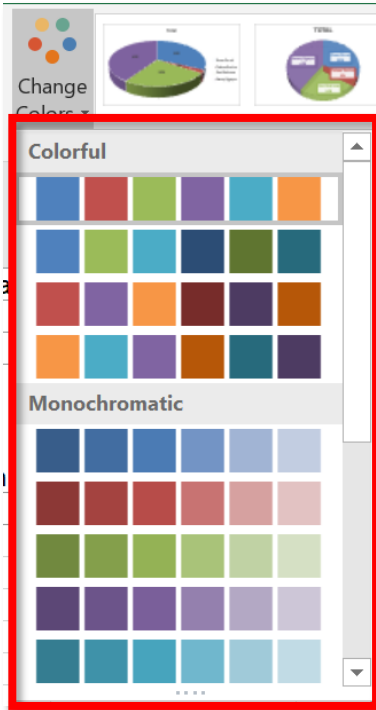
3. Locate the **Chart Styles** group.



4. Select the **Change Colors** drop-down menu.



5. Select the color scheme of your choice from the gallery.

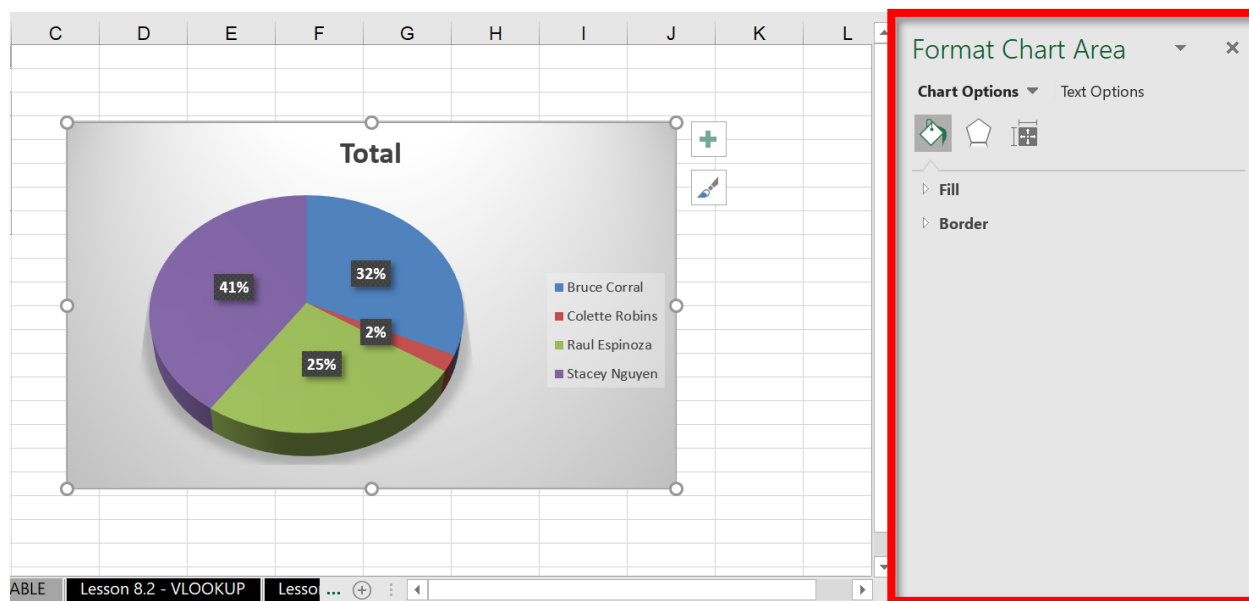


How to customize the Format of your Pivot Chart

There are so many things you can customize in **Pivot Charts**. Although we will not cover all the ways to customize your **Pivot Chart** in this booklet, we want to share with you how you can get to format your **Pivot Chart** in any way that you want. There are basically two things you can do:

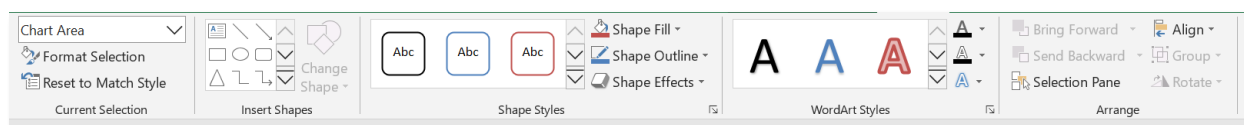
1. Double-click on a section or part of your **Pivot Chart**.
2. Double-click on your **Pivot Chart**.

By double-clicking on an element, section, part or your entire, **Pivot Chart**, Excel will display an area that will allow you to customize many features of your **Pivot Chart**, such as the color of the pie slices, the color of individual bar graphs, add a shadow to your title, etc.



Use the **Format Chart Area** to customize your shapes, colors, border, sizes and text. Depending on where you click in your **Pivot Chart**, this area will update its options to correlate with the area you clicked on.

In earlier versions of Excel, the **Format Chart Area** does not exist. However, you can always make the same format changes in any version of Excel by clicking on the **Pivot Chart** and using the ribbon in the **Format** tab.



Basic Excel Shortcuts

Excel has plenty of shortcuts that can save you some time. Many of these shortcuts are basic keyboard shortcuts that are universally recognized. Please note that the shortcuts listed below are only compatible with Windows.

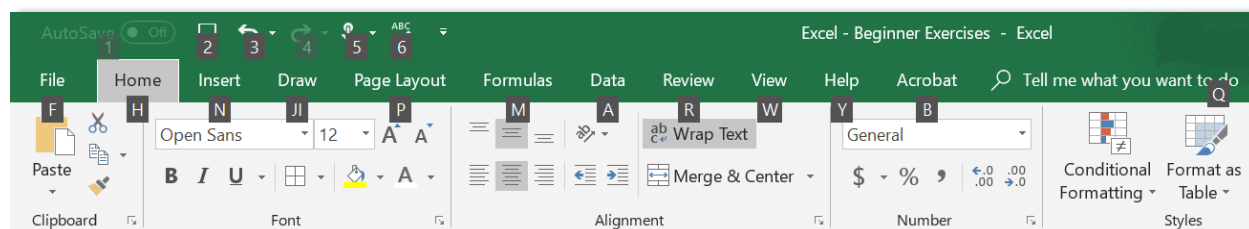
Commonly Used Shortcuts

The table below lists the most commonly used shortcuts. Please note that the command 'CTRL' stands for the 'Control' button located on your keyboard. Additionally, the plus sign signifies the following button to press on your keyboard. For example, 'CTRL + C', means that you'll need to press the 'Control' button and the letter 'C' button on your keyboard.

Shortcut Type	Buttons on your keyboard
<i>Copy</i>	CTRL + C
<i>Paste</i>	CTRL + V
<i>Cut</i>	CTRL + X
<i>Highlight All</i>	CTRL + A
<i>Bold</i>	CTRL + B
<i>Underline</i>	CTRL + U
<i>Italicize</i>	CTRL + I
<i>Find text</i>	CTRL + F
<i>Undo</i>	CTRL + Z
<i>Save a Workbook</i>	CTRL + S
<i>Close a Workbook</i>	CTRL + W
<i>Open a Workbook</i>	CTRL + O
<i>Center align cell contents</i>	ALT + H + A + C
<i>Delete column</i>	ALT + H + D + C
<i>Add borders</i>	ALT + H + B
<i>Hide selected rows</i>	CTRL + 9
<i>Hide selected columns</i>	CTRL + 0

Keyboard Shortcuts for Ribbons

When using any Microsoft Office programs, you can navigate through the different ribbons without using a mouse. The keyboard can be used to navigate through all the ribbons and buttons. The ALT button will display letters that show you which keys will take you to which ribbon or button. For example, after pressing the ALT key on the keyboard, Excel gives me the following options (in the screenshot below). If the 'P' button is pressed, then Excel will display the Page Layout ribbon.



Below are a few shortcuts that will help you navigate through the ribbons and buttons in Excel by using your keyboard.

To do the following...	Buttons on your keyboard
Go to the Home Tab	ALT + H
Go to the Insert Tab	ALT + N
Go to the Draw Tab	ALT + J + I
Go to the Page Layout Tab	ALT + P
Go to the Formulas Tab	ALT + M
Go to the Data Tab	ALT + A
Go to the Review Tab	ALT + R
Go to the View Tab	ALT + W
Go to the Help Tab	ALT + Y

Keyboard Shortcuts for Navigating Through a Spreadsheet

Below are additional shortcuts that you can use to navigate through cells. Unlike most of the previously mentioned shortcuts, most of the following shortcuts are Excel specific.

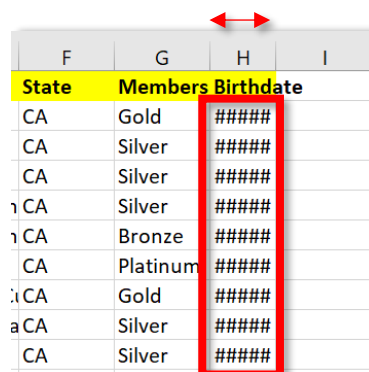
To do the following...	Buttons on your keyboard
<i>Move one cell right in a spreadsheet</i>	Right arrow key
<i>Move one cell left in a spreadsheet</i>	Left arrow key
<i>Move one cell up in a spreadsheet</i>	Up arrow key
<i>Move one cell down in a spreadsheet</i>	Down arrow key
<i>Move one cell right on a spreadsheet (or the next unlocked cell)</i>	Tab key
<i>Move to the last entry of a region</i>	CTRL + Arrow key
<i>Move to the last cell on a spreadsheet</i>	CTRL + End key
<i>Move to the last used cell on a spreadsheet</i>	CTRL + Shift + End key
<i>Move to the top of a spreadsheet</i>	CTRL + Home key
<i>Move one screen down in a spreadsheet</i>	Page Down key
<i>Move one screen to the right in a spreadsheet</i>	ALT + Page Down key
<i>Move one screen up in a spreadsheet</i>	Page Up key
<i>Move one screen to the left in a spreadsheet</i>	ALT + Page Up key
<i>Move to the next spreadsheet in a workbook</i>	CTRL + Page Down key
<i>Move to the previous spreadsheet in a workbook</i>	CTRL + Page Up key

Common Formula Errors in Excel

As you continue to work through formulas and learn how to use more advanced formulas in your Excel journey, you'll at some point encounter error messages. Error messages in Excel usually occur when there is an incorrect digit, or entry in a formula. Excel will then return a message that begins with a pound sign (#). Below is a quick reference guide to common Excel errors you will encounter as a beginning Excel user.

#####

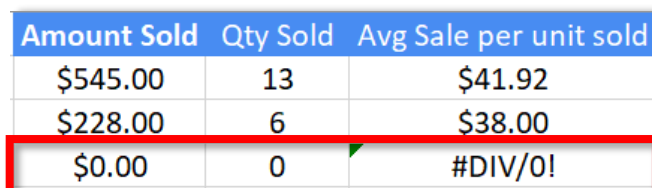
You probably have already seen a cell with a bunch of pound signs inside the cell. You are 100% sure that you never typed those pound signs inside those cells, and you're right. You will encounter a cell filled with pound signs any time that the content of a cell does not fit inside a cell. In other words, you need to make the width of the cell larger because the number inside your cell is too long.



State	Members	Birthdate
CA	Gold	#####
CA	Silver	#####
CA	Silver	#####
CA	Silver	#####
CA	Bronze	#####
CA	Platinum	#####
CA	Gold	#####
CA	Silver	#####
CA	Silver	#####

#DIV/0

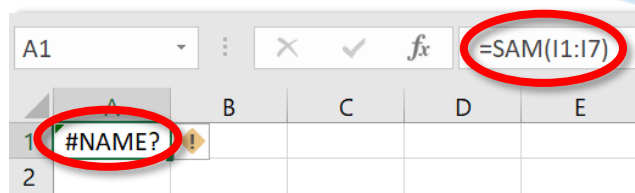
If you recall back to your High School days, you'll remember that in math class you were taught that you cannot divide by 0. Excel knows this too and whenever you try to divide by 0, it will give you the error message #DIV/0. This error message typically occurs when you use a formula to divide but you may have a cell with the entry '0', or a cell that is completely blank. In this instance, Excel will return the error message. If you no longer want to see the error message, you'll have to use a formula like the IFERROR formula so that Excel displays a digit or value you provide. In the screenshot provide, Excel returns a #DIV/0 error because you can't divide 0 by 0.



Amount Sold	Qty Sold	Avg Sale per unit sold
\$545.00	13	\$41.92
\$228.00	6	\$38.00
\$0.00	0	#DIV/0!

#NAME?

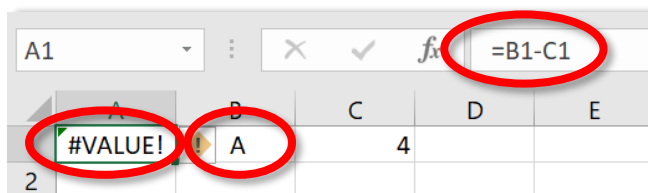
At times, you will encounter the #NAME? error message. This error message typically appears because of a misspelling. When you see the #NAME? message, Excel is telling you that either (1) the name of the formula is wrong (i.e., you accidentally wrote =SAM(I1:I15) instead of =SUM(I1:I15) or (2) there is something wrong with the entries you entered in your formula (which typically happens with more advanced formulas). To correct the #NAME? error message, check your spelling and that every part in your formula was properly written.



	A	B	C	D	E
1	#NAME?				
2					

#VALUE!

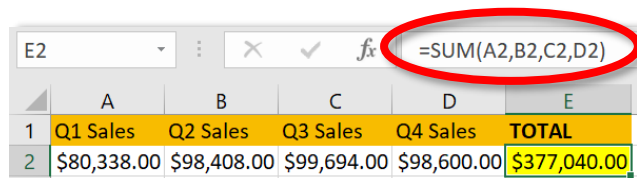
The #VALUE! message typically shows when there is something wrong with the cells that Excel is referencing. The #NAME? occurs when you have an error with your formula, but the #VALUE! error message shows when you have an error somewhere in the cell that you're referencing. For example, let's say that you're trying to add cells together but one of the cells has a space (which is very hard to notice) in front of the number. In this case, Excel will bring up the #VALUE! error message. This error message may also pop up when Excel is referencing a cell where it expects a digit, but there is something else other than a digit in that cell. To correct the #VALUE! formula, make sure to check the cells that are referenced for any misspellings or spaces.



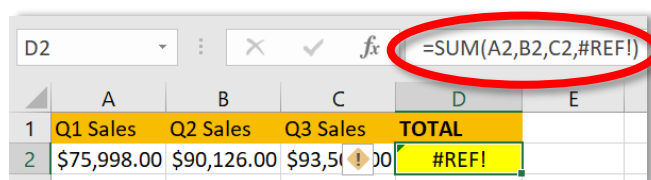
	A	B	C	D	E
1	#VALUE!	A	4		
2					

#REF!

The #REF! error occurs when you have removed a cell that Excel was referencing in one of your formulas. For example, if you use a formula that reads from Cell A4, and later you delete Column A in its entirety, then Excel will show you the #REF! error message because it can no longer reference Cell A4. This error is also common when using formulas that read from other Excel files. As soon as that file that Excel is referencing



	A	B	C	D	E
1	Q1 Sales	Q2 Sales	Q3 Sales	Q4 Sales	TOTAL
2	\$80,338.00	\$98,408.00	\$99,694.00	\$98,600.00	\$377,040.00



	A	B	C	D	E
1	Q1 Sales	Q2 Sales	Q3 Sales	TOTAL	
2	\$75,998.00	\$90,126.00	\$93,510.00	#REF!	

goes away, you may get a #REF! error message. To fix this error message, you can get rid of your formula by copying/pasting special values or add the sheet from another file to your current Excel file so that they are in the same workbook.