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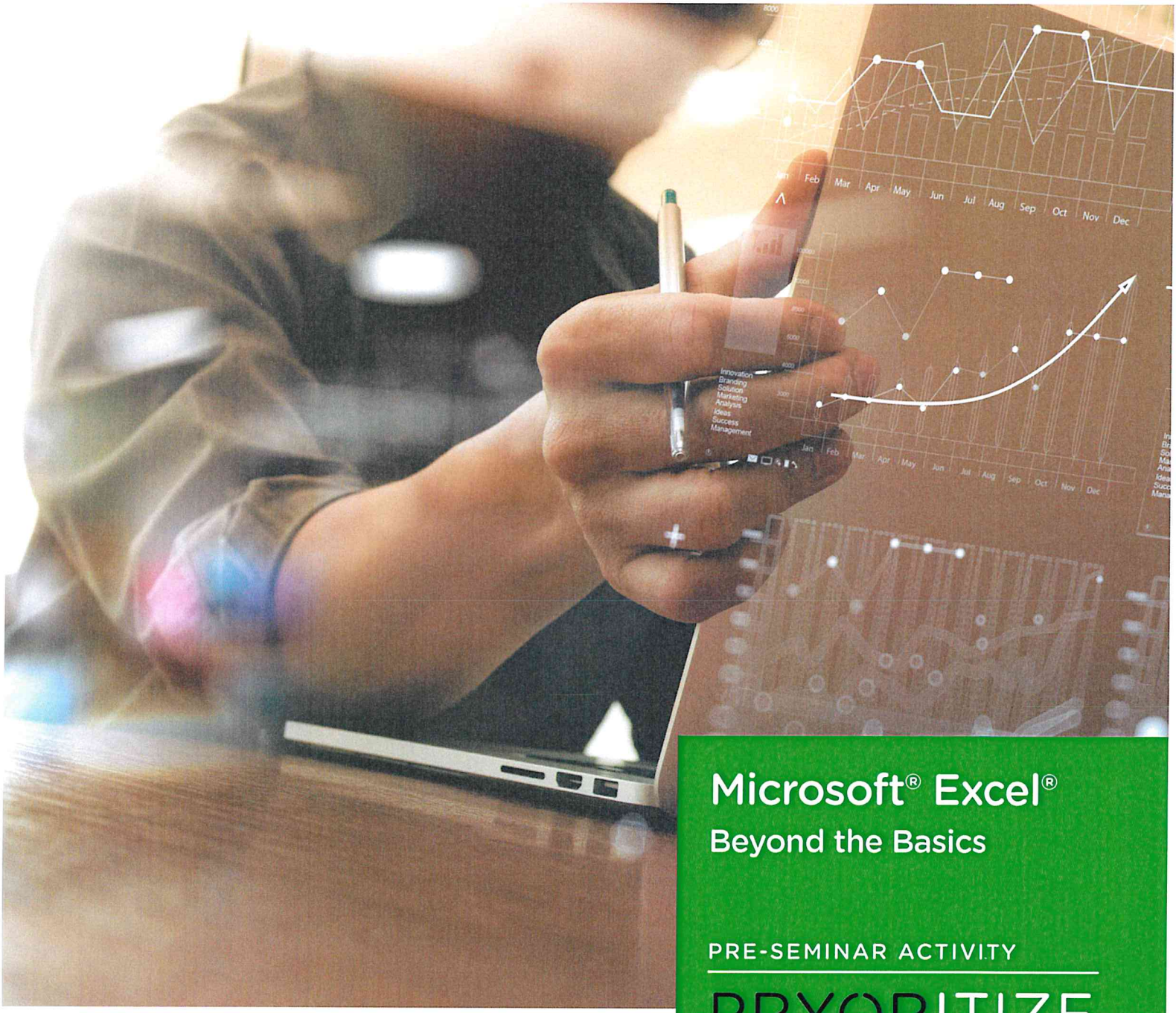
FRED PRYOR SEMINARS
CAREERTRACK



Microsoft® Excel®
Beyond the Basics

PRE-SEMINAR ACTIVITY

PRYORITIZE LEARNING.

HY71807A

PRE-WORK PAGE

Getting Ready

What Are Your Excel Challenges?

1. Check all that apply

2. Rank the checked challenges from most to least important.

- ☐ Perform common tasks in the most efficient way _____
- ☐ Making mistakes in formulas by getting the cell references wrong _____
- ☐ Getting stuck when creating formulas based only on data that meets specific criteria _____
- ☐ Interpreting data visually without creating complicated charts and filters _____
- ☐ Editing data from external sources that isn't formatted correctly for the task's needs _____
- ☐ Understanding PivotTables – when they are useful and how to set them up _____
- ☐ Making Excel's default charts look good enough to share _____
- ☐ Workbooks shared with colleagues keep getting corrupted with bad data and accidental changes _____
- ☐ Unfamiliar with Excel's functions that would be very useful _____
- ☐ Not using Macros to their full potential in Excel _____

Set Goals

On a scale of 1-10, what is your current comfort level with Excel? _____

What are the one or two skills you most hope to learn (or challenges you hope to overcome) to increase your comfort level?

Understanding that this is an entry-level seminar, on a scale of 1-10, where do you hope to be at the end of the day? _____

PRE-WORK PAGE

Get the Most Out of Your Seminar

Gather Data

What work do you usually do in Excel®? (Example: mail merges, recording sales and calculating profits, charting trends, etc.)

How do you usually get your data into Excel?

A. Type it in one cell at a time

B. Receive complete workbooks from source (such as a bank account export or colleague)

C. Import data from external source (such as a shared database or website)

D. Copy/Paste from source

E. Other: _____

Things to Bring

Do you often leave a seminar and on the drive home think "Rats! I meant to write down the instructor's tips about printing?" Try bringing specific questions and example "problems" to keep in mind as you participate so you won't miss or forget an important tip you were looking for. Consider bringing one or more of the following:

- One or two pages of an existing Excel worksheet that you would like to improve
- A calculation that you are having trouble with (example: how to calculate bonus amounts based on the salesperson's quota level)
- A series of steps you repeat frequently (example: highlight cells, bold text, change number format to %)
- A list of questions you will be listening for answers to (example: How do I create a PivotChart from an existing PivotTable?)

Identify and write down solutions to your example problems during the seminar.

PRE-WORK PAGE

Familiarize Yourself with Excel®'s User Interface

Though this is a "hands-off" course, you will be spending a lot of time immersed in Excel®'s user interface at the guidance of your experienced instructor. The more familiar you are with Excel's main tabs and ribbons, the more you will get out of the details that are presented.

- **Get to know the Data tab –** A lot of work in this seminar will take place on the **Data** tab. Open any workbook, click **Data** and spend some time looking at the commands in each group. Even if you do not yet know what the commands do, being familiar with where they are will benefit you during your seminar day.

- **Review charts –** Open any workbook with data and create a few default charts just to familiarize yourself with the types available and the kinds of edits you would like to learn how to make.

- **Browse functions -** Click on **fx** beside the formula bar to open the **Insert Function** dialog.
  - Change the category in the dropdown menu to view lists of functions in each category
  - Select a few functions and click "**OK**" to view their **Function Arguments**.

  Even though you will look in depth at only a few of Excel's hundreds of functions during the seminar, it will be valuable to be familiar with the kinds of functions that are available and the kinds of arguments that you may see.

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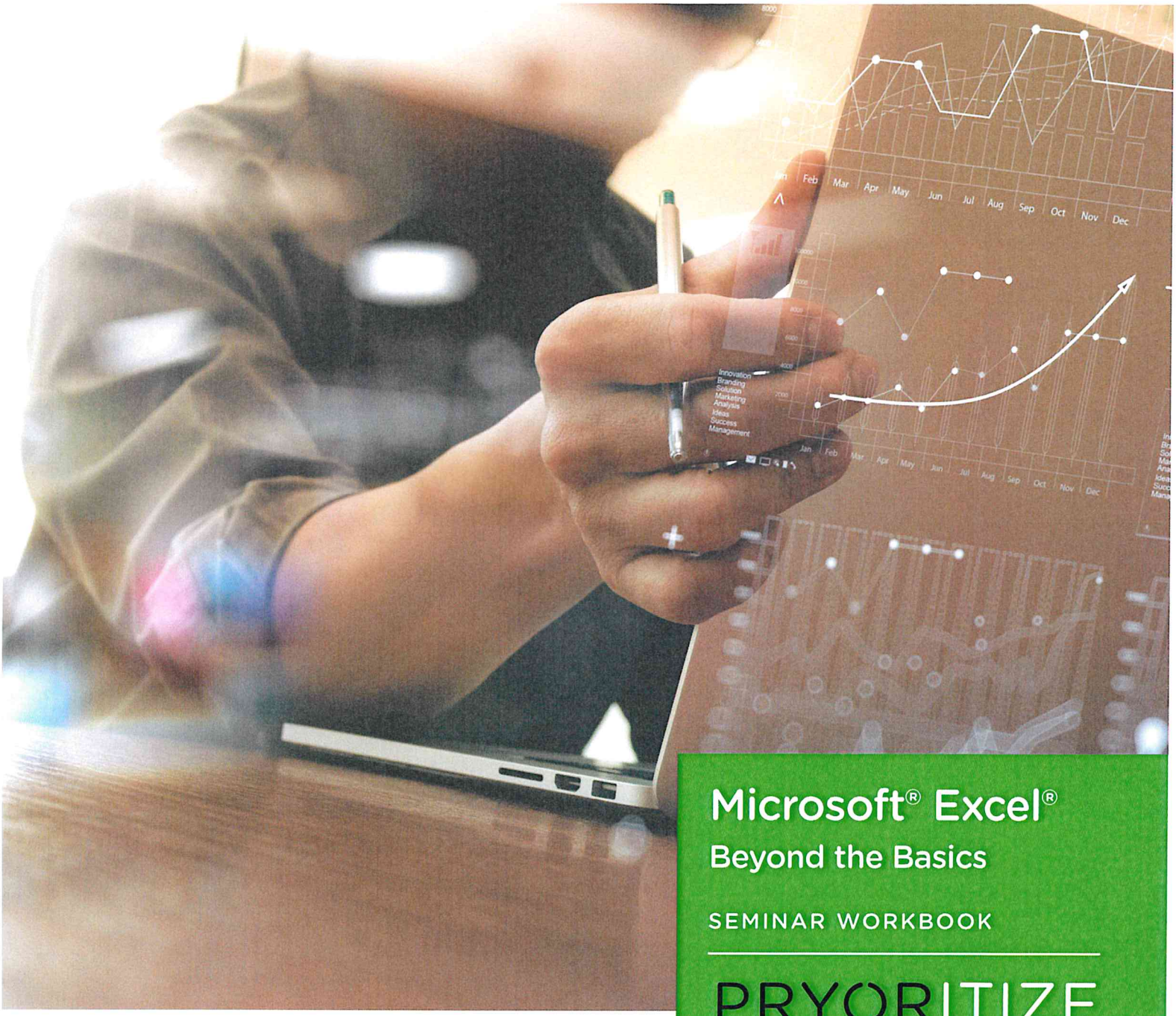

Microsoft® Excel®

Beyond the Basics

SEMINAR WORKBOOK

PRYORITIZE LEARNING.

PRYORITZE YOUR COMPUTER SKILLS

Microsoft Excel - Beyond the Basics

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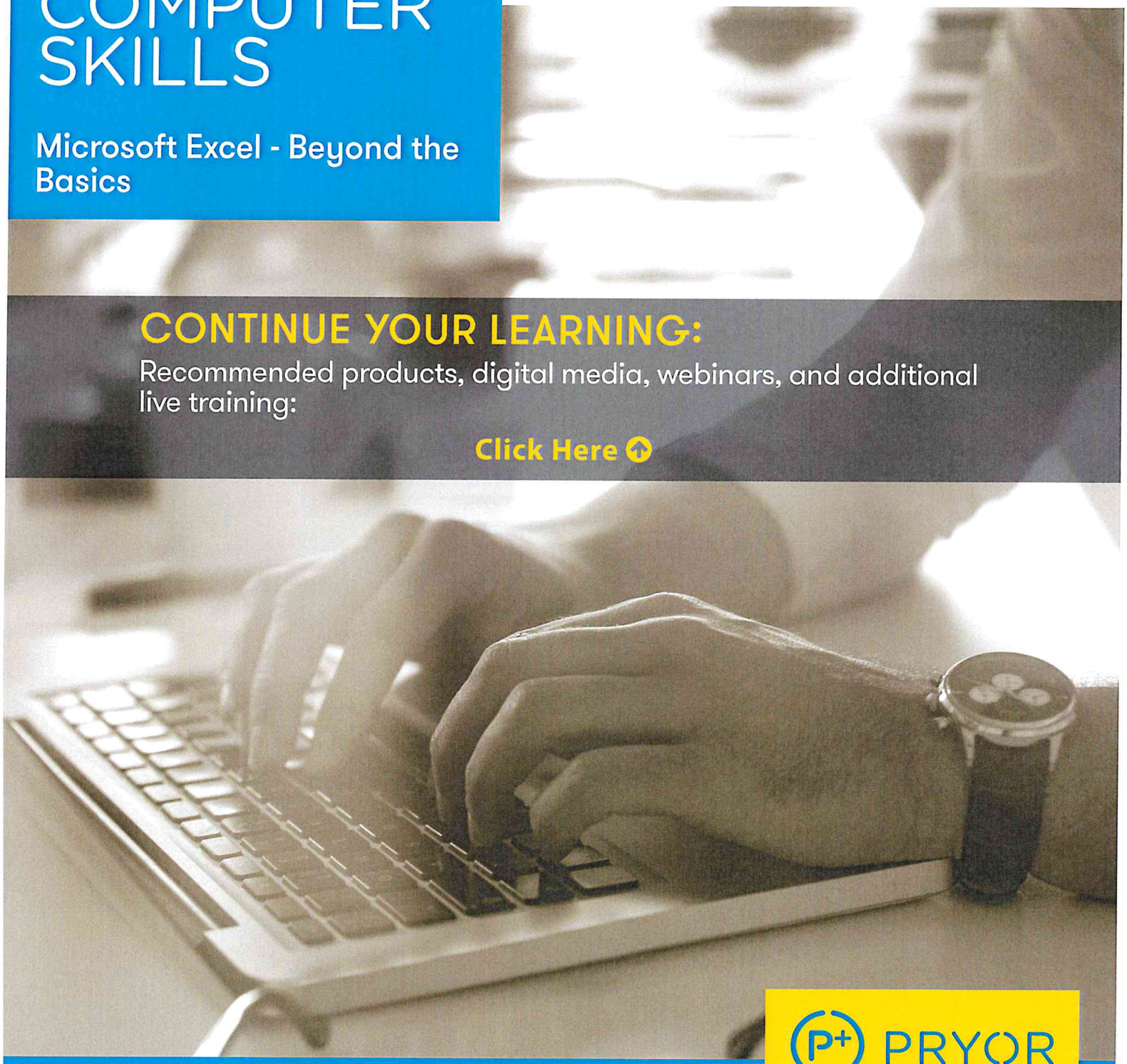

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Beyond the Basics

SEMINAR WORKBOOK

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NAME

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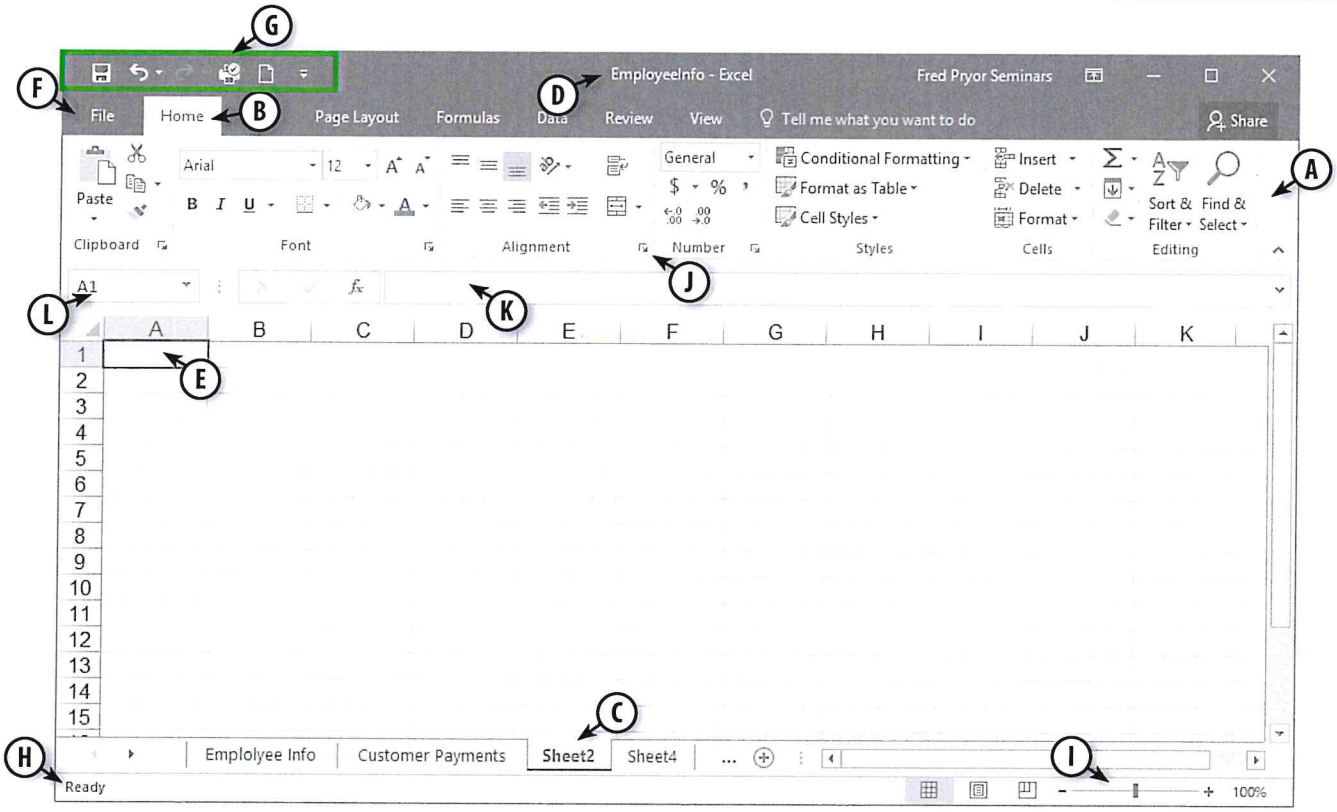
Course Goals

Specific Topics I Would Like to Learn About Today:

Table of Contents

Review - Elements of the Excel Window

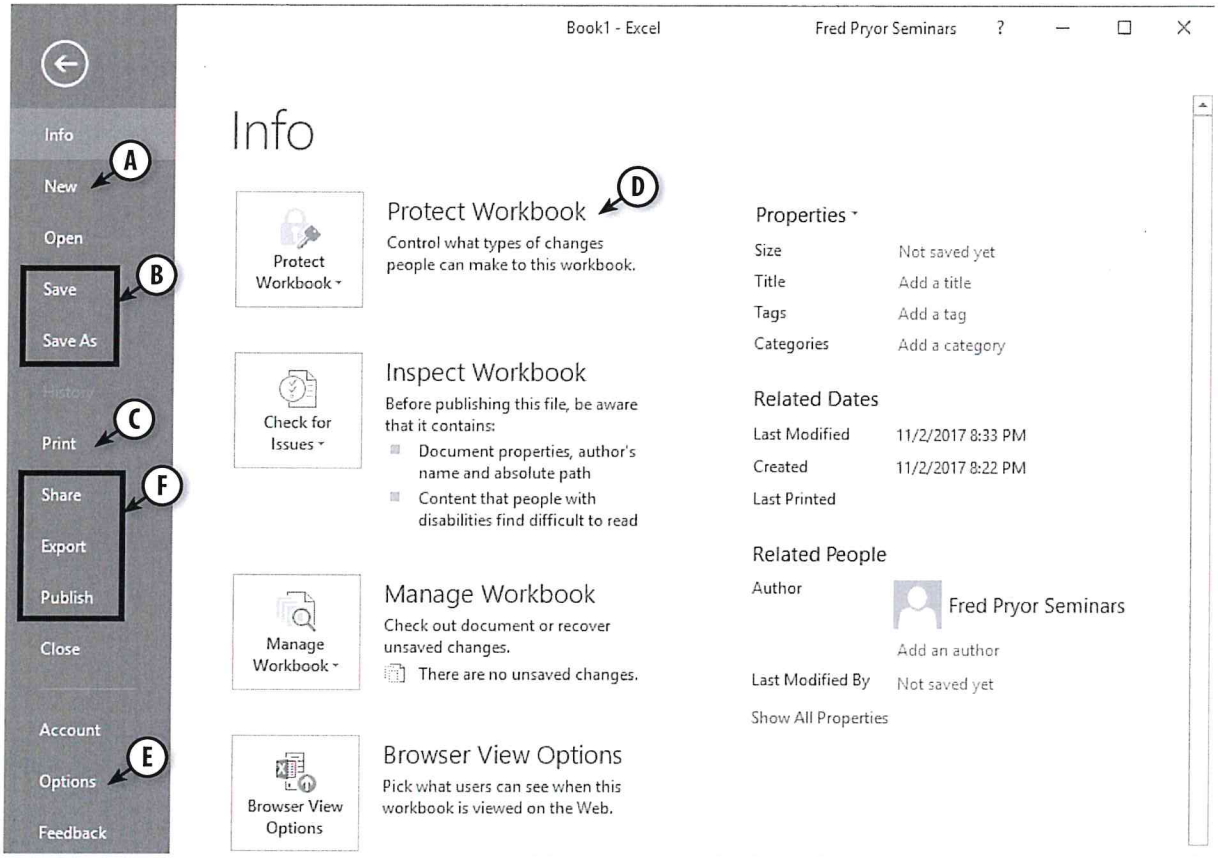


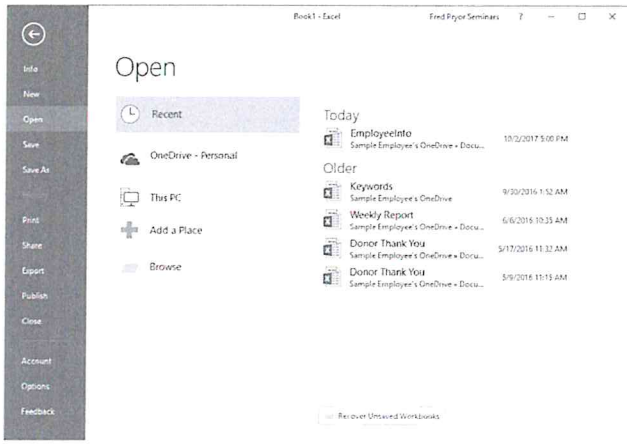
A		The strip of buttons and icons above the work area.
B		A collection of functionally- related controls and menus.
C		An individual spreadsheet with rows & columns or a chart.
D		A file containing multiple worksheets.
E		Marks the currently active cell or range.
F		Provides access to options such as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

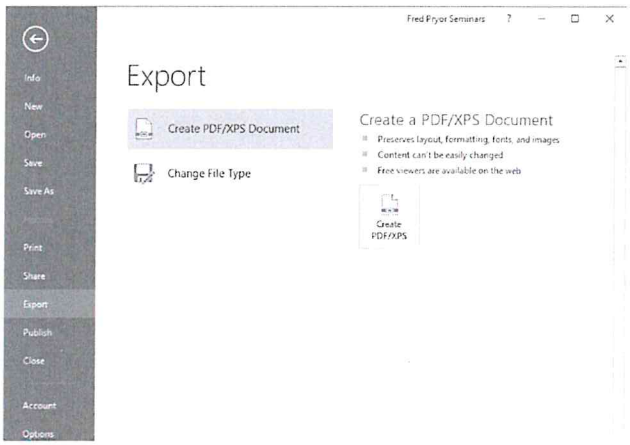
About this course: While steps and screenshots like the worksheet above are based on Excel 2016, the information provided in this course will be valuable to everyone using any version of Excel 2007 and later. While minor details can be different from version to version, most tasks are completed in a similar way. Differences that might cause confusion are called out for your reference and your instructor is very familiar with these exceptions should you have a question about a specific version.

Review - The File Tab and Office Backstage

The **File** tab takes you to the **Office Backstage** where you will find all the tools you need to help you create **[A]**, save **[B]**, print **[C]** and manage your workbooks. This is also where you can password protect your documents **[D]**, customize your copy of Excel **[E]** and prepare your documents for sharing **[F]**. Click the back-arrow to return to your worksheet.

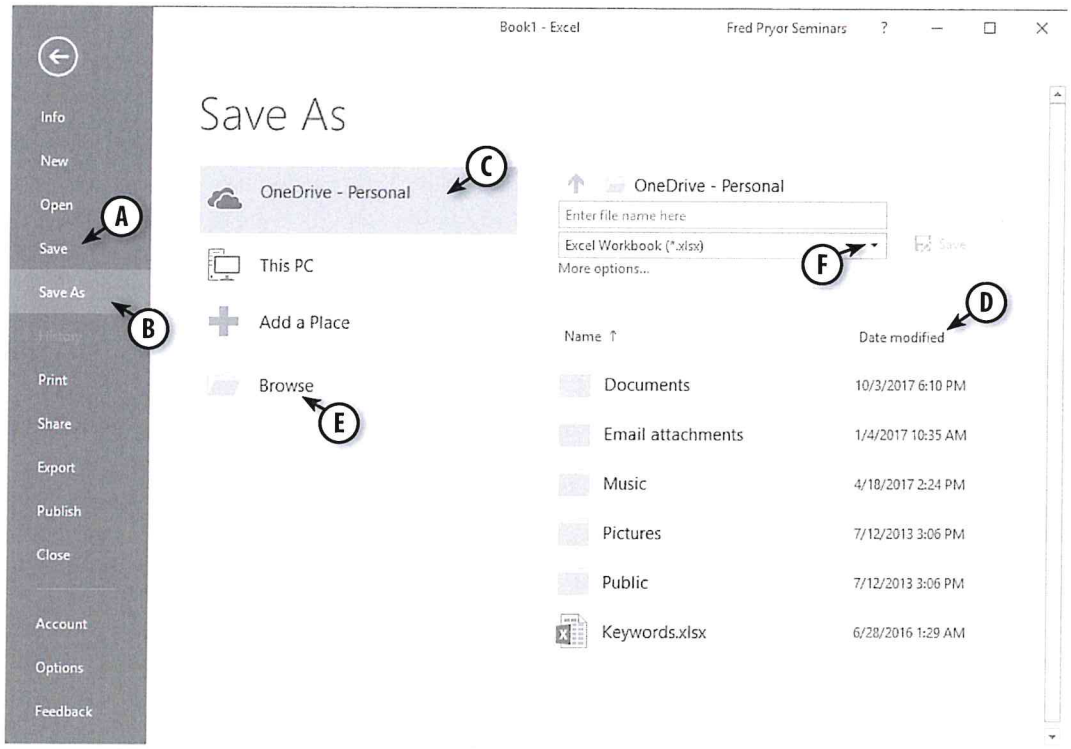






Review - Save Your Workbook

Everyone has experienced the pain of losing hours of work because of not saving. The best way to prevent this from happening is to save early – as soon as a new document is created, as this is what triggers the AutoSave process to start – and often – each time a significant set of changes has been made.



1. Click the **File** tab.
2. Choose one of two options:
   a. Click **Save [A]** to update your file with your most recent changes.
   b. Click **Save As [B]** to save a new file or save an existing file in a new format.
3. Choose a destination for your file from the **Places** list **[C]** or browse the default folders list **[D]** or click **Browse [E]** to open the Windows dialog box.
4. Choose a file type **[F]**.

Excel 2007 and 2010:	Mac 2011 and 2016/365
1. Click the **File** tab (Office Button in Excel 2007). 2. Choose **Save** or **Save As** to open the Windows dialog box.	1. Open the **File** system menu. 2. Choose **Save** or **Save As** from the dropdown menu.

Review - Use a Template

According to Dr. Stephen R. Covey in his New York Times best seller, *7 Habits of Highly Effective People,* to be effective, it is important to begin with the "end in mind" (Habit #2). Before you start a new worksheet in Excel, take some time to think about what you want your worksheet to do and how you want it to look. Once you have an idea of what you want, by far the fastest way to start a new worksheet is to find a TEMPLATE!

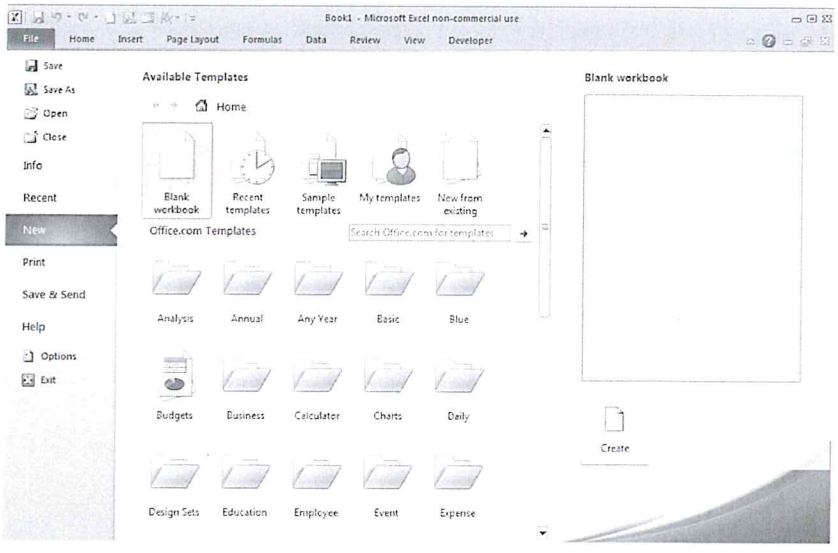
1. Click the **File** tab.
2. Select **New [A]**.
3. Choose from Excel's many built-in **Available Templates [B]** or search for more templates online using the search box **[C]** (internet connection required). Click on a template to view more information.
4. Click **Create [D]**.

Excel 2007 and 2010:

1. Click the **File** tab (Office Button in Excel 2007).
2. Select **New**.
3. Click a template group option (**Blank workbook, Recent templates**, etc.) or click on a topic category under **Office.com Templates** to browse and download additional templates.
4. Select the template you want to open.
5. Click **Create**.

Mac 2011-2016/365

1. Open the **File** system menu.
2. Choose **New from Template** from the dropdown menu.
3. Select the template you want in the dialog box.



Excel 2010 ❯

Seven Steps to Worksheet Success

Creating a worksheet can be frustrating and tedious, but following the Seven Steps to Worksheet Success can minimize this frustration. There are exceptions to every rule, but using these steps – in order – as a guide will often prevent wasted time and effort.

It may also be appropriate to password protect your data – add **Secure** as #8!

Design Build Calculate Format Report Print Automate

Before You Begin

Take some time to think about what your data needs to do and how it should look. Consider using a mind map.

Considerations:

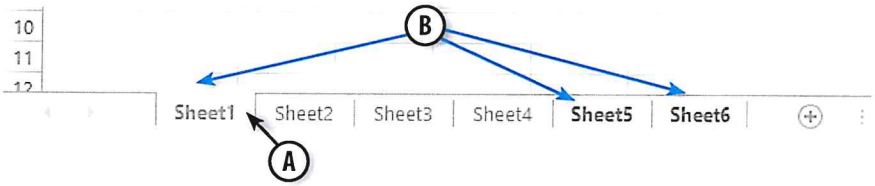
1. What kind of data do I want to capture?
2. How do I want my columns & rows organized?
3. Is performing mathematical calculations on your data your primary purpose? (If not, strongly consider using **MS Access** instead of Excel.)

Once you have an idea of what you want, by far the fastest way to start a new worksheet is to find a TEMPLATE! See review section above.

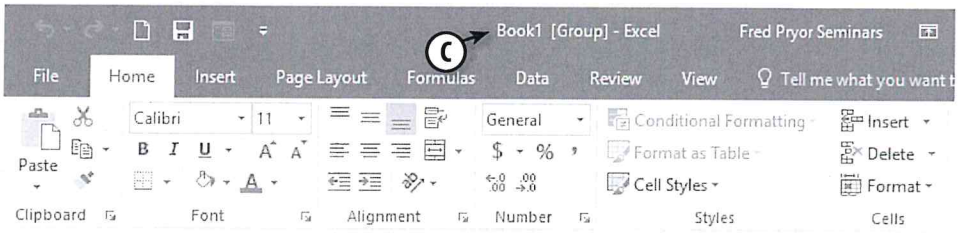
Design - Optimizing Workbook Structure

Sometimes the nature of the data to be stored and analyzed or the demands of a particular project make it difficult to find a template. In those cases, a workbook must be created "from scratch." If several worksheets in the workbook contain similar information such as expenses, sales separated by month, or employee information, it would be most efficient and effective to use the same layout and formatting for all of the sheets. Grouping worksheets is the easiest way to accomplish this.

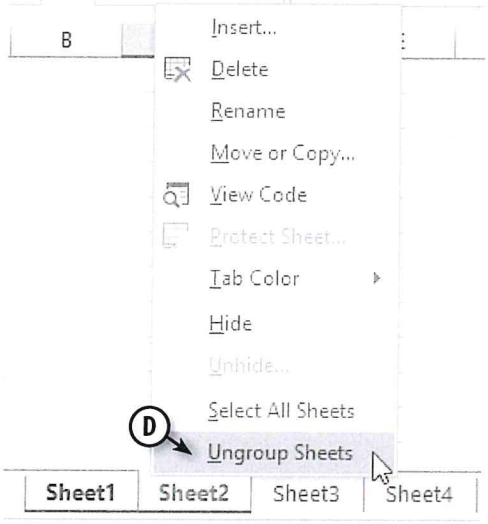
Group Sheets:



1. Click the first sheet to be grouped **[A]**.
2. Select additional sheets to include in the group.
   a. Hold the **SHIFT** key on the keyboard while clicking a non-adjacent sheet to select both of the clicked sheets and all sheets between them.
   b. Hold the **CTRL** key on the keyboard while clicking to add individual sheets to the selection.
3. Verify the grouped sheets are the ones intended.
   a. Grouped sheets are highlighted **[B]**.
   b. The term **[Group]** appears in the **Title Bar [C]**.

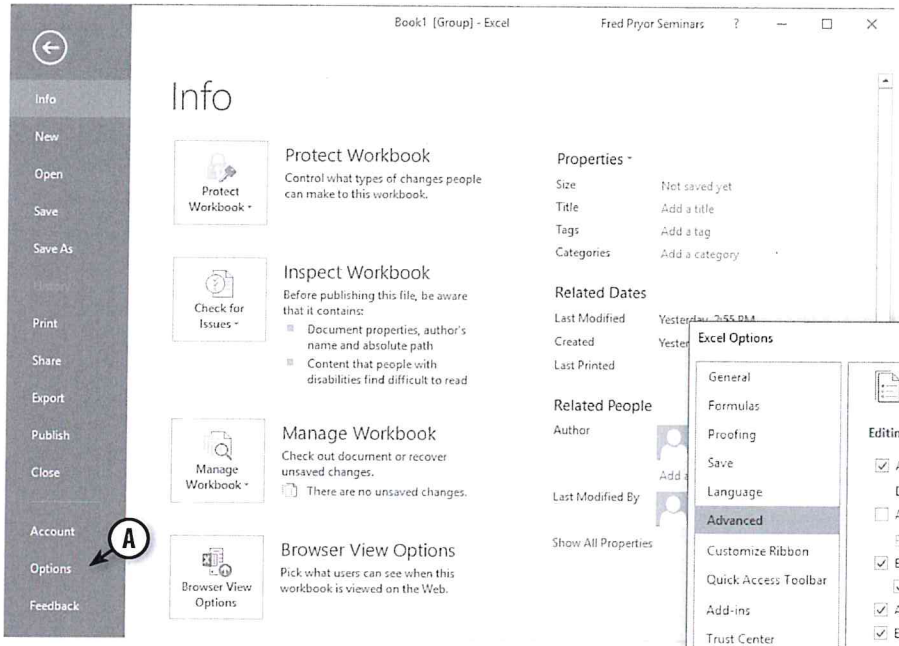


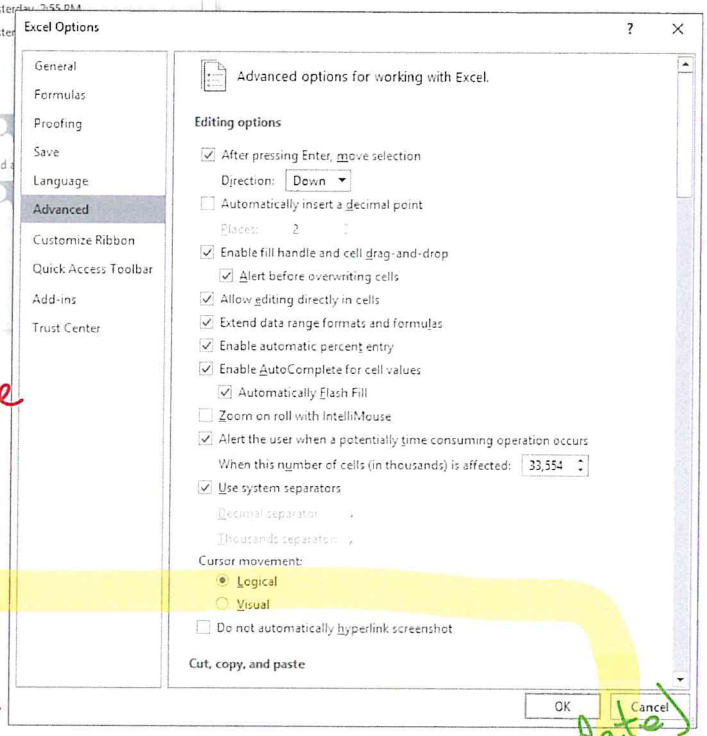
4. Make changes to any grouped sheet to apply those modifications to all grouped sheets.
5. **Ungroup** sheets to stop sharing changes.
   a. Click any ungrouped sheet.
   b. Right-click any grouped sheet and select **Ungroup Sheets [D]**.



Design - Data Entry Tips & Tricks

Excel has many features that can make entering data easier and faster. Some of these features are options that can be activated, some are keyboard shortcuts, and some are functions.





To Open Excel Options:

1. Click the **File** button.
2. Click **Options [A]**.

Does not update

	A	B	C
1		Static	Dynamic
2	Current Date	Cntr ;	=Today +45
3			
4	Current Time	Cntr :	=NOW -1

Changes (i.e., today's date)

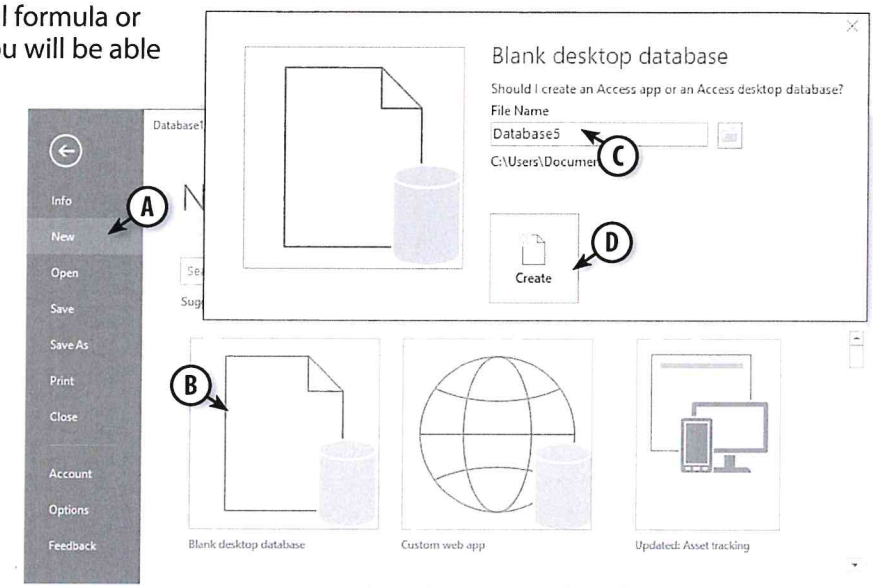
K takes a seminar on ~~Feb~~ B2 and needs to take one a year later, but we need to give her 90 days notice

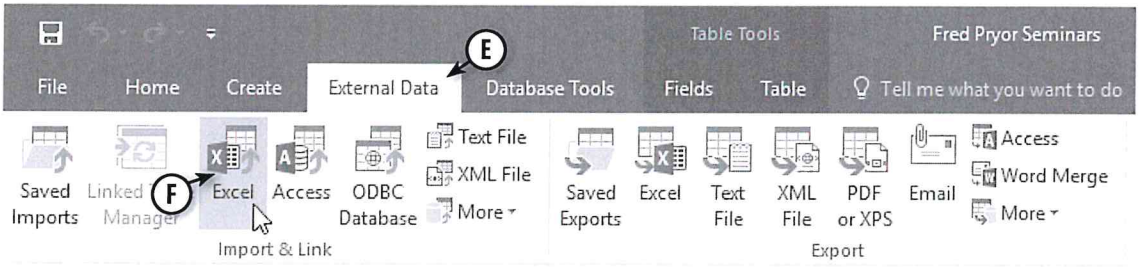
=B2 +365 -90

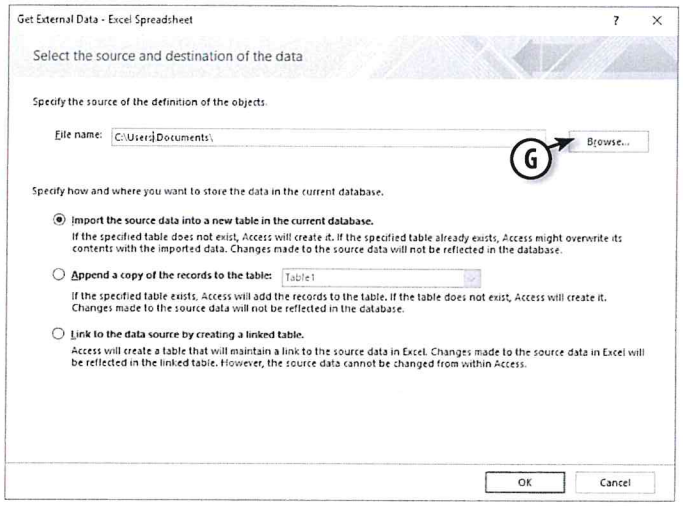
Design - Import Excel Data into Access

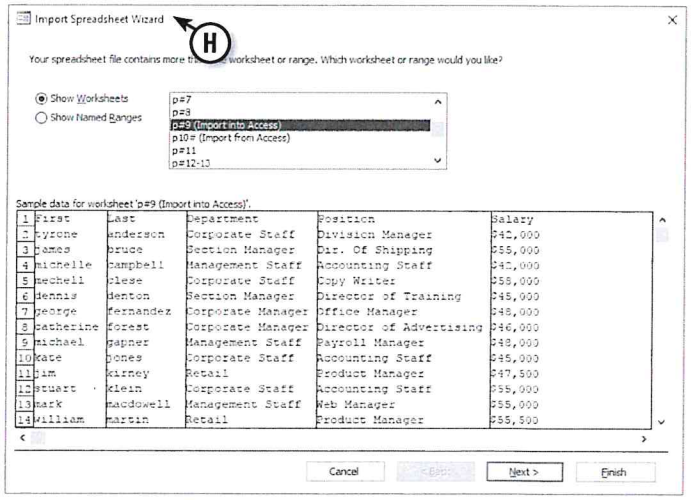
If your data does not require Excel's helpful formula or functions, consider Access. With Access, you will be able to take advantage of extensive database tools.

1. Open Access.
2. Click the **New** menu option **[A]**, then click **Blank Database [B]**.
3. Name your database **[C]**.
4. Click **Create [D]**.
5. Click the **External Data** tab **[E]**.
6. Click the **Excel** button **[F]**.
7. Click **Browse** to locate the Excel file you want to import into Access **[G]**.
8. Follow the **Import Spreadsheet Wizard [H]**.







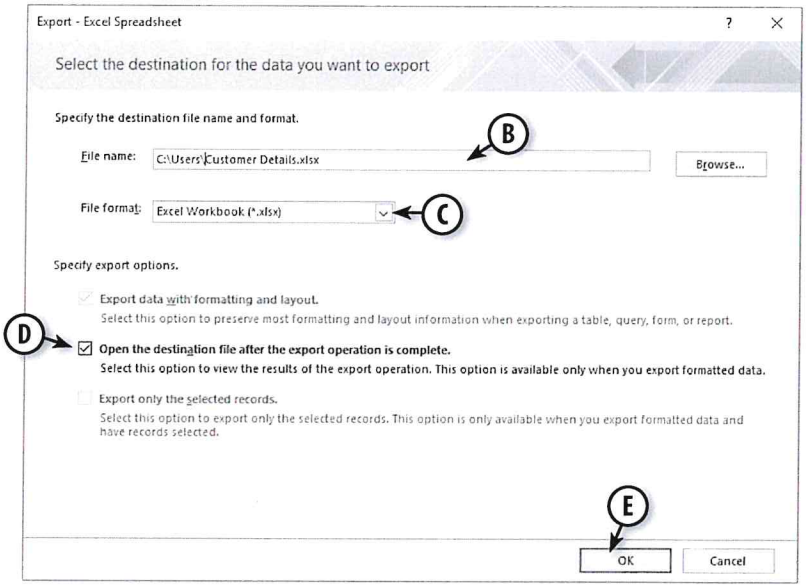


Design - Import Access Data into Excel

If Excel and Access are examined closely, it becomes obvious that these programs were designed to be used together. There are many similarities between Excel and Access, though they each have inherent strengths and weaknesses. Sharing data between them is a simple process.

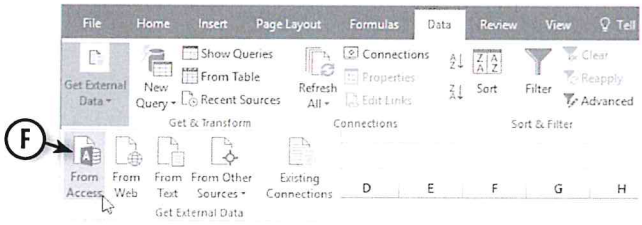
Export Data to Excel from Access:

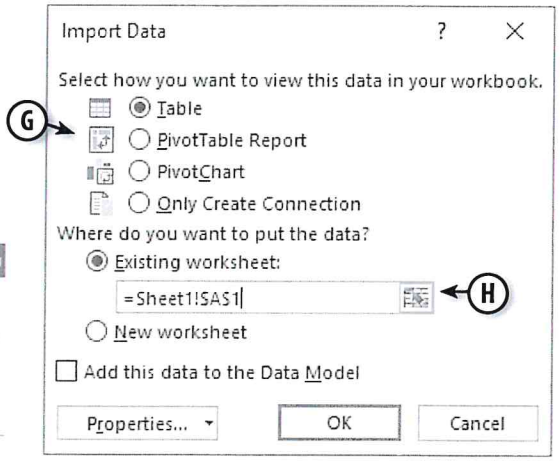
1. In Access, on the **External Data** tab, in the **Export** group click the **Excel** button **[A]**.
2. In the **Export - Excel Spreadsheet** dialog box, specify the destination **File name [B]** and **File format [C]**.
3. Check or uncheck checkboxes to **Specify export options [D]**.
4. Click the **OK** button **[E]**.



Import Data into Excel from Access:

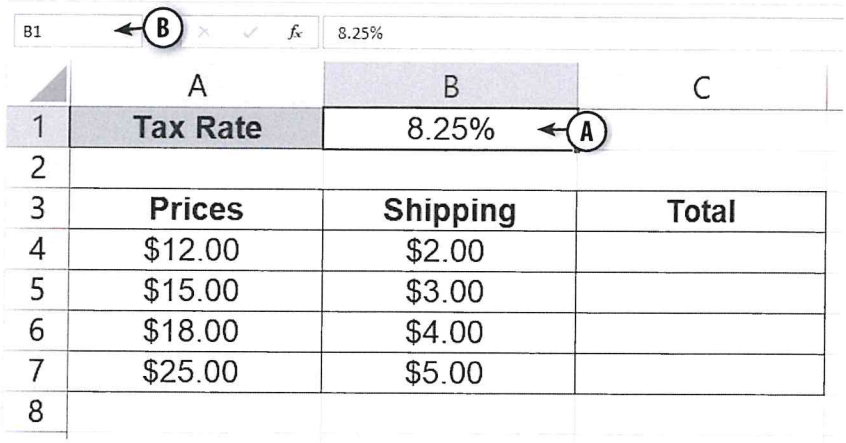
1. In Excel, on the **Data** tab, in the **Get External Data** group, click the **From Access** button **[F]**.
2. Navigate to the appropriate database file.
3. Select **Open**.
4. Select the object(s) you want to import.
5. Click **OK**.
6. In the **Import Data** dialog box, select the way the data will be presented, or viewed, in the worksheet **[G]**.
7. Select a radio button to choose whether the data will be placed into an **Existing Worksheet** or a **New Worksheet [H]**.
8. Click the **OK** button.





Calculate - Named Cell Ranges

Naming a "range" - a group of cells - provides many advantages when working with formulas and functions, and when moving around in large workbooks.



Name a Range:

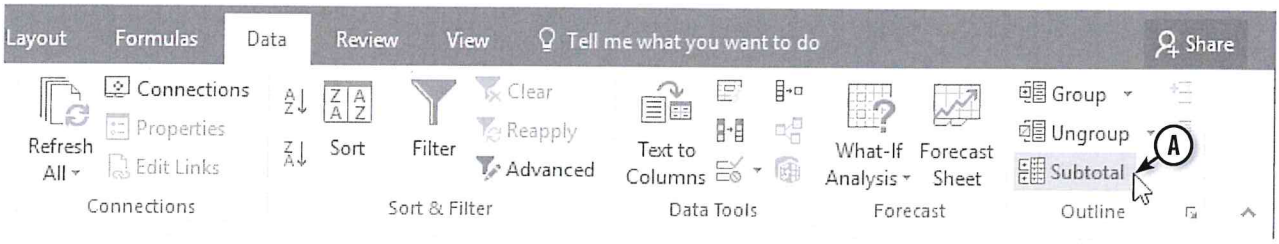
1. Select the cell(s) to be included in the named range **[A]**.
2. Click the **Name Box [B]**.
3. Type a name for the range.
4. Press the **Enter** key on the keyboard.

Use the proper syntax when naming ranges:

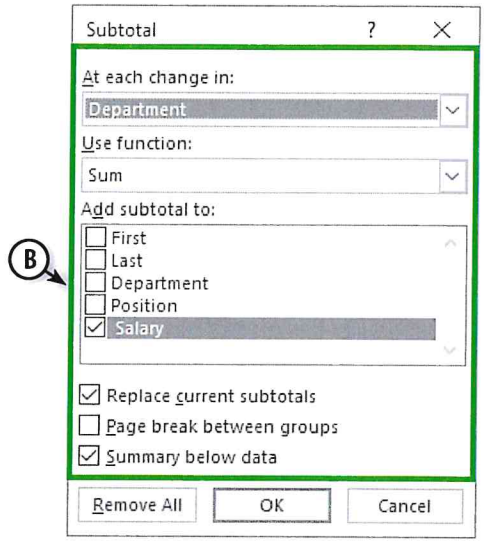
- Start the name with a letter, underscore, or backslash.
- Do not start with a number or other special character.
- Do not use spaces.

Calculate - Subtotals

Excel can automatically calculate subtotals at every change of data in a key column. This can be a great time-saver.



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



	First	Last	Department	Position	Salary
2	tyrone	anderson	Corporate Staff	Division Manager	$42,000.00
3	james	bruce	Section Manager	Dir. Of Shipping	$55,000.00
4	michelle	campbell	Management Staff	Accounting Staff	$42,000.00
5	mechell	clese	Corporate Staff	Copy Writer	$58,000.00
6	dennis	denton	Section Manager	Director of Training	$45,000.00
7	george	fernandez	Corporate Manager	Office Manager	$48,000.00
8	catherine	forest	Corporate Manager	Director of Advertising	$46,000.00
9	michael	gapner	Management Staff	Payroll Manager	$48,000.00
10	kate	jones	Corporate Staff	Accounting Staff	$45,000.00
11	jim	kirney	Retail	Product Manager	$47,500.00
12	stuart	klein	Corporate Staff	Accounting Staff	$55,000.00
13	mark	macdowell	Management Staff		
14	william	martin	Retail		
15	will	mullen	Corporate Staff		

	First	Last	Department	Position	Salary
2	george	fernandez	Corporate Manager	Office Manager	$48,000.00
3	catherine	forest	Corporate Manager	Director of Advertising	$46,000.00
4	elizabeth	ridenhauer	Corporate Manager	Vice President	$65,000.00
5	marcia	smith	Corporate Manager	General Sales Manager	$42,000.00
6	alice	wortman	Corporate Manager	Marketing Manager	$85,000.00
7			**Corporate Manager Total**		$286,000.00
8	tyrone	anderson	Corporate Staff	Division Manager	$42,000.00
9	mechell	clese	Corporate Staff	Copy Writer	$58,000.00
10	kate	jones	Corporate Staff	Accounting Staff	$45,000.00
11	stuart	klein	Corporate Staff	Accounting Staff	$55,000.00
12	will	mullen	Corporate Staff	Division Manager	$53,500.00
13	ellen	spinnaker	Corporate Staff	Circulation Manager	$70,000.00
14			**Corporate Staff Total**		$323,500.00
15	michelle	campbell	Management Staff	Accounting Staff	$42,000.00

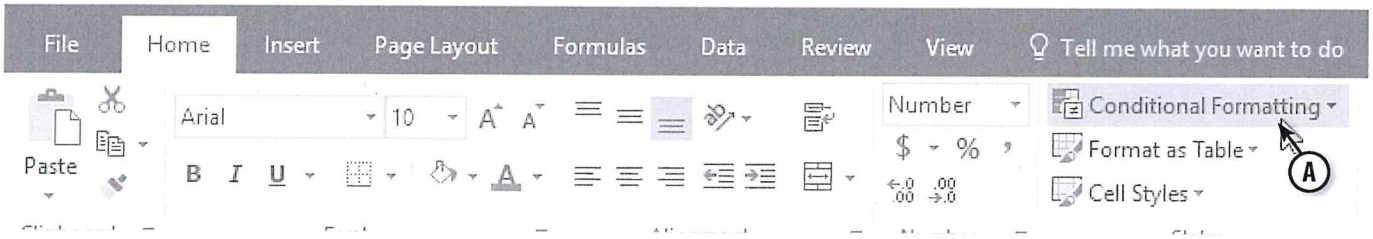
	First	Last	Department	Position	Salary
7			Corporate Manager Total		$286,000.00
14			Corporate Staff Total		$323,500.00
19			Management Staff Total		$210,000.00
24			Retail Total		$208,500.00
27			Section Manager Total		$100,000.00
28			Grand Total		$1,128,000.00

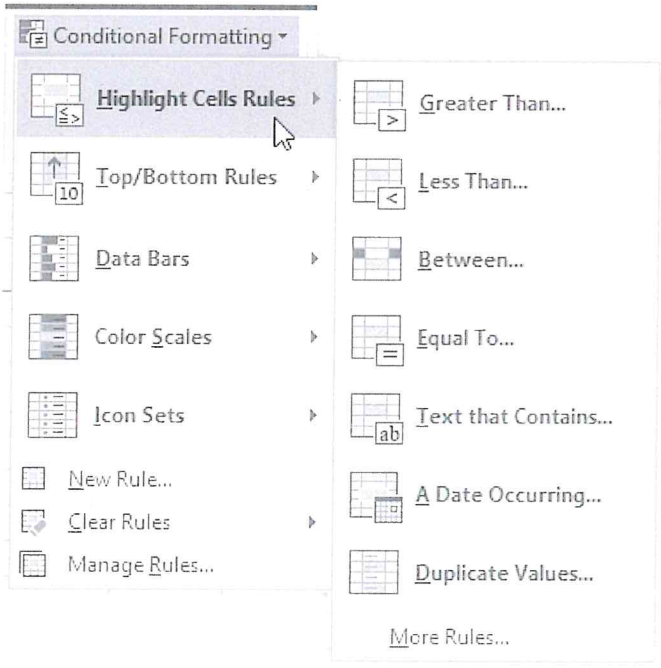
Select Visible cells
Alt + ; (windows)

Format – Conditional Formatting

Excel contains an extremely powerful and flexible tool that allows you to change the appearance of a cell based on its contents.

1. On the **Home** tab, in the **Styles** group, click the **Conditional Formatting** button **[A]**.
2. Select the appropriate options.
3. Click the **OK** button.





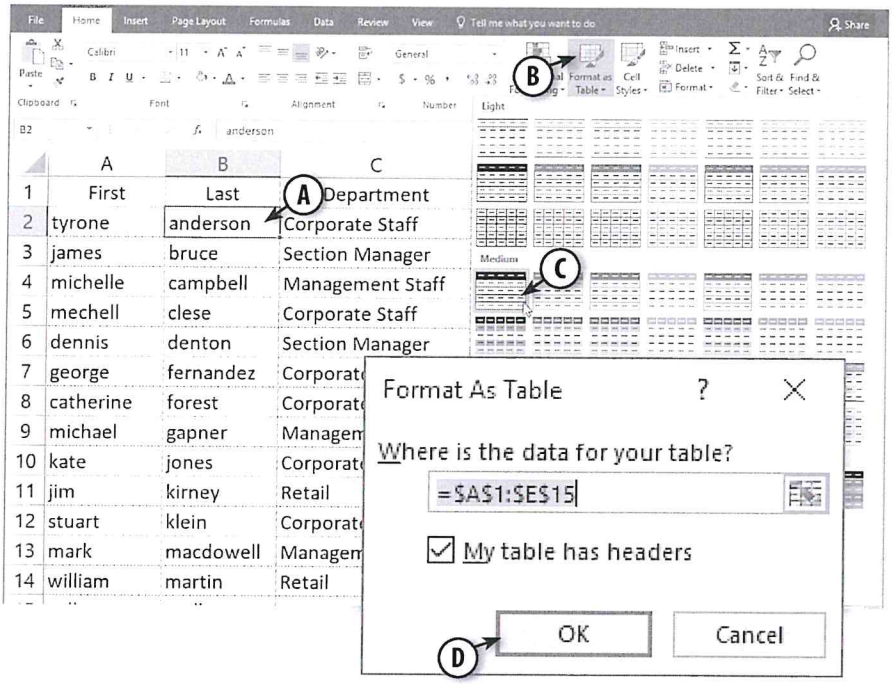
How to Change the Colors of Icons

Conditional Rules

Format – List as a Table

Lists can make columns of data both easy to read and functional. A properly formatted tabular list allows the performance of basic data analysis with just a few mouse clicks.

1. Click any cell in the data to be converted to a list **[A]**.
2. On the **Home** tab, in the **Styles** group, click the **Format as Table** button **[B]**.
3. Select a formatting option **[C]**.
4. Click the **OK** button to confirm the data range **[D]**.
5. Review your completed table **[E]**.
   a. The selected formatting should be applied.
   b. There are dropdown arrows at the top of each column to facilitate sorting and filtering.

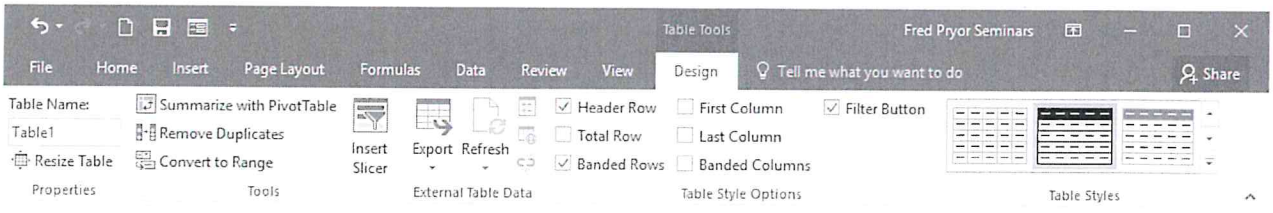


	B	C	D	E
	Last	**Department**	**Position**	**Salary**
2	anderson	Corporate Staff	Division Manager	$42,000
3	bruce	Section Manager	Dir. Of Shipping	$55,000
4	campbell	Management Staff	Accounting Staff	$42,000
5	clese	Corporate Staff	Copy Writer	$58,000
6	denton	Section Manager	Director of Training	$45,000
7	fernandez	Corporate Manager	Office Manager	$48,000
8	forest	Corporate Manager	Director of Advertising	$46,000
9	gapner	Management Staff	Payroll Manager	$48,000
10	jones	Corporate Staff	Accounting Staff	$45,000
11	kirney	Retail	Product Manager	$47,500

E

BRIGHT IDEA

- Use the options on the **Design** tab to format the table or adjust its structure.
- Select **Convert to Range** to remove the table structure.



Format – Convert Text to Columns

Sometimes when data is imported into Excel from another program, two or more columns are combined into one column. Fortunately, the **Text to Columns** command can be used to split them back into multiple columns.

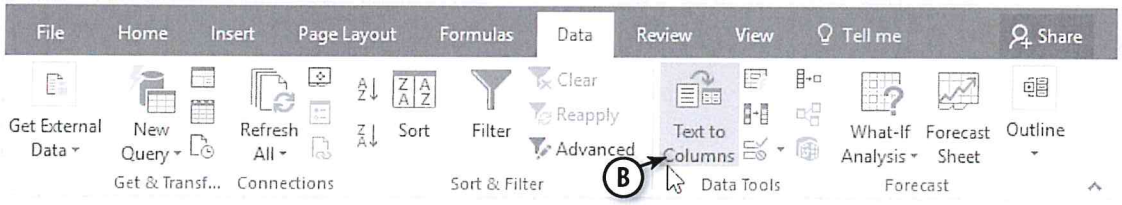
1. Select the column to be split **[A]**.
2. On the Data tab, in the Data Tools group, click the **Text to Columns** button **[B]**.
3. Select the **Delimited** radio button **[C]**.
4. Click the **Next** button.
5. Select the **Delimiter(s) [D]**.
6. Click the **Finish** button **[E]**.
7. Review your split columns **[F]**.

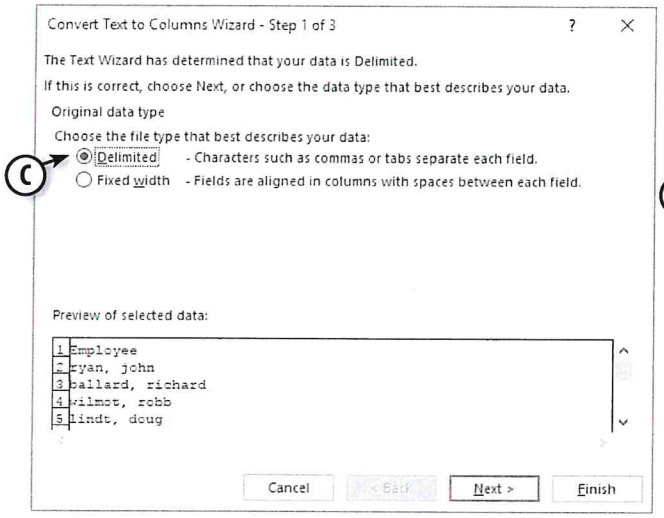
	A
1	Employee
2	ryan, john
3	ballard, richard
4	wilmot, robb
5	lindt, doug
6	prindle, sherry
7	vickers, mark
8	perkins, joe
9	muhammad, rodney
10	karklins, maris
11	rock, chris
12	russo, mani
13	brannon, vicki
14	poe, jerry
15	thomas, dave
16	schnelker, julie
17	foust, scott

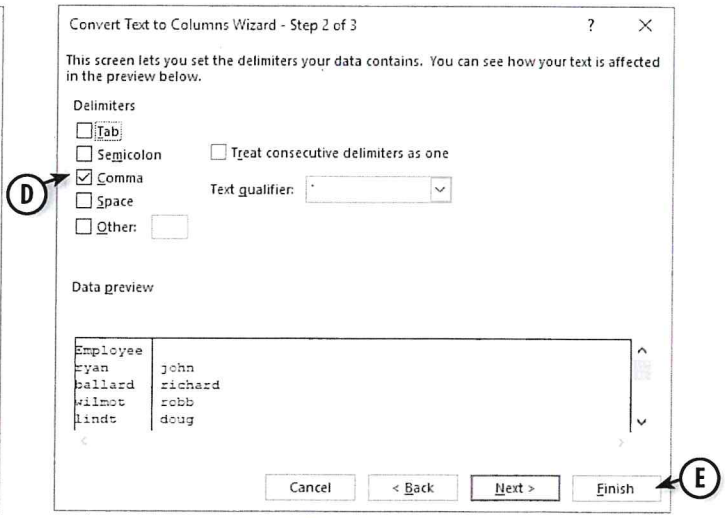
(A)

	A	B
1	Employee	
2	ryan	john
3	ballard	richard
4	wilmot	robb
5	lindt	doug
6	prindle	sherry
7	vickers	mark
8	perkins	joe
9	muhammad	rodney
10	karklins	maris
11	rock	chris
12	russo	mani
13	brannon	vicki
14	poe	jerry
15	thomas	dave
16	schnelker	julie
17	foust	scott

(F)







Format – Text Functions

There is little more frustrating than to finish a project and then realize that an important data formatting requirement was overlooked. Fortunately, Excel is equipped with functions that can make tedious changes quickly and easily.

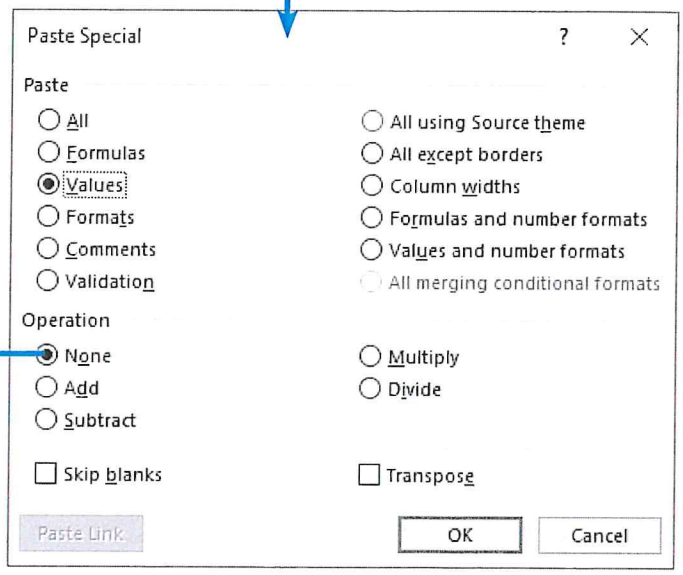
Use Paste Special:

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

1. Select and copy a range of cells.
2. Right-click the destination cell or range.

CAUTION! By default, copied ranges will paste over the same number of cells, starting with the selected cell and moving to the right and down. Be sure that data you need will not be overwritten.

	A	B	C
1	**Last Name**	**First Name**	**Title**
2	ryan	john	mr.
3	ballard	richard	mr.
4	wilmot	robb	mr.
5	schnelker	julie	ms.
6	lindt	doug	mr.
7	prindle	sherry	miss
8	vickers	mark	mr.
9	perkins	joe	mr.



	A	B	C
1	**Last Name**	**First Name**	**Title**
2	ryan	john	Mr.
3	ballard	richard	Mr.
4	wilmot	robb	Mr.
5	schnelker	julie	Ms.
6	lindt	doug	Mr.
7	prindle	sherry	Miss
8	vickers	mark	Mr.
9	perkins	joe	Mr.

word

=PROPER( ) Capitalizes the first letter in each text string

_____ Changes text to all caps

_____ Changes texts to all lower case

CONCATENATE(Combines several text strings into one string

BRIGHT IDEA Use **FlashFill** (Excel 2013 and later) to quickly perform repetitive text editing tasks.

B2," ",B3

space

space

=PROPER(CONCATENATE(A1," ",C1," ",B1))

Notes

Look into and Access

Access trainings

Deleting Duplicates

- Select Data
- Data tab
- Remove Duplicates

=IFERROR( ), "NOT Found"

input if "IF" doesn't pull data

=PROPER(CONCATENATE(A2," ",D23," ",B1))

=VLOOKUP(C28, $B$23:$F$26, 2:3

=PROPER(CONCATENATE(VLOOKUP(C28, Employee, 2)," "Vlookup(C28, Employee, 3)))

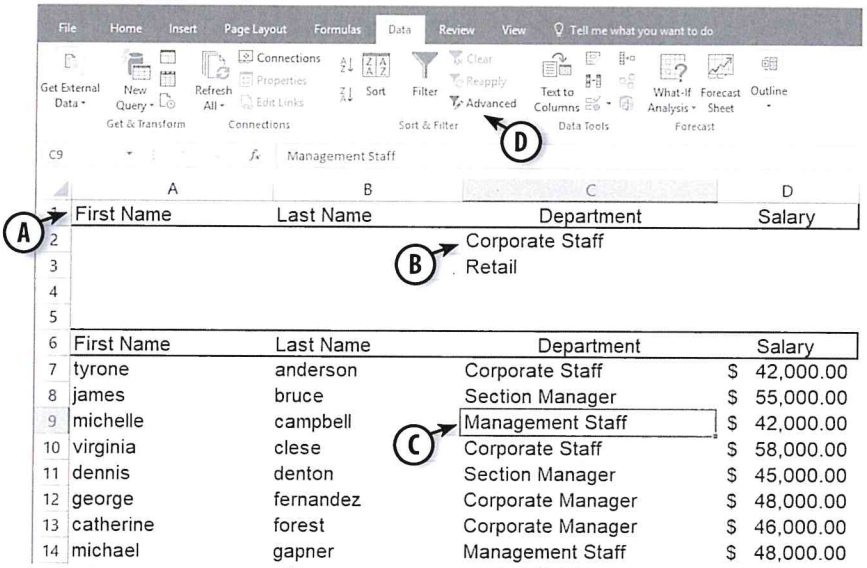
IF (B5>=C5, VLOOKUP (C5, BONUS, 2)0

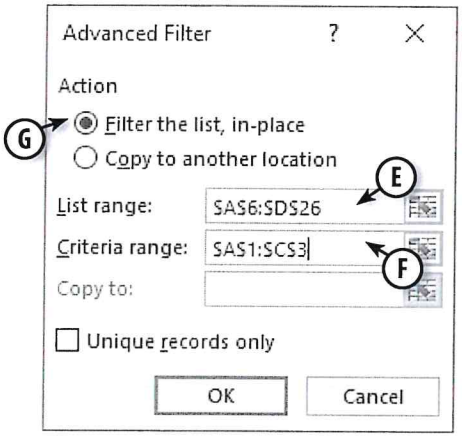
Report – Advanced Filter

Where the **AutoFilter** function is limited, the **Advanced Filter** operates successfully on lists of any size. It also offers more flexibility with regard to the type and number of constraints that can be employed.

Use the Advanced Filter:

1. Add an additional header row above the data to be filtered **[A]**. This is where we will specify our filtering criteria.
2. Enter the criteria, keeping in mind that those in the same row are **AND** criteria and those on different rows are **OR** criteria. **[B]**
3. Select any cell within the list to be filtered **[C]**.
4. On the **Data** tab, in the **Sort & Filter** group, click the **Advanced** button **[D]**. Excel will automatically select your **List range [E]** (based on the location of your marquee.)
5. Define the **Criteria range** (identify the range of cells to be included in the filter) in the **Advanced Filter** dialog box **[F]**.
6. Select **Filter the list, in-place** or **Copy to another location [G]**.
7. Click **OK**.





	A	B	C	D
1	First Name	Last Name	Department	Salary
2			Corporate Staff	
3			Retail	
4				
5				
6	First Name	Last Name	Department	Salary
7	tyrone	anderson	Corporate Staff	$ 42,000.00
10	virginia	clese	Corporate Staff	$ 58,000.00
15	kate	jones	Corporate Staff	$ 45,000.00
16	jim	kirney	Retail	$ 47,500.00
17	stuart	klien	Corporate Staff	$ 55,000.00
19	will	mullen	Corporate Staff	$ 53,500.00
21	ty	simmons	Retail	$ 57,500.00
23	ellen	spinnaker	Corporate Staff	$ 70,000.00
25	eileen	wilson	Retail	$ 48,000.00

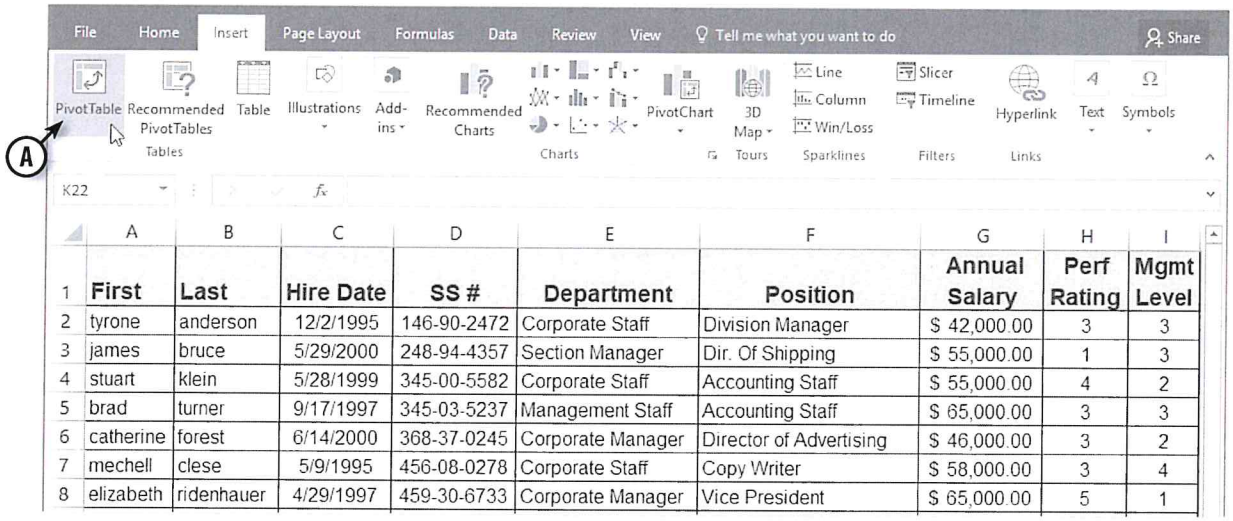
Report – Pivot Tables

PivotTables are powerful tools for analyzing data and producing reports. They allow the same information to be viewed in several different ways with just a few mouse clicks.

Four things to consider when creating a PivotTable:

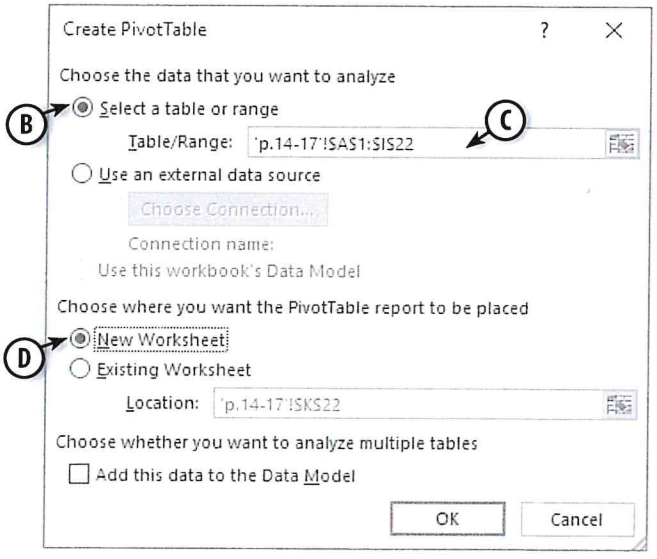
What Are My Row Headers? → What Are My Column Headers? → What Data Am I Analyzing? → Do I Need to Divide the Table?

Create a PivotTable :



	A	B	C	D	E	F	G	H	I
1	First	Last	Hire Date	SS #	Department	Position	Annual Salary	Perf Rating	Mgmt Level
2	tyrone	anderson	12/2/1995	146-90-2472	Corporate Staff	Division Manager	$ 42,000.00	3	3
3	james	bruce	5/29/2000	248-94-4357	Section Manager	Dir. Of Shipping	$ 55,000.00	1	3
4	stuart	klein	5/28/1999	345-00-5582	Corporate Staff	Accounting Staff	$ 55,000.00	4	2
5	brad	turner	9/17/1997	345-03-5237	Management Staff	Accounting Staff	$ 65,000.00	3	3
6	catherine	forest	6/14/2000	368-37-0245	Corporate Manager	Director of Advertising	$ 46,000.00	3	2
7	mechell	clese	5/9/1995	456-08-0278	Corporate Staff	Copy Writer	$ 58,000.00	3	4
8	elizabeth	ridenhauer	4/29/1997	459-30-6733	Corporate Manager	Vice President	$ 65,000.00	5	1

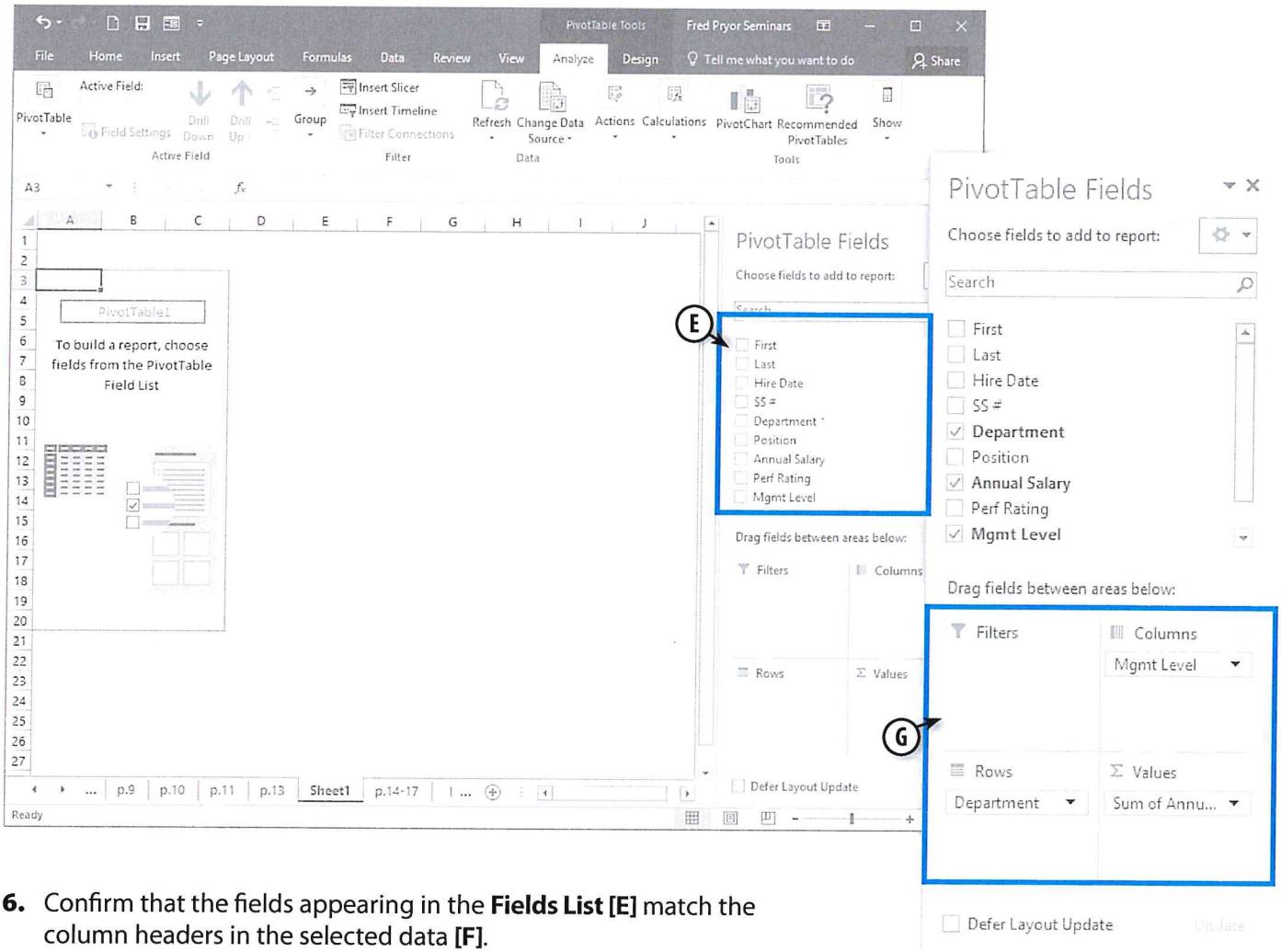
1. On the **Insert** tab, in the **Tables** group, click **PivotTable** dropdown arrow and select **PivotTable [A]**.
2. Select a radio button **[B]** to choose to pull data from a table or range, or to pull data from an external source. In this example, **Table/Range** was selected.
3. Select your external data source or table / range. In this example, data in columns A through I, rows 1-22, was selected **[C]**.
4. Select the **New Worksheet** or **Existing Worksheet** (and specify the sheet) to determine where the PivotTable should be placed **[D]**. In this example, **New Worksheet** was selected.
5. Click the **OK** button.



I am close to us walking out--

Report – PivotTables

	First	Last	Hire Date	SS #	Department	Position	Annual Salary	Perf Rating	Mgmt Level
2	tyrone	anderson	12/2/1995	146-90-2472	Corporate Staff	Division Manager	$ 42,000.00	3	3
3	james	bruce	5/29/2000	248-94-4357	Section Manager	Dir. Of Shipping	$ 55,000.00	1	3
4	stuart	klein	5/28/1999	345-00-5582	Corporate Staff	Accounting Staff	$ 55,000.00	4	2



6. Confirm that the fields appearing in the **Fields List [E]** match the column headers in the selected data **[F]**.
7. Drag fields from the Field List to one of the bottom areas **[G]** to create the PivotTable that best illustrates the data: **Filters, Columns, Rows, and Values.**

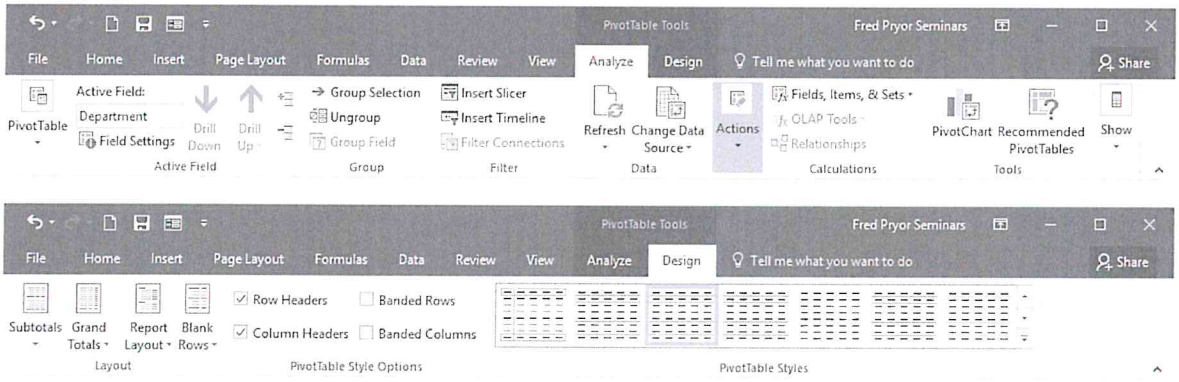
Report – PivotTables

Completed PivotTable

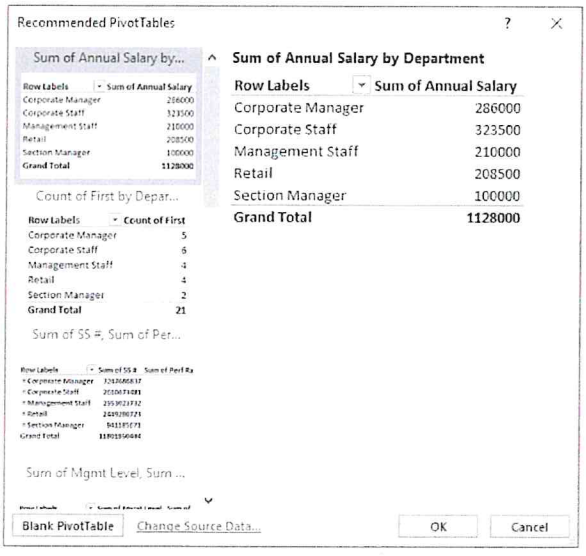
Sum of Annual Salary	Column Labels				
Row Labels	1	2	3	4	Grand Total
Corporate Manager	$ 65,000.00	$221,000.00			$ 286,000.00
Corporate Staff		$ 55,000.00	$210,500.00	$58,000.00	$ 323,500.00
Management Staff		$ 42,000.00	$168,000.00		$ 210,000.00
Retail			$208,500.00		$ 208,500.00
Section Manager			$100,000.00		$ 100,000.00
Grand Total	$ 65,000.00	$318,000.00	$687,000.00	$58,000.00	$1,128,000.00

PivotTable Options:

The **PivotTable Tools** contextual tabs (**Analyze** and **Design**) provide many useful ways to modify your PivotTable like, sorting and refreshing the data.



Excel 2013 introduced **Recommended PivotTables**, a shortcut to creating PivotTables with a single click. Select your data, then click **Recommended PivotTables**. Choose an option from Excel's list of examples, or click **Blank PivotTable** to start from scratch and follow the steps above.

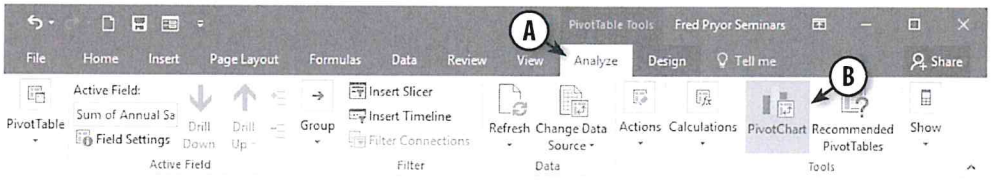


Report – PivotCharts

Sometimes data is easier to understand or more compelling when it is presented visually. In Excel, this is accomplished with charts. PivotTable data can be converted into a special kind of chart called a PivotChart to create an especially powerful impact.

Create a PivotChart:

1. Click anywhere in the data of PivotTable to be charted to open the PivotTable Tools highlighted ribbon.



2. **Excel 2013 and later:** Click the contextual **Analyze** tab **[A] Excel 2007-2010:** Click the contextual **Options** tab.

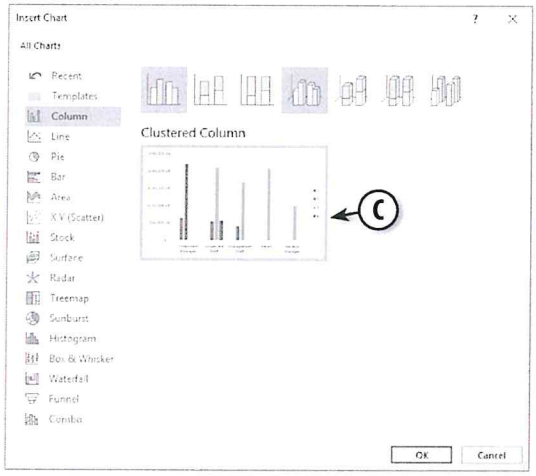
3. Click the **PivotChart** button **[B]** in the **Tools** group.

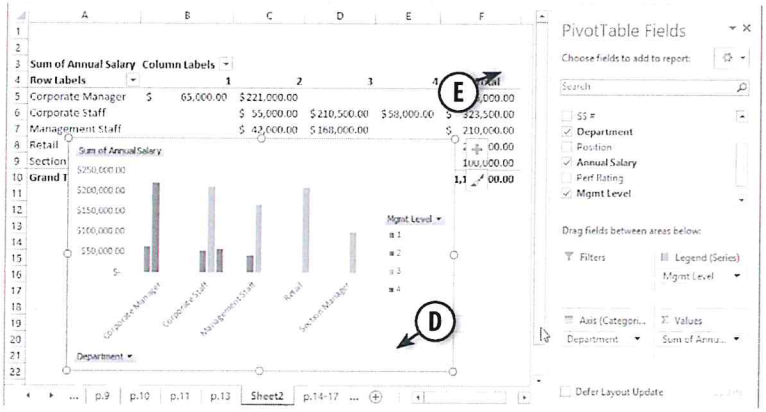
4. Select chart type and subtype **[C]**. In this example, a **Clustered Column Chart** was selected.

5. Click the **OK** button.

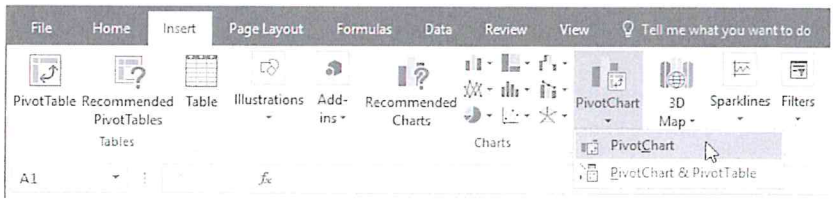
6. Review the finished chart **[D]**.

7. Note that the PivotTable Fields pane remains open **[E]** to facilitate editing of the chart.



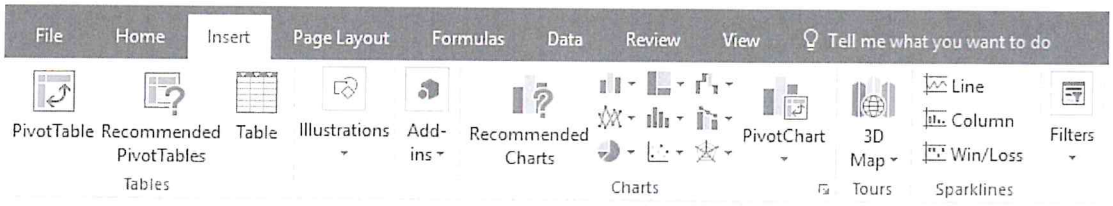


In Excel 2013 and later, you can create a PivotChart directly from your data without having to create a PivotTable first! Just click the **PivotChart** button on the **Insert** tab and follow the steps as if you were creating a table.



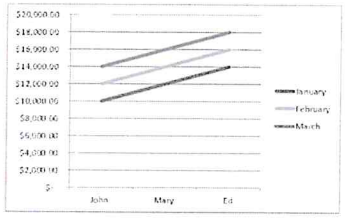
Report – Modify Charts

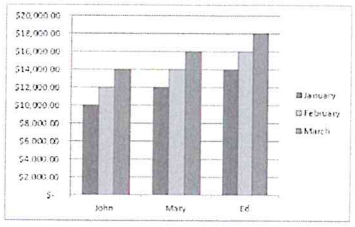
Changing the appearance of a chart in Excel is a simple process. It is easy to change everything from the core chart type and subtype to color, layout, dimension, and labels.



Change the Chart Type and Subtype:

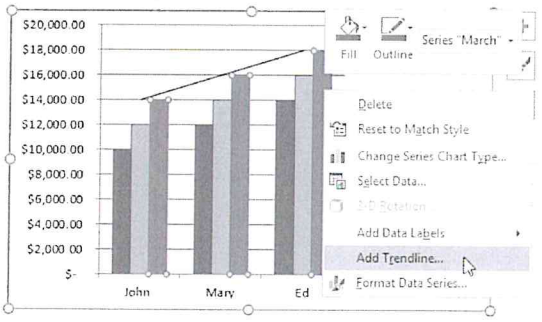
1. Select your chart.
2. On the contextual **Design** tab, in the **Type** group, click **Change Chart Type** button.
3. Make the desired changes.
4. Click **OK**.





Add a Trendline:

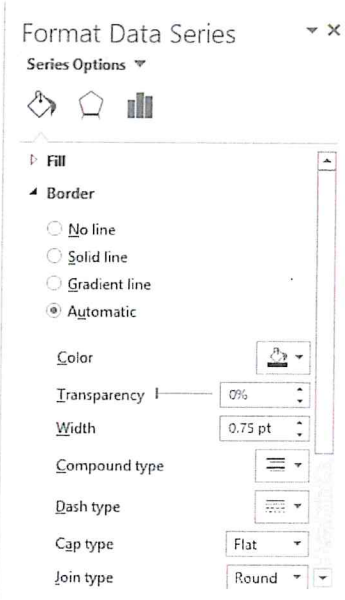
1. Select your chart.
2. Right-click on any data bar.
3. Click **Add Trendline**.
4. Choose desired options.
5. Click **OK**.



Change the Appearance:

Microsoft provides several color-coordinated chart design options. Select one from the selection panel in the **Chart Styles** group of the contextual **Design** tab. To change individual chart elements manually:

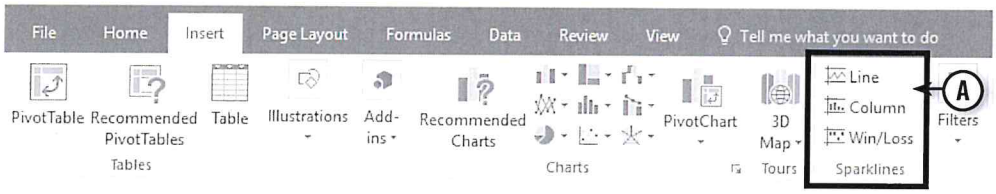
1. Right-click the chart element.
2. Select **Format Data Series** (or equivalent).
3. From the **Fill & Line** tab, create the desired effect.
4. Click the **Close** button to close the pane when your edits are complete..



Many editing options are available from **Chart Elements** buttons that appear next to a selected chart. Quickly change style or add trendlines, for example without opening an edit pane.

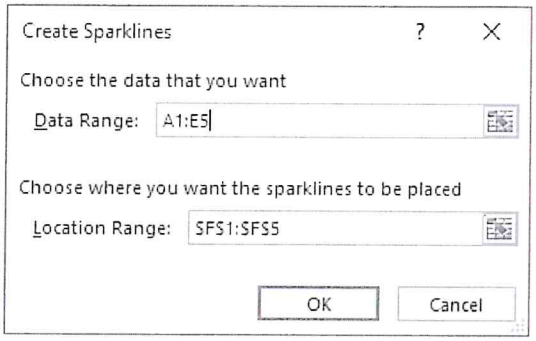
Report – Sparklines

Sparklines are miniature charts contained in a single cell. These micro-charts help visually analyze single data sets. (Excel 2010 and later)



Insert a Sparkline into your workbook:

1. Select the data range you wish to chart.
2. Click the **Insert** tab.
3. Under the **Sparklines** section **[A]**, select **Line, Column,** or **Win/Loss** to open the **Create Sparklines** dialog box. The range you selected will already be filled in the **Data Range** field.
4. Click on the cell(s) where you want the Sparkline to appear and click **OK**.



Line

	A	B	C	D	E	F	G
1	6.00%	7.00%	10.00%	-8.00%	4.00%		
2	-8.00%	5.00%	-76.00%	25.00%	78.00%		
3	6.00%	10.00%	25.00%	-21.00%	18.00%		
4	34.00%	12.00%	-4.00%	90.00%	32.00%		
5	5.00%	-2.00%	4.00%	-3.00%	1.00%		
6							

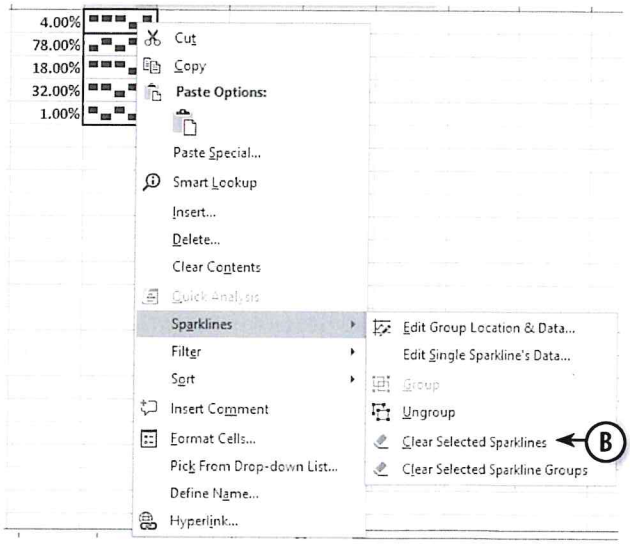
Column

	A	B	C	D	E	F	G
1	6.00%	7.00%	10.00%	-8.00%	4.00%		
2	-8.00%	5.00%	-76.00%	25.00%	78.00%		
3	6.00%	10.00%	25.00%	-21.00%	18.00%		
4	34.00%	12.00%	-4.00%	90.00%	32.00%		
5	5.00%	-2.00%	4.00%	-3.00%	1.00%		
6							

Win/Loss

	A	B	C	D	E	F	G
1	6.00%	7.00%	10.00%	-8.00%	4.00%		
2	-8.00%	5.00%	-76.00%	25.00%	78.00%		
3	6.00%	10.00%	25.00%	-21.00%	18.00%		
4	34.00%	12.00%	-4.00%	90.00%	32.00%		
5	5.00%	-2.00%	4.00%	-3.00%	1.00%		
6							

To remove a Sparkline, right-click the cell that contains a sparkline, select Sparklines, then select **Clear Selected Sparklines [B]**.



Notes

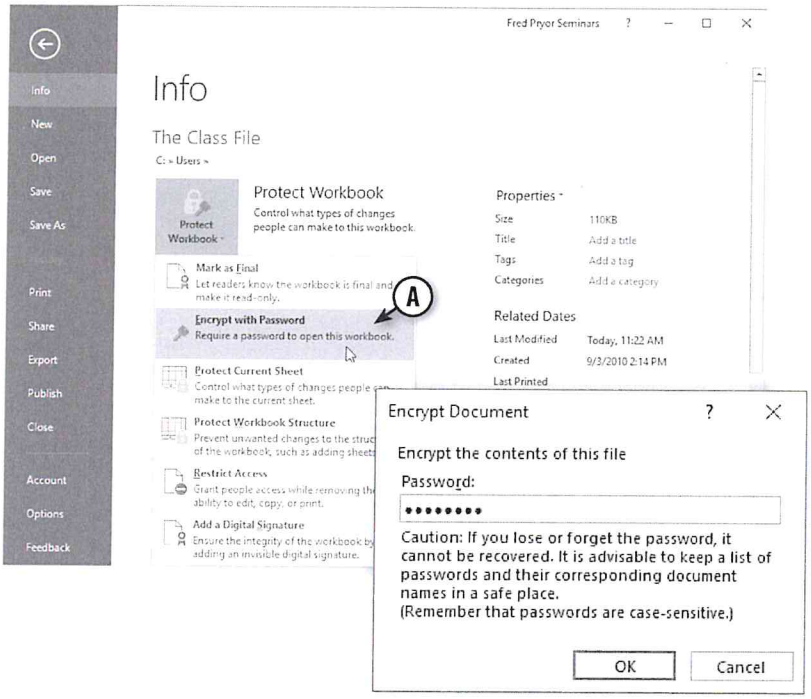
Protect – Secure Your Data

Before a worksheet is distributed to the field, it needs to be protected. Decide which users should have what permissions before the workbook is copied to a shared server location or emailed out for review.

File Protection:

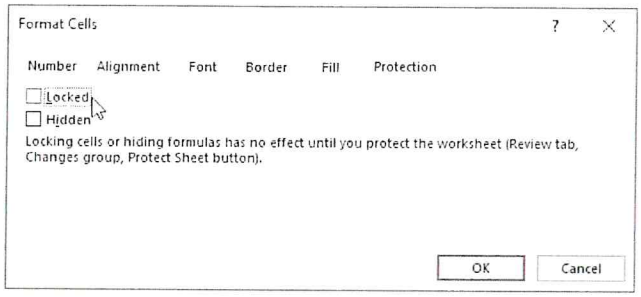
1. Click **the File tab.**
2. **Click Encrypt with Password [A]** from the **Protect Workbook** dropdown menu.
3. Enter a **Password** to open and/or modify your workbook.
4. Click **OK**.

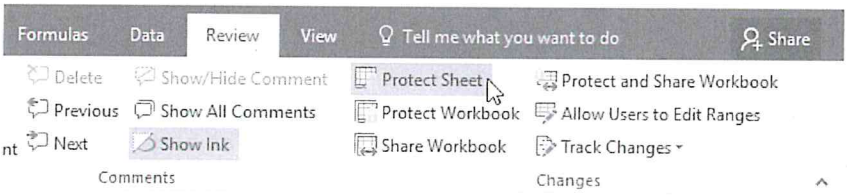
There is no way to recover a lost password!

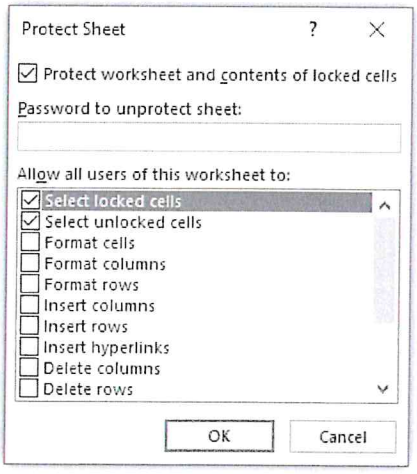


Cell Protection:

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







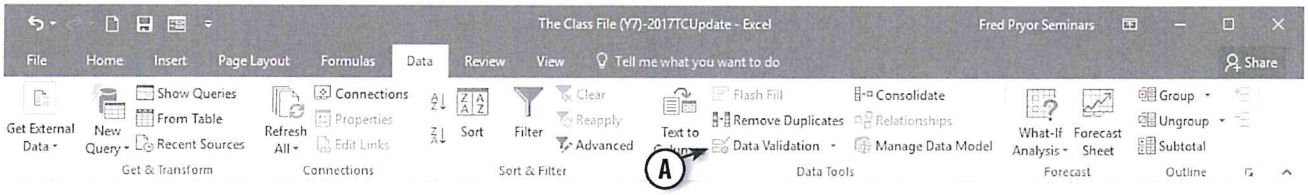
Find more options in the **Review** tab.

1) unlock changeable cells

2) Protect the Sheet

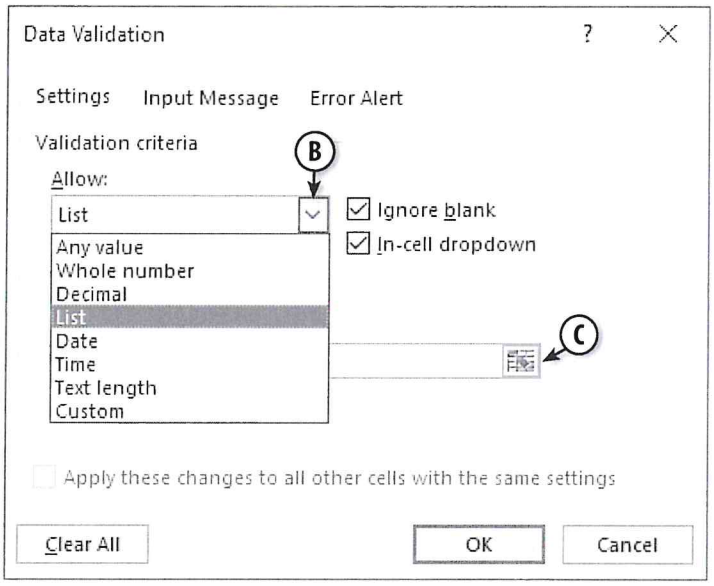
Protect – Data Validation

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

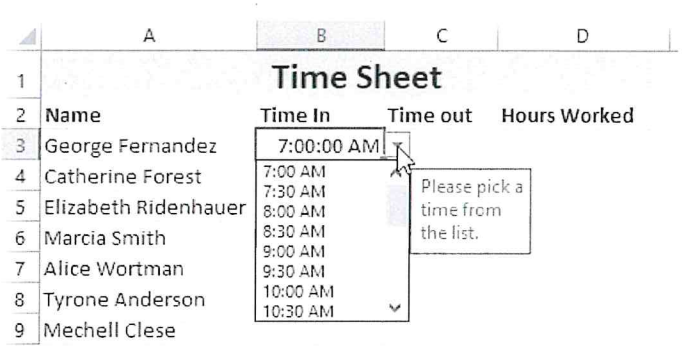


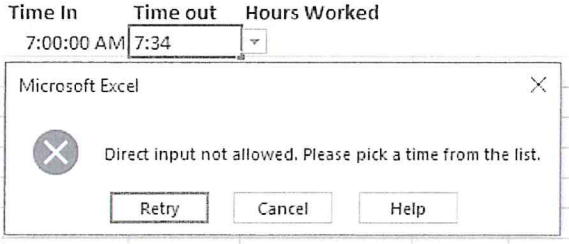
Data validation features include:

- Messages that describe acceptable data parameters
- Rejection of improperly formatted data
- Correction of data to a particular format
- Error messages generated upon incorrect data entry
- A dropdown list of acceptable data entries



1. Highlight the cells where data validation will be applied.
2. On the **Data** tab, in the **Data Tools** group, click the **Data Validation** button **[A]**.
3. Select the validation criteria **[B]**. In this example, **List** was selected to create a dropdown list of selectable options.
4. Provide any additional parameters **[C]**. In this example, the appropriate values for the dropdown list were identified in the **Source** field.
5. Create an **Input Message** to guide those who will enter data in the sheet.
6. Click the **OK** button.





Data Validation can also be used to find and circle invalid data within a worksheet.

Power Skills – Advanced Functions

IF Function

	A	B	C	D	E	F	G
1	Advertising Accounts Receivable						
2	*Current Date:*						
3	Invoice Number	Invoice Date	Customer Name	Amount	Invoice Due Date	Age	No. of Days Overdue
4	92334	06/29/10	Village Reader	$ 577.82	invoice date + 30	todays date - invoice	Age - 30
5	92356	07/17/10	RAW Enterprises, LLC	$ 264.76			
6	92362	08/01/10	Advertising Concepts	$ 810.21			
7	92379	06/05/10	NYNEX	$ 334.00			
8	92393	08/03/10	Poetential Unlimited	$ 86.50			
9	92407	06/23/10	Young Upstart	$ 2,595.00			
10	92421	08/10/10	Mass Appeal, Inc.	$ 95.15			

Greater Than → Less Than → Greater Than or Equal To → Not Equal To → Is Blank

>	<	>=	<>	""

Days Overdue – Enhanced

"" = creating a blank in an excel formula

invoice date + 30

=todays date - invoice date

Due date = B4 +30 -

Age - = $B$4 -

# of Days overdue - B4 -30

=IF(F4>30)

Power Skills – Use Advanced Functions

VLOOKUP Function

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

	A	B	C	D	E	F
1						
2	**Commission Rate**	10%				
3						
4	**Salesperson**	**Sales**	**Quota**	**Commission**	**Bonus**	**Total Pay**
5	Jim Bruce	$6,598.00	$3,000.00	=(B5-C5)$B$2	V-LOOKUP	
6	Mark Sanders	$6,059.00	$4,000.00			
7	Carmen Foster	$4,895.00	$5,000.00			
8						
9						
10	**Bonus Table**					
11	**Quota Level**	**Bonus**				
12	$2,000.00	$25.00				
13	$3,000.00	$50.00				
14	$4,000.00	$75.00				
15	$5,000.00	$100.00				
16	$6,000.00	$125.00				

=VLOOKUP C6, $A$13:$B$17, 2

Bonus *(E5)*: =IF(B5>C5, (B5-C5)$B$2), 0)

=VLOOKUP(WHAT, WHERE, WHICH)

What = What are you looking up?
Where = Where are you looking it up?
Which = Which column number (in your table) do you want to return data from?
There's an optional fourth argument that is only needed if an exact match is required.

Bonus *(Enhanced)*

<=
<

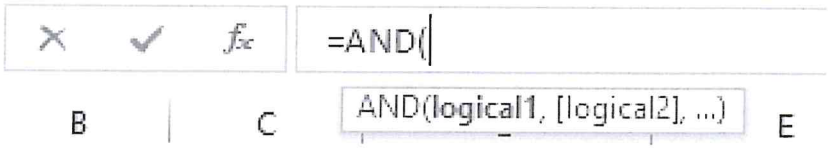
=IF(B5>C5, (B5-C5)$B$2), 0) VLOOKUP (C6, $A$13:$B$17, 2)

=

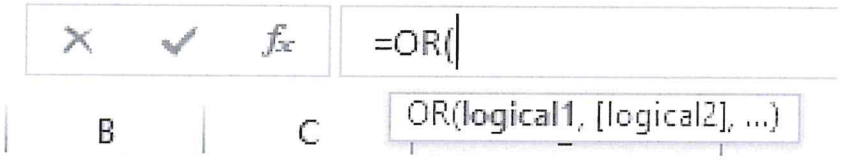
IF (B5>=C5, VLOOKUP (C5, Bonus, 2), 0

Power Skills – AND and OR Functions

The **AND** function returns **TRUE** if all of its arguments are **TRUE**; it returns **FALSE** if at least one argument is **FALSE**.



The **OR** function returns **TRUE** if at least one argument is **TRUE**; it returns **FALSE** only if all arguments are **FALSE**.



	A	B	C	D
1	Time Sheet			
2	Name	Time In	Time Out	Hours Worked
3	Bill Stevenson	8:00 AM		
4	Carol Miller	9:00 AM		
5	Randy Howard			
6	Amy Moore			
7	Steve Richards			
8	Jim Stewart			
9	Julie Reynolds			

Using **AND:**

Using **OR:**

=VLOOKUP (, D23:D26, 3)

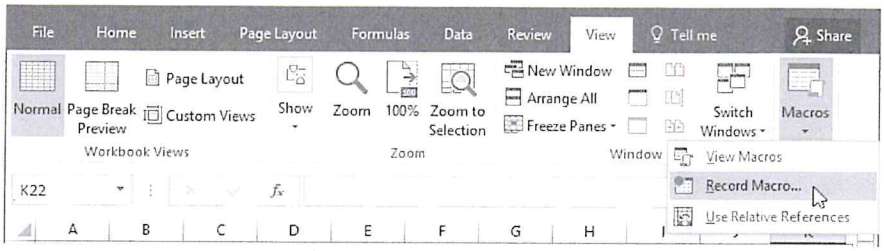
Notes

Can we use macros for Mail Merge (Access)

Automate – Understanding Macros

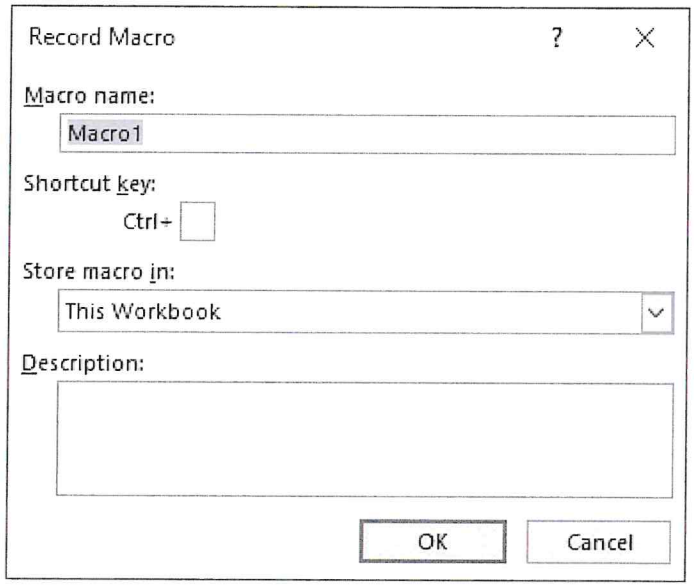
What Is a Macro?

Think of a macro as a video recording of keystrokes and mouse clicks that you can play back at any time. Any repetitive set of tasks that you perform exactly the same way every time makes a good candidate for a macro.



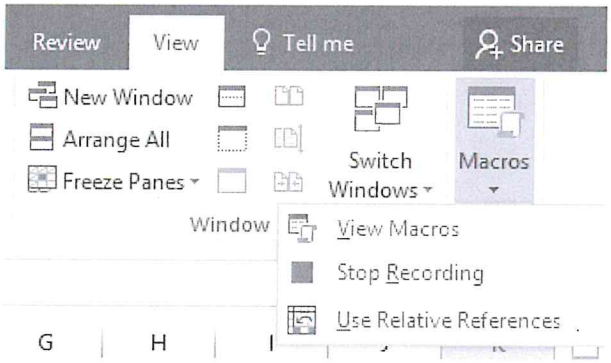
Record a macro:

1. Click the **View** tab.
2. Click the **Macros** dropdown arrow.
3. Select **Record Macro**.

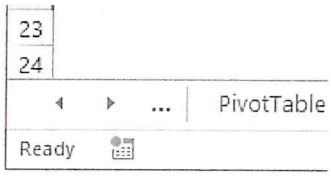


4. Name the Macro.
5. Assign a shortcut.
6. Select Macro **storage** location.
7. Click the **OK** button.

8. Perform the commands you want to record.
9. Click the **Macros** dropdown arrow.
10. Select **Stop Recording**.



If not already available, add the **Macro** button to the **Status Bar** via the right-click menu!

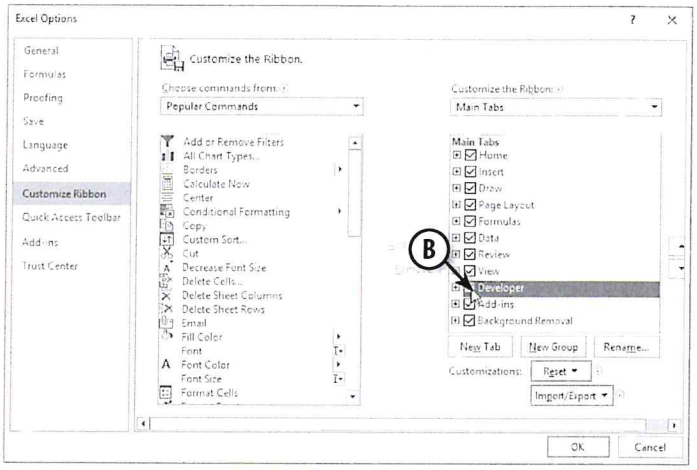


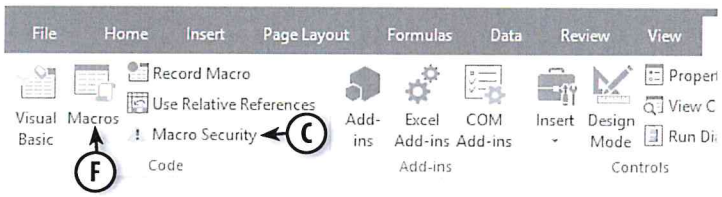
Automate – Troubleshoot Macros

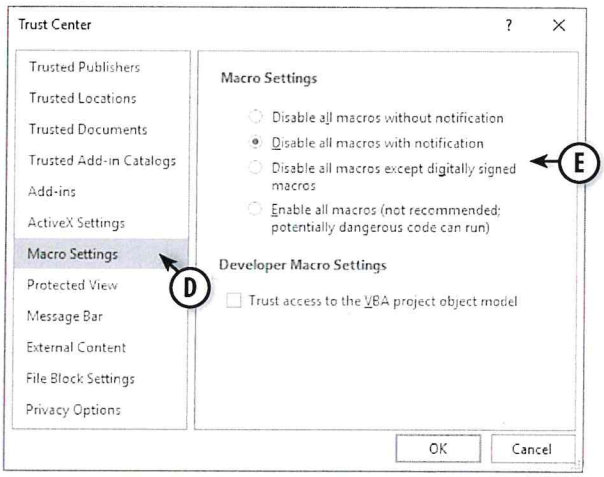
If an Excel file is saved as a **Macro-Enabled Workbook**, but the macros do not run as expected, activate the **Developer** tab for more options.

Show Developer tab:

1. Click the **File** tab.
2. Click the **Options** button **[A]**.
3. In the **Customize Ribbon** panel, make sure that the **Developer** tab has a checkmark beside it **[B]** in the **Customize the Ribbon** pane.
4. Click the **OK** button.





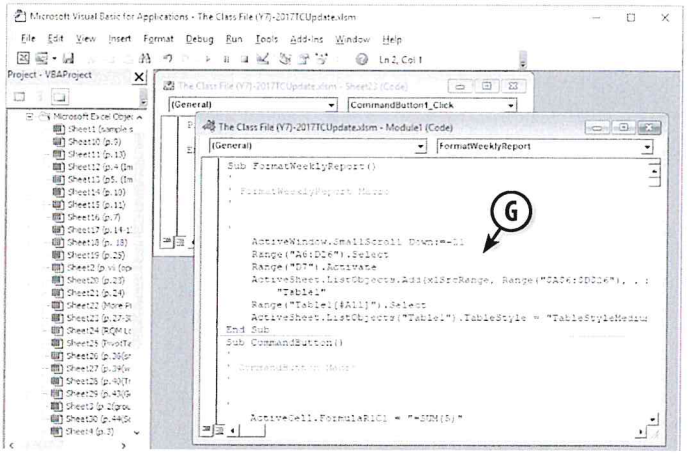


Macro Security:

1. Click on the **Macro Security** button **[C]** on the **Developer Tab** to open the **Macro Settings** panel **[D]**.
2. Adjust the settings by selecting radio buttons in each section **[E]**.
3. Click the **OK** button.

Visual Basic Editor:

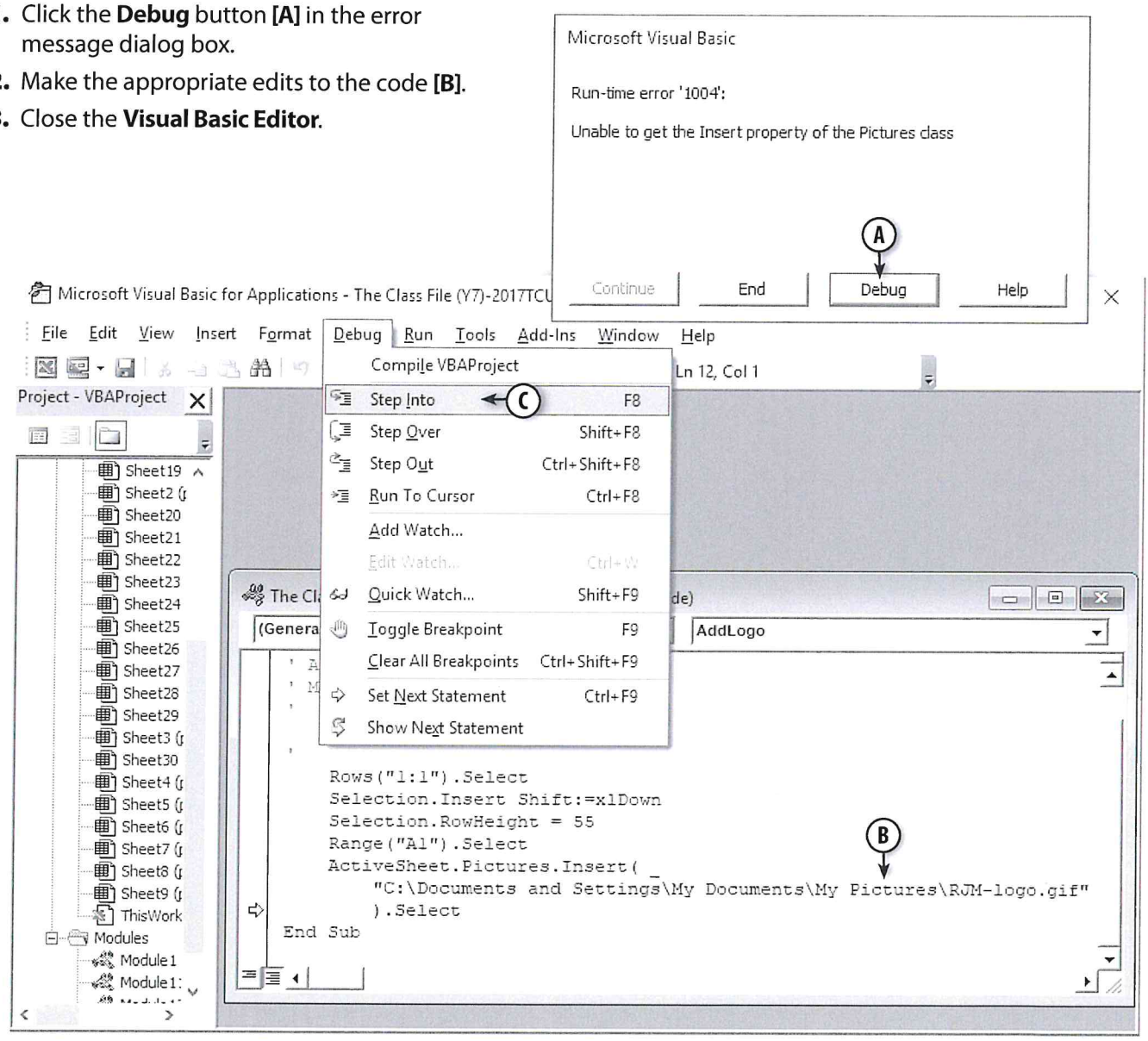
1. On the **Developer** tab, in the **Code** group, click the **Macros** button **[F]**.
2. Select the **Macro** to be edited.
3. Click the **Edit** button.
4. Modify the **VBA** code **[G]**.
5. Close the **Visual Basic Editor**.



Automate – Debug Macros

When a computer program starts to run and then fails part way through the process, the problem is generally the result of a programming error, or "bug," in the coding. Macros are just simple programs, and as such, are subject to the same kinds of errors. To correct these problems in macros, use the Visual Basic Editor to "debug" them.

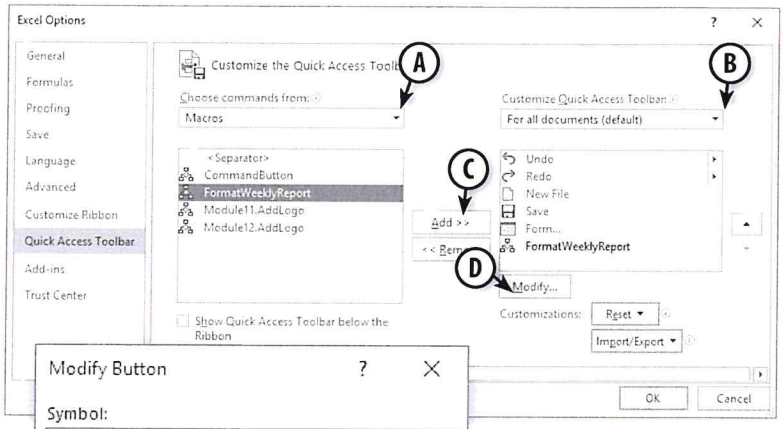
1. Click the **Debug** button **[A]** in the error message dialog box.
2. Make the appropriate edits to the code **[B]**.
3. Close the **Visual Basic Editor**.

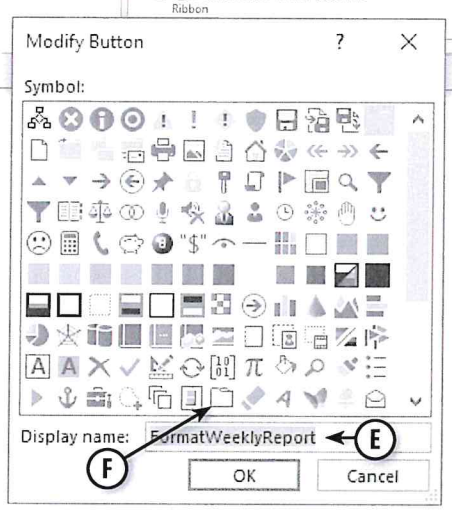


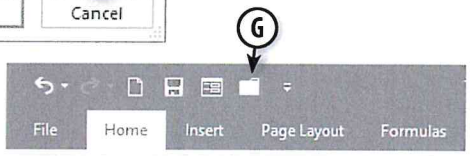
Use the **Step Into Command [C]** to assist with troubleshooting efforts.

Automate – Launch a Macro with a Button

There are many ways to run a macro. In addition to activating them with keyboard shortcuts, here are two more powerful methods.

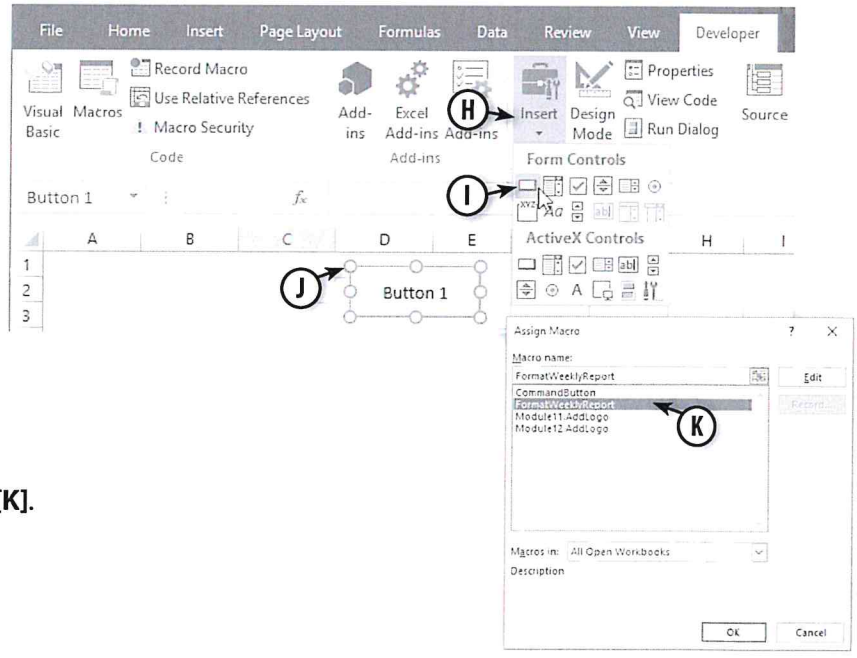






Add Macros to the QAT:

1. Click the **File** tab.
2. Click the **Excel Options** button.
3. In the **Customize** panel, select **Macros** from the **Choose** command from dropdown menu **[A]**.
4. In the **Customize Quick Access Toolbar** dropdown, select **For all documents (default)** **[B]**.
5. In the left pane, select the **macro** to be added to the **QAT**.
6. Click the **Add** button **[C]**.
7. Click the **Modify** button beneath the right pane **[D]**.
8. Type a name for the shortcut in the **Display name** field **[E]**.
9. Select an image for the shortcut in the **Symbol** pane. In this example, a smiley face was selected **[F]**.
10. Click the **OK** button.
11. Click the **OK** button in the **Excel Options** window.
12. Review the **QAT** to see the macro's shortcut with the selected icon button **[G]**.



Add Macro Buttons to a worksheet:

1. On the **Developer** tab, in the **Controls** group, click the Insert dropdown button **[H]**.
2. Click the **Button form control** **[I]**. Note that both **Legacy** and **ActiveX** options are available for this control.
3. Click and drag to draw the button on the worksheet **[J]**.
4. Select a macro to assign to the button **[K]**.
5. Click the **OK** button.
6. Rename the button.

Appendix – Useful Macro Shortcuts

Open Macro Dialog Box	Alt + F8
Open Visual Basic Editor	Alt + F11
Launch Step Into (while in the Visual Basic Editor)	F8
Close and Return to Microsoft Excel (from the Visual Basic Editor)	Alt + Q

Unassigned Excel Keystrokes

The following keystroke combinations are not assigned to any default functions by Microsoft in Excel 2016. That makes them good choices when assigning keystrokes to your macros.

Ctrl Commands	Alt Commands	Ctrl + Shift Commands
CTRL + j	Alt + c	Ctrl + Shift + c
CTRL + m	Alt + d	Ctrl + Shift + d
CTRL + q	Alt + e	Ctrl + Shift + e
	Alt + g	Ctrl + Shift + g
	Alt + h	Ctrl + Shift + h
	Alt + i	Ctrl + Shift + i
	Alt + j	Ctrl + Shift + j
	Alt + k	Ctrl + Shift + k
	Alt + m	Ctrl + Shift + m
	Alt + n	Ctrl + Shift + n
	Alt + r	Ctrl + Shift + q
	Alt + s	Ctrl + Shift + r
	Alt + v	Ctrl + Shift + s
	Alt + w	Ctrl + Shift + v
	Alt + x	Ctrl + Shift + w
	Alt + y	Ctrl + Shift + x
	Alt + z	Ctrl + Shift + y
		Ctrl + Shift + z

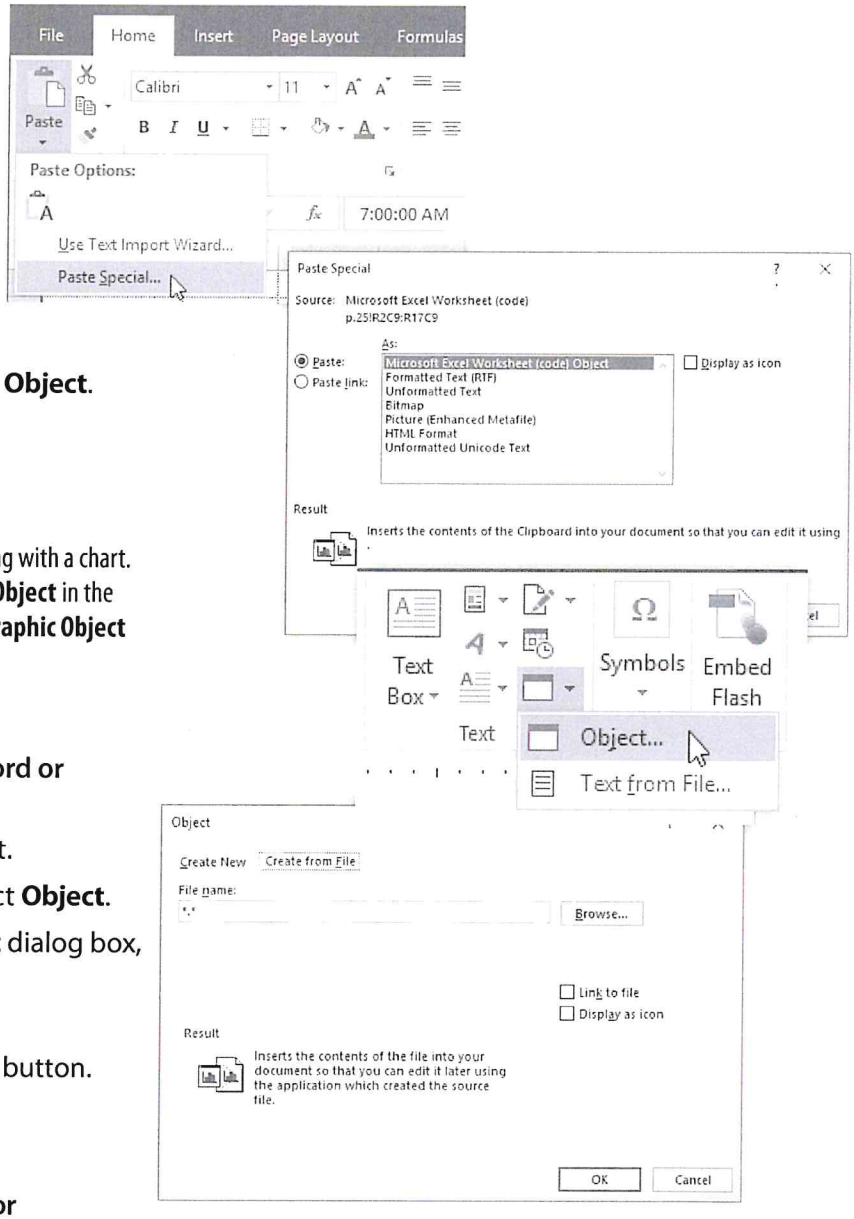
Appendix – Paste Excel Spreadsheets into Word or PowerPoint

In Excel:

1. Select the cells you want to be copied.
2. Click the **Copy** button.

In Word or PowerPoint:

1. Click in the document where the selected cells should be inserted.
2. Click the **Paste** dropdown arrow.
3. Select **Paste Special**.
4. Select **Microsoft Office Excel Worksheet Object**.
5. Choose **Paste** or **Paste link**.
6. Click **OK**.



BRIGHT IDEA

Follow the same basic procedure for working with a chart. Just select **Microsoft Office Excel Chart Object** in the dialog box in Word, or **Microsoft Office Graphic Object** in PowerPoint.

Insert an Excel spreadsheet or chart into Word or PowerPoint:

1. Open the **Word** or **PowerPoint** document.
2. On the **Insert** tab, in the **Text** group, select **Object**.
3. On the **Create** from **File** tab of the **Object** dialog box, click the **Browse** button.
4. Select the spreadsheet to be inserted.
5. In the **Browse** dialog box, click the **Insert** button.
6. Click the **OK** button.

Drag and drop an Excel element into Word or PowerPoint:

1. Arrange both windows so they are visible at the same time.
2. Select the **Excel** element.
3. Drag the element with your RIGHT mouse button, and drop it on the **Word** page or **PowerPoint** slide.
4. Select **Copy Here**.

BRIGHT IDEA

Check the **Link to File** box if you want the embedded spreadsheets to update when the original is changed. Click the **Display as icon** checkbox when you want to only show an icon.

CAUTION!

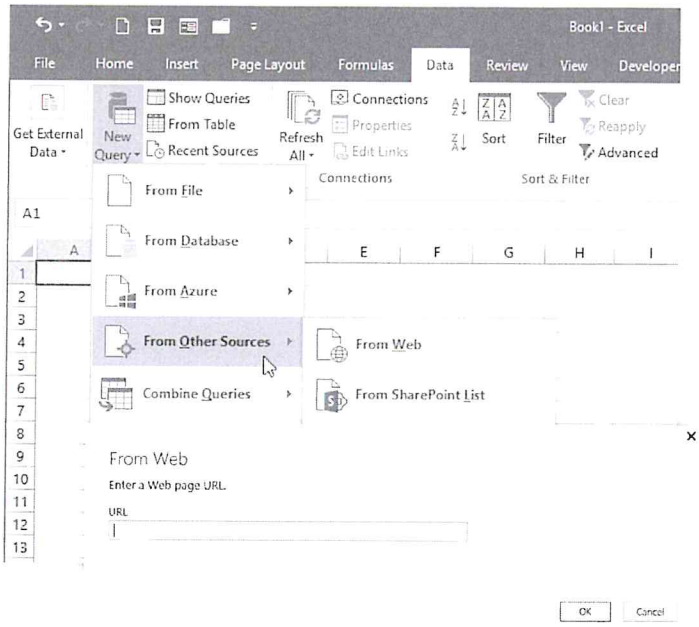
If you drag with the left mouse button instead of the right, you will MOVE the element instead of copying it.

Appendix – Get Data From an External Query

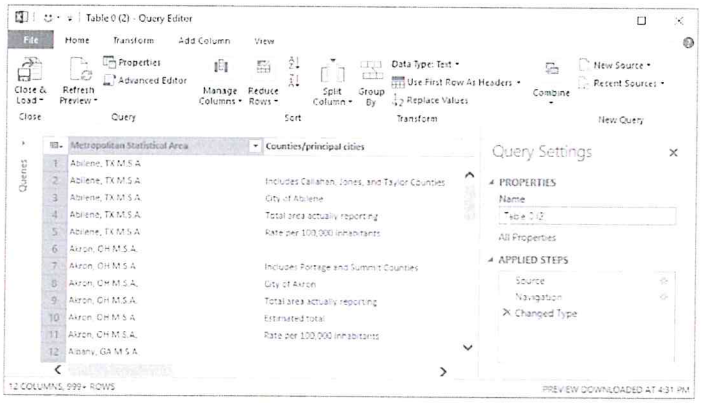
An external query pulls information into Excel from one or more external sources at specified intervals. This feature can help track information such as stock prices, or sports scores on a Website, or keep your sales quotes competitive by using an internal database's most current prices.

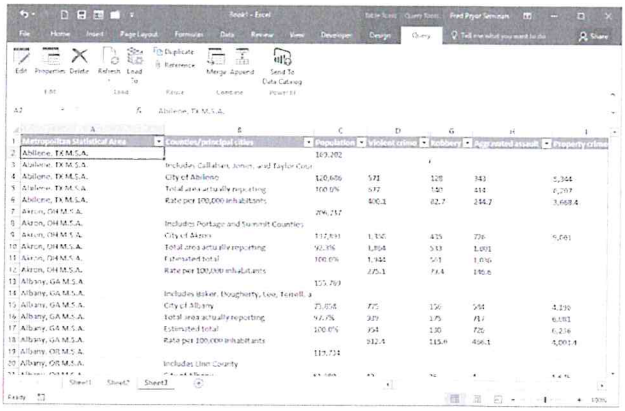
To set up a query:

1. On the **Data** tab, in the **Get & Transform** group, open the **New Query** dropdown.
2. Select the source of your data. In this example, we want to pull information from a web site, so we will select **from Web** under **From Other Sources**.
3. In the **URL** field, type the Web address for the page that contains the information to be pulled into Excel. Click **OK**
4. In the **Navigator** pane, click the table or item that contains the data in the left pane. An example of the data will appear in the right pane.
5. Click **Load**.
6. The data will be pulled into your workbook.

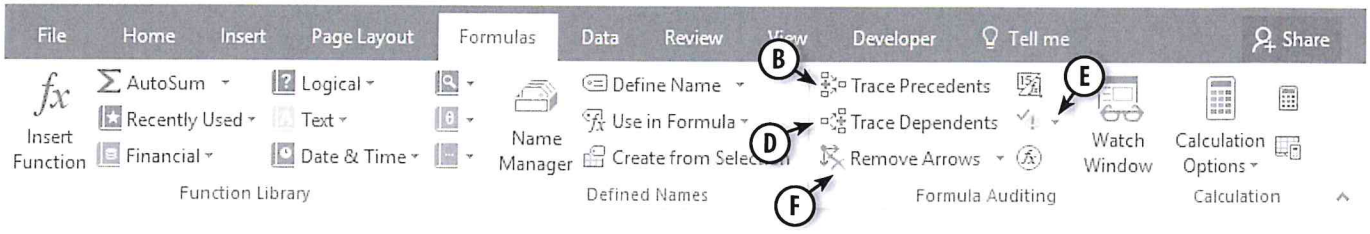


Click **Edit** in the **Navigator** dialog to open the **Query Editor** and specify even more options for customizing what information your external query should use.





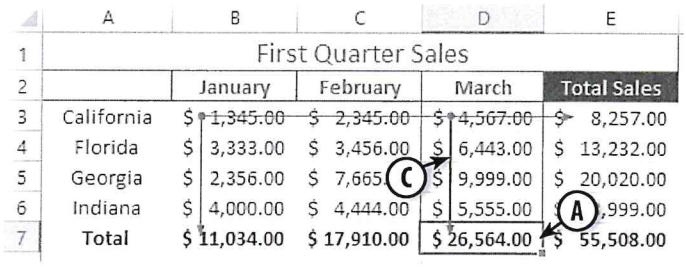
Appendix – Trace Cell Relationships



Trace cell precedents:

1. Select the cell that contains the formula to be traced **[A]**.
2. On the **Formulas** tab, click the **Trace Precedents** button **[B]**.
3. Review the **Precedence Markings [C]** to determine on which cells the data in the selected cell depend.

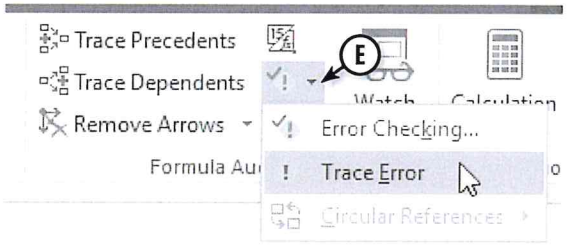
   Precedence Markings:
   - Blue arrows show cells with no errors.
   - Red arrows show cells that cause errors.
   - Black arrows point from the selected cell to a worksheet icon if a cell on another worksheet or workbook references the selected cells.
4. Click **Trace Precedents** again to identify the next level of cells that provide data to the active cell.



	A	B	C	D	E
1	First Quarter Sales				
2		January	February	March	Total Sales
3	California	$ 1,345.00	$ 2,345.00	$ 4,567.00	$ 8,257.00
4	Florida	$ 3,333.00	$ 3,456.00	$ 6,443.00	$ 13,232.00
5	Georgia	$ 2,356.00	$ 7,665.00	$ 9,999.00	$ 20,020.00
6	Indiana	$ 4,000.00	$ 4,444.00	$ 5,555.00	$ 13,999.00
7	Total	$ 11,034.00	$ 17,910.00	$ 26,564.00	$ 55,508.00

Trace cell dependents:

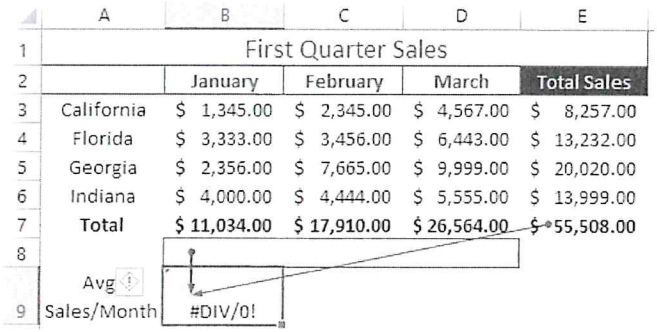
1. Select the cell that contains the formula to be traced.
2. On the **Formulas** tab, in the **Formula Auditing** group, click the **Trace Dependents** button **[D]**.
3. Click the **Trace Dependents** button again to move to the next level of dependency.



Trace a cell error:

1. Select the cell that contains the error to be traced.
2. Click the **Error Checking** dropdown arrow **[E]**.
3. Select **Trace Error**.

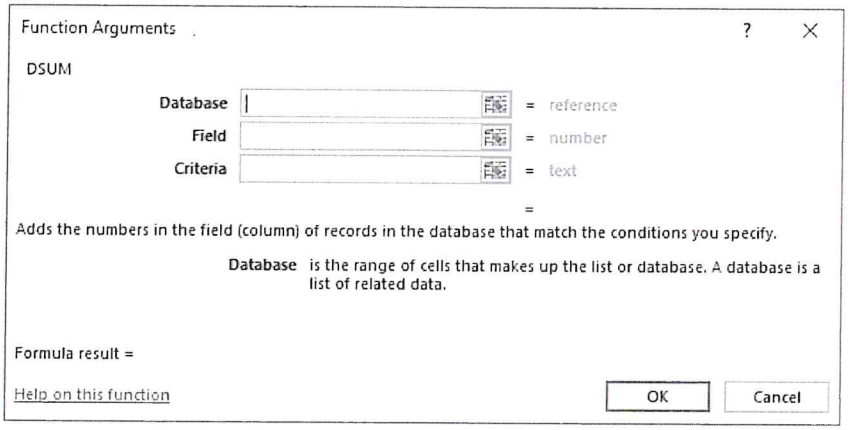
Remove Tracer Arrows: click **Remove Arrows [F]**.



	A	B	C	D	E
1	First Quarter Sales				
2		January	February	March	Total Sales
3	California	$ 1,345.00	$ 2,345.00	$ 4,567.00	$ 8,257.00
4	Florida	$ 3,333.00	$ 3,456.00	$ 6,443.00	$ 13,232.00
5	Georgia	$ 2,356.00	$ 7,665.00	$ 9,999.00	$ 20,020.00
6	Indiana	$ 4,000.00	$ 4,444.00	$ 5,555.00	$ 13,999.00
7	Total	$ 11,034.00	$ 17,910.00	$ 26,564.00	$ 55,508.00
8					
9	Avg Sales/Month	#DIV/0!			

Appendix – D-Functions: DSUM, DCOUNT, DCOUNTA, DMIN, DMAX & DAVG

=DSUM



Category: Database

Purpose: Totals all the values in a column that meet the specified criteria.

Syntax: `=DSUM(database,field,criteria)`

Arguments

Database: The range of cells.

Field: The column heading (or the number of that column within the range) to be totaled.

Criteria: The cells containing the column heading reference and the search criteria.

Variations

DCOUNT: `=DCOUNT(database,field,criteria)`
Counts the number of cells in the range that meet the criteria.

DCOUNTA: `=DCOUNTA(database,field,criteria)`
Counts non-blank cells in the field (column) of records in the database that match the conditions specified conditions.

DMIN: `=DMIN(database,field,criteria)`
Displays the lowest value in the range that still meets the criteria.

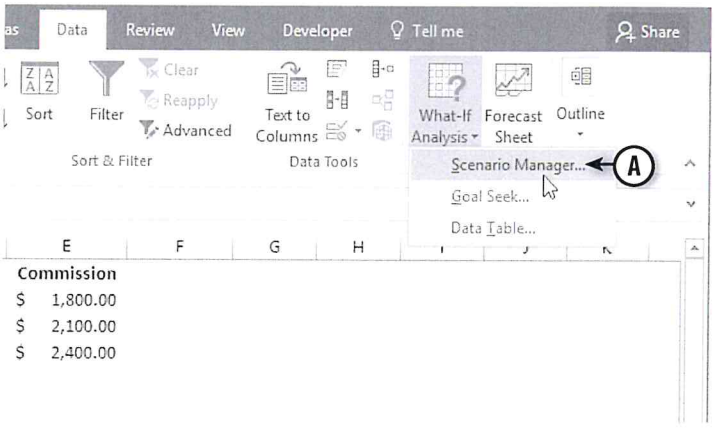
DMAX: `=DMAX(database,field,criteria)`
Displays the highest value in the range that still meets the criteria.

DAVERAGE: `=DAVERAGE(database,field,criteria)`
Averages the values in a column in a list or database that match specified conditions.

Appendix – Scenarios

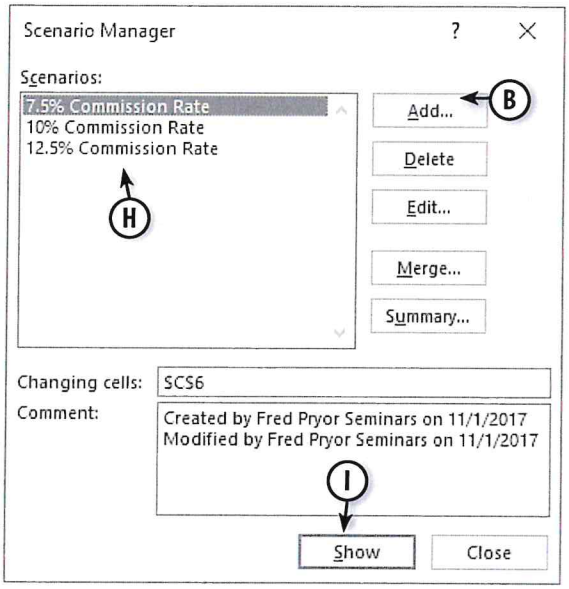
Set up a scenario:

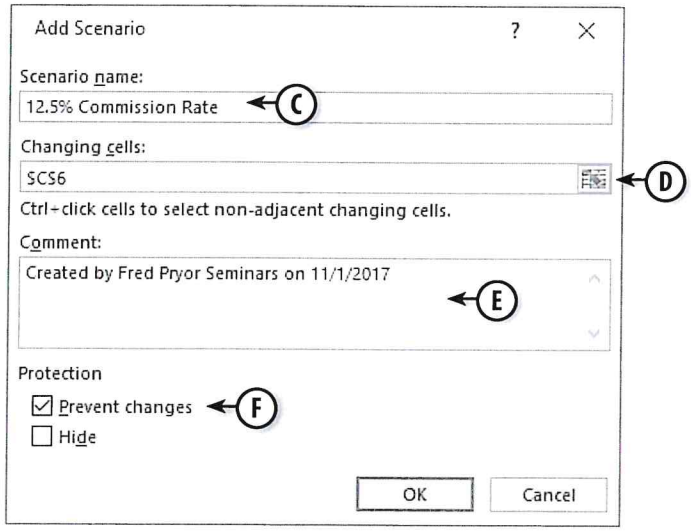
1. On the **Data** tab, in the **Data Tools** group, select **Scenario Manager** from the **What-If Analysis** dropdown menu **[A]**.
2. In the **Scenario Manager** dialog box, click the **Add** button **[B]**.
3. In the **Scenario** name field **[C]**, type a name for the scenario.
4. Select the cells for **Changing** cells **[D]**.
5. Add comments as needed **[E]**.
6. Assign protection settings **[F]**.
7. Click the **OK** button.
8. Enter the value to be used in the scenario **[G]**.
9. Click the **OK** button.

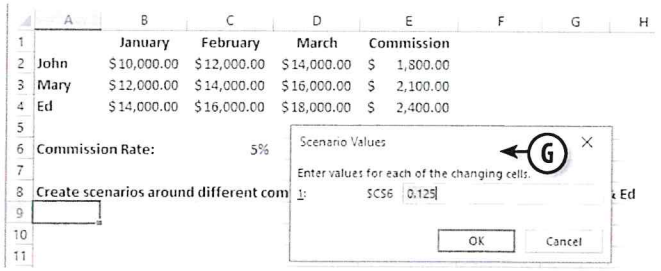


View a scenario:

1. On the **Data** tab, in the **Data Tools** group, select **Scenario Manager** from the **What-If Analysis** dropdown menu **[A]**.
2. In the **Scenario Manager** dialog box **[H]**, click the scenario to be viewed.
3. **Click the Show** button **[I]**.



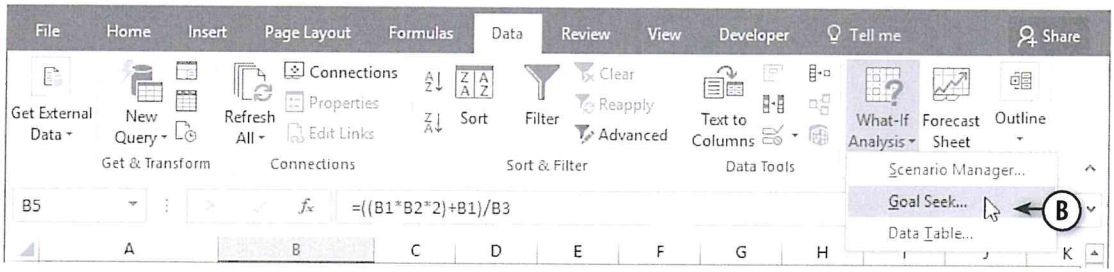




Appendix – Goal Seek

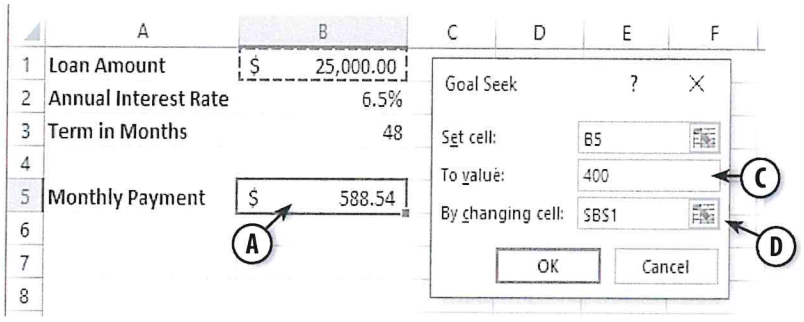
Goal Seek

Goal Seek works an equation backwards, with Excel changing one variable to make the final calculation yield the specified value.



Solve a problem using Goal Seek:

1. Set up a data set with the formulas already in place. Select the cell with the formula you want to vary **[A]**.
2. On the **Data** tab, select **Goal Seek** from the **What If Analysis** dropdown button **[B]**.
3. In the **Set Cell Field**, select the cell for which the final value will be specified.
4. In the **To value field [C]**, enter the value the cell should have.
5. In the **By changing cell field [D]**, select the cell Excel should adjust to get the desired result.

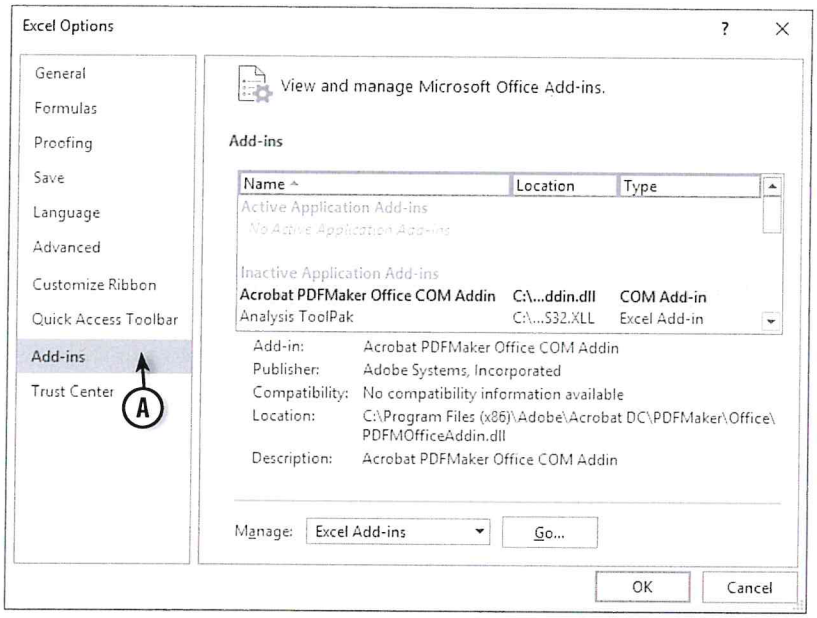


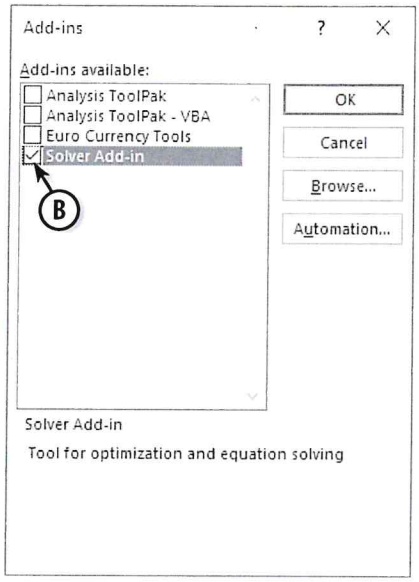
If you have more than one variable use **Solver**.
See Appendix page 38.

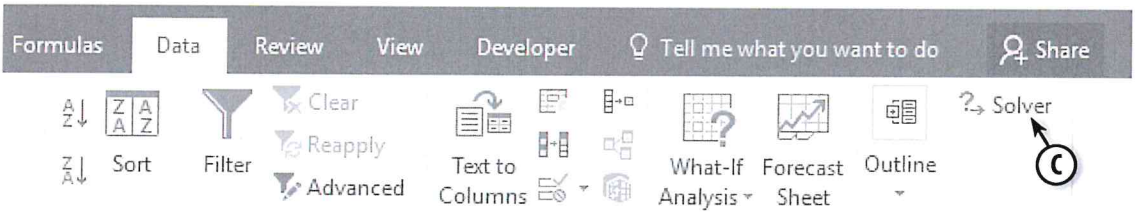
Appendix – Solver

What Is Solver?

Solver is an optional add-in from Microsoft that finds answers to problems that have multiple variables.

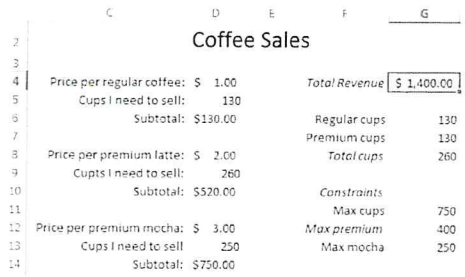


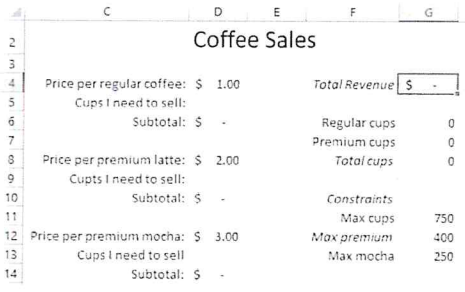




Install the Solver Add-In:

1. Click the **File** tab.
2. Click the **Options** button.
3. Click **Add-Ins [A]**.
4. From the **Manage** dropdown arrow, select **Excel Add-ins.**
6. Click the **Go** button.
7. Select **Solver Add-in [B]**.
8. Click the **OK** button.
9. Click the **Yes** button. Solver is installed on the **Data** tab **[C]**.





Appendix – Advanced Filter Criteria

Filtering Criteria	
=	Records that contain a blank.
<>*D	Records that contain text that does not end with the letter D.
Sm*	Records that contain text that begins with the letters SM.
>=p	Records that contain text that begins with the letters P through Z.
=???	Records that contain exactly three letters.
<>??????	Records that do not contain exactly six letters.
<>a*	Records that contain any text except text that begins with the letter A.
<>*d*	Records that do not contain the letter D.
Small	Records that contain text that includes the word Small.
a	Records that contain text that begins with the letter A.

Common Syntax	
= "= "	Used when your criteria needs to start with an equal sign. Example: ="=Smith"
?	Wildcard/placeholder for one and only one character.
*	Wildcard/placeholder for one or more characters.

AND and OR searches		
AND searches	Place criteria all on the same row	<table><tr><th>InStock</th><th>OnOrder</th><th>Discontinued</th></tr><tr><td>=0</td><td>=0</td><td>="=TRUE"</td></tr></table> Show all items that have zero in stock, **and** nothing on order, **and** are discontinued.
OR searches	Place criteria on different rows	<table><tr><th>InStock</th><th>OnOrder</th><th>Discontinued</th></tr><tr><td>=0</td><td></td><td>="=TRUE"</td></tr></table> Show all items that have zero in stock **or** are discontinued.
AND Searches (with multiple criteria for the same column	Create one column for each piece of criteria	<table><tr><th>InStock</th><th>OnOrder</th><th>Discontinued</th></tr><tr><td>=0</td><td>=0</td><td>="=TRUE"</td></tr></table> Show all items that have an in-stock quantity of more than zero **and** less than or equal to five.

Additional Resources

Books

QuickClicks: Excel by CareerTrack

Illustrated reference guides that answer your spreadsheet questions and walk you through every click.

QuickClicks Office Reference Guides by CareerTrack

Illustrated reference guides for Excel, Microsoft Access, Word, PowerPoint and Outlook. Sold individually and in bundles.

Downloadables

Unlocking the Secrets of Microsoft Excel by CareerTrack

A unique "show-me, try-me" approach provides interactive practices that allow you the opportunity to experience new skills in a safe learning environment.

Unlocking the Secrets of Microsoft Suite by CareerTrack

Learn how to set up Microsoft Office applications to meet your personal needs at work or at home.

Unlocking the Secrets of Microsoft PowerPoint
Unlocking the Secrets of Microsoft Outlook
Unlocking the Secrets of Microsoft Access
Unlocking the Secrets of Microsoft Word
Unlocking the Secrets of Microsoft Excel

Budgeting & Finance Templates by CareerTrack

Interactive training program for Managers, Supervisors, and Business Owners using a business budget template.

Templates for Today's Time-Crunched Professional by CareerTrack

Improve efficiency with time management training.

Software

ConceptDraw® Office 3 Project Management Software

ConceptDraw Office is an innovative, comprehensive, and integrated project management software package that helps you achieve your business and project goals. ConceptDraw Office will help you develop, manage, and measure your projects with these three interactive tools:

ConceptDraw MINDMAP: Brainstorming and organization for ideas, data and processes (also sold individually).

ConceptDraw PROJECT: Comprehensive project management tool

ConceptDraw PRO: High-powered drawing and diagramming tool

Additional Resources

Webinars

Advanced Excel® Tips for the Power User

In just one hour of focused advanced Excel training online, go beyond Excel basics and learn the tips and tricks the pros use to unlock the power of the Excel advanced features.

Excel® Dashboard 201: Designing Dynamic Dashboards

Learn the fundamentals of interactive dashboard design to increase user functionality.

60 Minutes of Excel® Secrets

Learn basic through advanced tips on how to get work done faster and easier in Excel.

Microsoft® Excel® Made Easy Series

Microsoft® Excel® Made Easy

Microsoft® Excel® PivotTables Made Easy

Microsoft® Excel® Charts and Graphs Made Easy

Microsoft® Excel® Forms & Reporting Made Easy

Microsoft® Excel® Formulas Made Easy

Microsoft® Excel® Macros Made Easy

Microsoft® Excel® Macros for Finance Professionals

Using macros allows you to quickly work through the tedious setup of your spreadsheets and gets you to what matters faster — the data analysis that drives the bottom line.

Websites

Excel Tips and Tricks - http://www.pryor.com/blog/category/excel/

Read interesting blog articles and tips to get the most out of Excel.

Microsoft Official Help Pages - https://support.office.com/en-US/Excel

Read articles, search topics, view training videos, or contact a support technician (via chat).

Microsoft Training Center - https://support.office.com/en-us/office-training-center/Excel-tips

Read tips and find articles about Excel, written by the people that built it.

Excel Forum - https://www.excelforum.com/

Message boards for community questions and community-sourced answers about many Excel topics.

ExcelFunctions.net - http://www.excelfunctions.net/

Website created to provide help with Excel functions and formulas.

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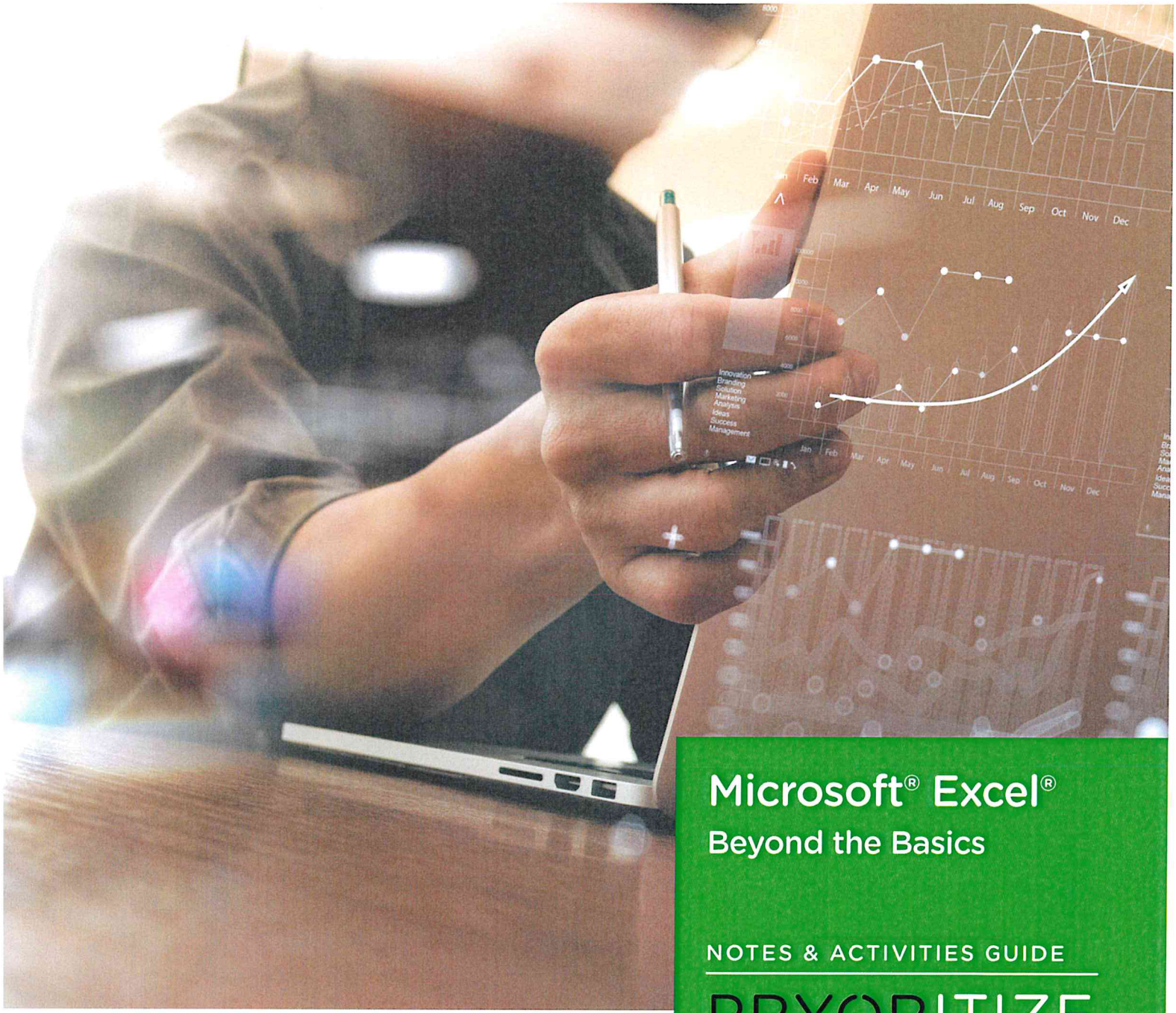

Microsoft® Excel®
Beyond the Basics

NOTES & ACTIVITIES GUIDE

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HY71807B

Optimizing Workbook Structure

Group Worksheets - If several worksheets in the workbook contain similar information such as expenses, sales separated by month, or employee information, it would be most efficient and effective to use the same layout and formatting for all of the sheets. Grouping worksheets is the easiest way to accomplish this.

Calculate

Named Cell Ranges

Naming a "range" - a group of cells - provides many advantages when working in Excel®:

- Creating formulas and functions is easier
- Makes creating data validation dropdown lists and custom AutoFill lists easier
- Allows you to create bookmarks for easier navigation around large or complex workbooks
- Reduces errors – you only have to update the cell references in the named range, and all formulas dependent upon the named range will automatically be updated as well.

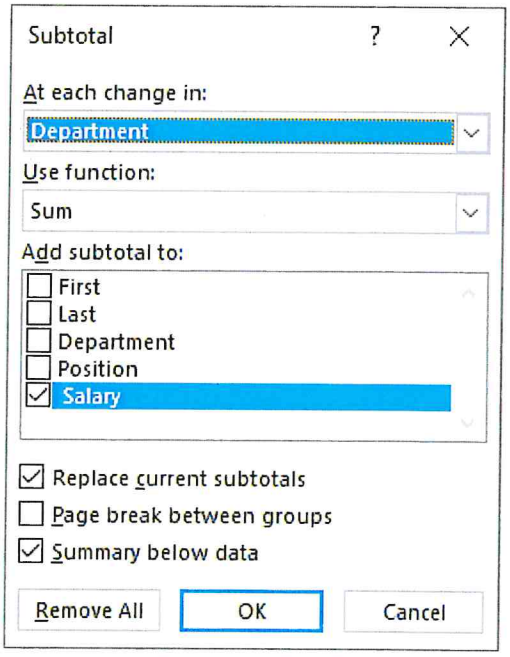
Caution: Use the proper syntax when naming ranges:

- Start the name with a letter, underscore, or backslash.
- Do not start with a number or other special character.
- Do not use spaces.

Subtotals

Excel can automatically calculate subtotals at every change of data in a key column with a single command. This can be a great time-saver.

Be sure to sort your worksheet, first, by the values in the column you wish to subtotal.



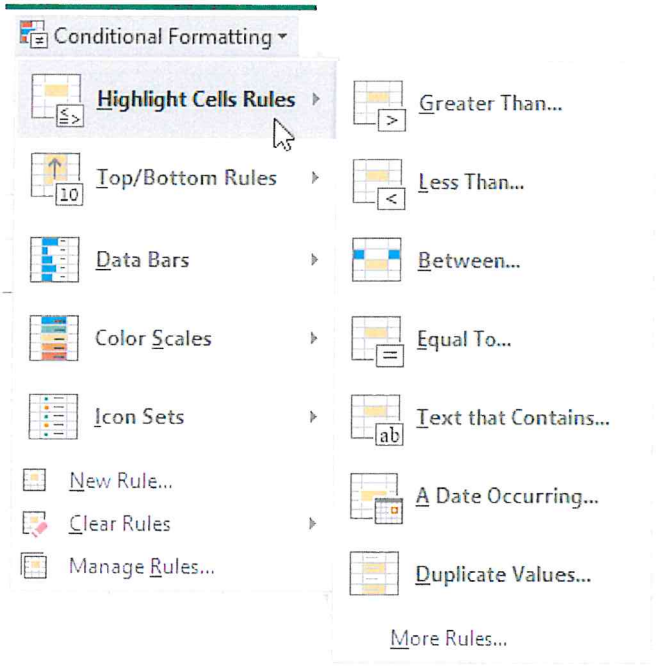
Format

Conditional Formatting

Excel® contains an extremely powerful and flexible tool that allows you to change the appearance of a cell based on its contents.

Use conditional formatting when:

- You want to highlight data outliers (such as highest cost or lowest performers)
- You want to find data that falls in specified ranges (such as before the last price increase, between two prices, or is greater than a competitor's price)
- You want to find duplicates (such as repeat orders or people who signed up twice for an event)



How might you use Conditional Formatting?

List as a Table

Lists can make columns of data both easy to read and functional. A properly formatted tabular list allows the performance of basic data analysis with just a few mouse clicks. Benefits of an Excel table include:

- Tables are easily formatted. Use the **Style Gallery** to quickly design an easy to read and visually pleasing look for your data.
- Headers on Tables automatically freeze, making working with large datasets easier.
- A Table is a "named range" that will adjust automatically when new data is added. In addition, named ranges are created for each column. This makes charts and calculations that reference the named table ranges easy to maintain.
- Tables automatically include useful functions like **Filter, Sort, Total Row**, and formula **AutoFill**.

Text Functions

There is little more frustrating than to finish a project and then realize that an important data formatting requirement was overlooked. Fortunately, Excel is equipped with functions that can make tedious changes quickly and easily.

_____ Capitalizes the first letter in each text string

_____ Changes text to all caps

_____ Changes texts to all lower case

_____ Combines several text strings into one string

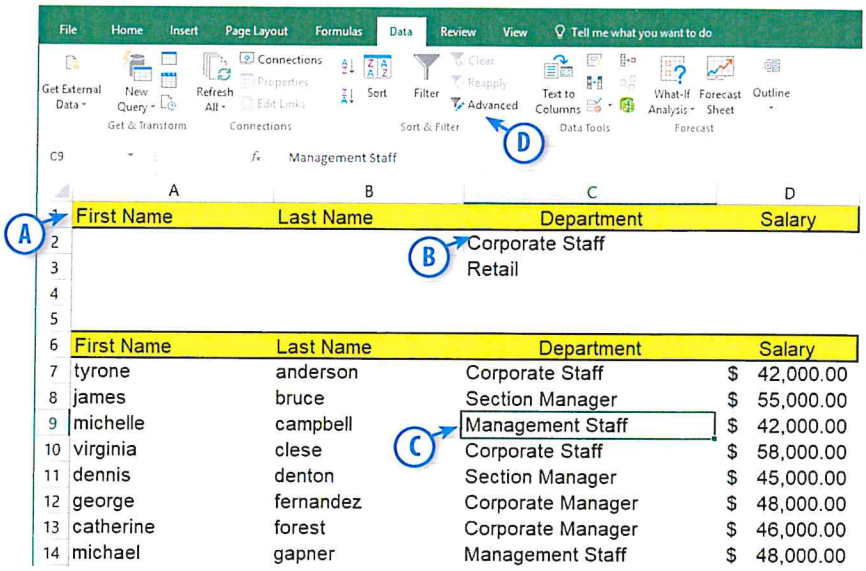
Report

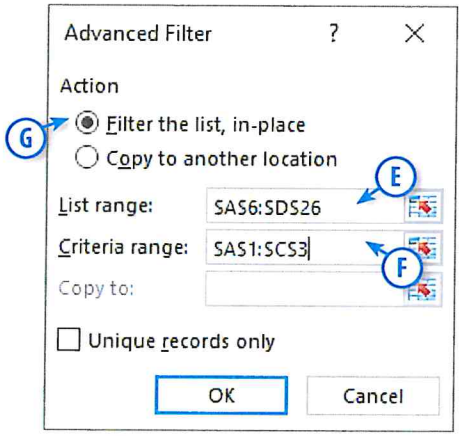
Advanced Filter

Advanced Filter offers more flexibility with regard to the type and number of constraints that can be employed to a filter.

Here are the main elements needed to create an **Advanced Filter**:

- **A.** An additional header row above the data to be filtered where we will specify our filtering criteria.
- **B.** Filtering criteria. Values in the same row are **AND** criteria and those on different rows are **OR** criteria.
- **C.** The column to be filtered.
- **D.** The **Advanced** button that launches **Advanced Filter**.
- **E. List range** will be based on the location of your marquee.
- **F. Criteria range** - The range of cells to be included in the filter)
- **G.** Where you choose the destination of the results.





PivotTables

PivotTables are powerful tools for analyzing data and producing reports. They allow the same information to be viewed in several different ways with just a few mouse clicks.

Four things to consider when creating a PivotTable:

What Are My Row Headers? → What Are My Column Headers? → What Data Am I Analyzing? → Do I Need to Divide the Table?

PivotCharts

PivotTable data can be converted into a special kind of chart called a PivotChart to create an especially powerful impact. Hint! In Excel 2013 and later, you can create a PivotChart directly from your data without creating a PivotTable first. The process is very similar and a PivotTable will be produced at the same time.

PivotTable and PivotChart Fields

PivotTables are built by dragging column data into the appropriate area of the PivotTable Fields pane. These 4 areas are:

Filters – Top-level report filters	**Columns – Data that will populate the Columns of your PivotTable**
Rows – Data that will populate the Rows of your PivotTable	**Values – Data that you wish to be summarized in your PivotTable**

Advanced Functions

IF

	A	B	C	D	E	F	G
1	Advertising Accounts Receivable						
2	*Current Date:*						
3	Invoice Number	Invoice Date	Customer Name	Amount	Invoice Due Date	Age	No. of Days Overdue
4	92334	06/29/10	Village Reader	$ 577.82			
5	92356	07/17/10	RAW Enterprises, LLC	$ 264.76			
6	92362	08/01/10	Advertising Concepts	$ 810.21			
7	92379	06/05/10	NYNEX	$ 334.00			
8	92393	08/03/10	Poetential Unlimited	$ 86.50			
9	92407	06/23/10	Young Upstart	$ 2,595.00			
10	92421	08/10/10	Mass Appeal, Inc.	$ 95.15			

Greater Than → Less Than → Greater Than or Equal To → Not Equal To → Is Blank

Days Overdue – Enhanced _____

VLOOKUP =VLOOKUP(WHAT, WHERE, WHICH)

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

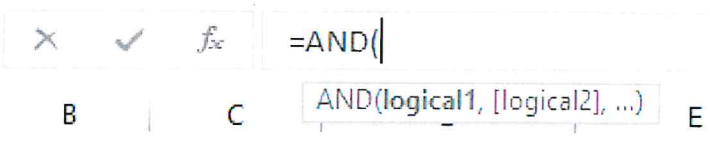
	A	B	C	D	E	F
1						
2	**Commission Rate**	10%				
3						
4	**Salesperson**	**Sales**	**Quota**	**Commission**	**Bonus**	**Total Pay**
5	Jim Bruce	$6,598.00	$3,000.00			
6	Mark Sanders	$6,059.00	$4,000.00			
7	Carmen Foster	$4,895.00	$5,000.00			
8						
9						
10	**Bonus Table**					
11	**Quota Level**	**Bonus**				
12	$2,000.00	$25.00				
13	$3,000.00	$50.00				
14	$4,000.00	$75.00				
15	$5,000.00	$100.00				
16	$6,000.00	$125.00				

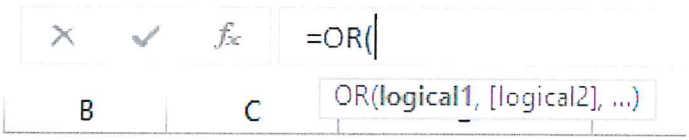
Bonus (E5): _____

AND and OR Functions

The **AND** function returns TRUE if all of its arguments are TRUE; it returns FALSE if at least one argument is FALSE.

The **OR** function returns TRUE if at least one argument is TRUE; it returns FALSE only if all arguments are FALSE.





Using **AND**:

_____

Using **OR**:

_____

	A	B	C	D
1	**Time Sheet**			
2	**Name**	**Time In**	**Time Out**	**Hours Worked**
3	Bill Stevenson	8:00 AM		
4	Carol Miller	9:00 AM		
5	Randy Howard			
6	Amy Moore			
7	Steve Richards			
8	Jim Stewart			
9	Julie Reynolds			

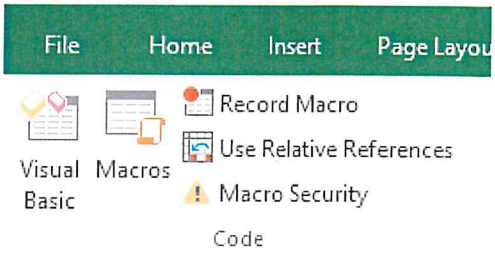
Macros

What Is a Macro?

Think of a macro as a video recording of keystrokes and mouse clicks that you can play back at any time. Any repetitive set of tasks that you perform exactly the same way every time makes a good candidate for a macro.

Macro Security:

You can adjust the macro security settings to specify when macros will run and under what conditions when a workbook is opened. **Disable all macros with notification** is the default Excel setting. Click on the **Macro Security** button on the **Developer Tab** to open the **Macro Settings** panel.



Visual Basic Editor:

The Visual Basic Editor (VBE) is the place where you can see and edit the source code that powers all Macros. It is accessed through the Developer tab and is almost an entirely separate application from Excel itself. From the VBE you can:

- Organize and apply macros to specific sheets and workbooks
- Edit macros using **Visual Basic** code
- Create new macros from scratch without recording in the Excel UI first

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POST-SEMINAR ACTIVITY

Host a Lunch & Learn

Keep the momentum going with a Lunch and Learn "hosted" by Pryor Learning Solutions. Here is a guide to plan and execute an hour-long, self-guided session. Topic ideas include Excel skills that reinforce and compliment the *Excel-The Basics* seminar.

Plan

A successful Lunch and Learn takes foresight and planning. Here are some basic steps you'll want to take:

- Schedule a time and reserve a room and any appropriate equipment needed (such as a computer or video display equipment).
- Finalize details: caterer (if wanted), simple drinks such as coffee and water if attendees will bring their own lunches, budget, topic, incentives if appropriate.
- Promote – Send invitations, "advertise" the event in appropriate communications channels, collect reservations, etc.
- Send reminders day before and day of event.
- Have a little fun – If your work environment is amenable, think about lunch items or activities that fit the "theme" of your topic. Example: Going over formulas? Invite attendees to bring their favorite recipe and then note how building a formula using functions is similar to following a recipe.

Bonus – Pro Tips

- **Hot Tips From Your Team:** Ask everyone to bring their favorite Excel shortcut to share.
- **Most Useful Functions:** Introduce 3-5 of the most common and most used Excel functions with examples of how they are used. Have attendees vote on the ones they would like to learn!
- **Excel Shortcuts:** Introduce several of Excel's most useful shortcuts – both keyboard and via the Excel UI.
- **Chart Design:** Find an expert or a skilled designer in your community to talk about the design aspects of creating impactful charts and graphs. Emphasize skills such as compatible colors, fonts, and layout over Excel steps.

Explore More with Pryor

Microsoft Excel Made Easy - Get familiar with the basics: functions, formulas, commands and more.

Microsoft Excel Formulas Made Easy – Easily automate calculations and tasks to increase efficiency with basic and advanced Excel formulas.

60 Minutes of Microsoft Excel Secrets – Learn to customize, organize and format your spreadsheets with ease.

POST-SEMINAR ACTIVITY

Cut & Save

Get the Most Out of Your Seminar

Here are several exercises to help you solidify and retain the skills taught in *Excel-The Basics*. After a good night's sleep, you'll be ready to hit your desk and try out what you've learned. Refer to your pre-seminar workbook to remind you of your goals and the challenges you identified as most important.

Day After Seminar

- Find the pages in your digital seminar workbook that show your two to three highest priority tasks.
- Follow the steps in your workbook to perform each task on your own data.
- Print just those pages for you to keep beside your workstation as you incorporate the skills in to your daily work.

Week After Seminar

- Using the seminar workbook table of contents or your notes, make a list of 10 additional skills you wish to practice and reinforce.
- Practice two skills each day.
- Open your digital seminar workbook to the skill and follow the steps to perform each task on your own data.
- Print only the pages for skills that you would like to incorporate into your daily work.
- If needed, practice one or two high priority skills each day as well.

Month After Seminar

- Once you are comfortable with your highest priority skills, choose one or two "reach" skills with which you would like to challenge yourself.
- When an opportunity presents itself to practice a reach skill during your work, set aside some extra time to complete the task. For example: You may not usually use Sparklines in your monthly report, but give them a try this month!
- Optional challenge – work through the entire digital seminar workbook, front to back, and quickly apply each skill to a practice worksheet of your own data. If you can recognize and complete at least 75% of the skills, you are ready for Excel Beyond the Basics!

Be Patient! It may take you longer to complete your work as you incorporate new skills, but the time you are taking will be worth it the next time the task comes up! Set aside learning time along with your work as an investment in YOU.

POST-SEMINAR ACTIVITY

You May Also Like

Learning Experts recommend reinforcing new skills with practice and repetition. Listed here are several follow-up courses available with Pryor+ that we recommend as a next step after *Excel - The Basics*.

Have Access to Pryor+?

Here are some resources you may find helpful:

(these are all short 1 minute Online courses available on **Pryor+**)

- Choose Which Part of Your Worksheet to Print in Microsoft® Excel® 2016
- Insert a Chart in Microsoft® Excel® 2016
- Page Setup in Microsoft® Excel® 2016
- Record a Macro in Microsoft® Excel® 2016
- Adjust Row Height and Column Width in Microsoft® Excel® 2016
- Freeze and Unfreeze Columns and Rows in Microsoft® Excel® 2016
- Hide and Unhide Columns and Rows in Microsoft® Excel® 2016
- Insert a Basic Formula in Microsoft® Excel®2016
- Insert a Basic Function in Microsoft® Excel®2016

Go Deeper

Excel® Basics Learning Path - Essential Excel Formulas and Functions for Beginners
Learn how to successfully set up and use basic Excel formulas and functions using these tips, tricks, and shortcuts.
Length: 1 hours 15 minutes

Excel® 2013 Part 1 Series
This series is a review of basic options and tools in Microsoft Excel 2013.

Microsoft® Excel® 2013 Basic
Software Training - eBook (downloadable PDF)

Excel Beyond the Basics (Y7) Seminar

Login to register, or if you you aren't on Pryor+, visit **pryor.com/unlimited-training/** to learn more.

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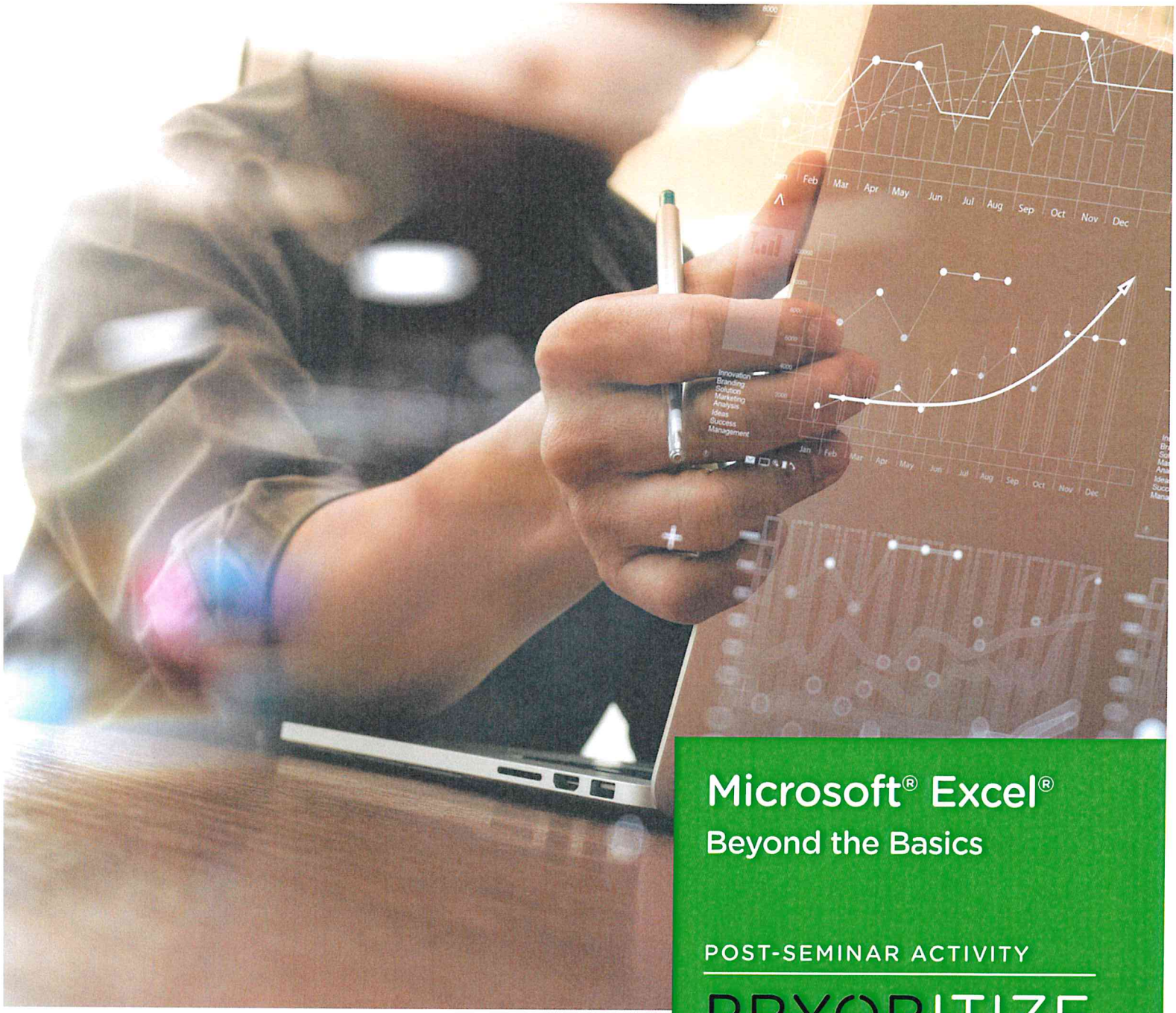

Microsoft® Excel®
Beyond the Basics

POST-SEMINAR ACTIVITY

PRYORITIZE LEARNING.

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POST-SEMINAR ACTIVITY

Get the Most Out of Your Seminar

Here are several exercises to help you solidify and retain the skills taught in *Excel Beyond the Basics*. After a good night's sleep, you'll be ready to hit your desk and try out what you've learned. Refer to your pre-seminar workbook to remind you of your goals and the challenges you identified as most important.

Day After Seminar

- Find the pages in your digital seminar workbook that show your two to three highest priority tasks.
- Follow the steps in your workbook to perform each task on your own data.
- Print just those pages for you to keep beside your workstation as you incorporate the skills in to your daily work.

Week After Seminar

- Using the seminar workbook table of contents or your notes, make a list of 10 additional skills you wish to practice and reinforce.
- Practice two skills each day.
- Open your digital seminar workbook to the skill and follow the steps to perform each task on your own data.
- Print only the pages for skills that you would like to incorporate into your daily work.
- If needed, practice one or two high priority skills each day as well.

Month After Seminar

- Once you are comfortable with your highest priority skills, choose one or two "reach" skills with which you would like to challenge yourself.
- When an opportunity presents itself to practice a reach skill during your work, set aside some extra time to complete the task. For example: You may not usually use Sparklines in your monthly report, but give them a try *this* month!

Be Patient! It may take you longer to complete your work as you incorporate new skills, but the time you are taking will be worth it the next time the task comes up! Set aside learning time along with your work as an investment in YOU.

POST-SEMINAR ACTIVITY

Host a Lunch & Learn

Keep the momentum going with a Lunch and Learn "hosted" by Pryor Learning Solutions. Here is a guide to plan and execute an hour-long, self-guided session. Topic ideas include Excel® skills that reinforce and compliment the *Excel® - Beyond the Basics Seminar.*

Plan

A successful Lunch and Learn takes foresight and planning. Here are some basic steps you'll want to take:

- Schedule a time and reserve a room and any appropriate equipment needed (such as a computer or video display equipment).
- Finalize details: caterer if wanted, simple drinks such as coffee and water if attendees will bring their own lunches, budget, topic, incentives if appropriate.
- Promote – Send invitations, "advertise" the event in appropriate communications channels, collect reservations.
- Send reminders day before and day of event.
- Have a little fun – If your work environment is amenable, think about lunch items or activities that fit the "theme" of your topic. Example: Going over formulas? Invite attendees to bring their favorite recipe and then note how building a formula using functions is similar to following a recipe.

Bonus – Pro Tips

- **Hot Tips From Your Team:** Ask everyone to bring a moderately advanced skill they want to teach, something that they might be uniquely qualified to share, or are proud of having learned.
- **Most Useful Functions:** Introduce 3-5 of the most useful functions for your business or industry with examples of how they are used. Have attendees vote on the ones they would like to learn!
- **Customize Excel:** Introduce several of Excel's powerful customization options such as Quick Access Toolbar, custom ribbons, custom AutoFill lists or custom AutoCorrect.
- **Chart Design:** Find an expert or a skilled designer in your community to talk about the design aspects of creating impactful charts and graphs. Emphasize skills such as compatible colors, fonts, and layout over Excel steps.

Topic Ideas

Microsoft® Excel® Formulas Made Easy - Easily automate calculations and tasks to increase efficiency with basic and advanced Excel formulas.

60 Minutes of Microsoft Excel Secrets: Learn to customize, organize and format your spreadsheets with ease.

Microsoft® Excel® Macros Made Easy: Learn how to create and customize macros to reduce errors and automate everyday tasks.

POST-SEMINAR ACTIVITY

You May Also Like

Learning experts recommend reinforcing new skills with practice and repetition. Listed here are several follow-up courses that we recommend to those who have completed *Excel, Beyond the Basics.*

Have Access to Pryor+?

Here are some resources you may find helpful:

(these are all short 1 minute Online courses available on **Pryor+**)

- Create a PivotTable in Microsoft® Excel® 2016
- Highlight Cells Based on Specific Criteria in Microsoft® Excel® 2016
- Link Worksheets Together in Microsoft® Excel®2016
- Protect Your Data in Microsoft® Excel® 2016
- Record a Macro in Microsoft® Excel® 2016
- Use Sparklines to Display Trends in Microsoft®Excel® 2016
- Bookmark Groups of Cells for Easy Reference in Microsoft® Excel® 2016
- Create and Re-Name a Table in Microsoft®Excel® 2016
- Insert Subtotals in Microsoft® Excel® 2016
- Modify a Chart in Microsoft® Excel® 2016
- Name a Cell for Use in Formulas and Functions in Microsoft® Excel® 2016
- Use Conditional Functions in Microsoft® Excel®2016
- Use Data Filters in Microsoft® Excel® 2016

Go Deeper

Become an Excel® Power User Learning Path – Tips to improve the quality, accuracy and usefulness of your Excel worksheets

Learn advanced Excel tips and shortcuts to make data more useful and worksheets easier to manipulate. These courses will help you turn Excel into your most powerful productivity tool.

Excel® 2013 Part 2 Series

This series is a review of advanced options and tools for Microsoft Excel 2013.

Microsoft® Excel® 2013 Intermediate

Software Training - eBook (downloadable PDF)

Microsoft® Excel® 2013 Basic

Software Training - eBook (downloadable PDF)

Login to register, or if you aren't on Pryor+, visit **pryor.com/unlimited-training/** to learn more.