

Excel 2016: Large Data 4 Final Report



Excel 2016: Large Data 4 – Final Report

2.0 hours

This is an advanced math workshop. Topics include: importing text files; data cleanup using Text to Columns and Flash Fill; Conditional Functions SumIf() and CountIf(); creating substitution lists to cleanup or categorize data to be summarized in PivotTables; using nested IF() statements to create flags to be used as saved filters; creating a summary worksheet using multiple PivotTables and PivotCharts; and using Slicers to filter multiple PivotTables at the same time.

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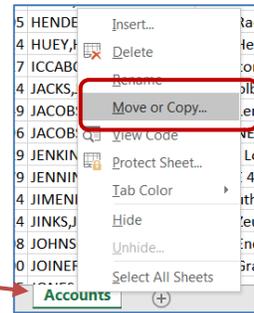
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Merging Files

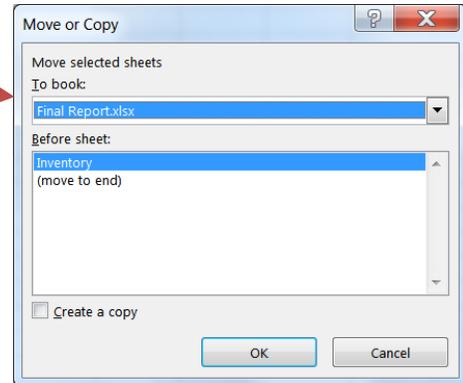


Create Final Report file

- Open **Final-Inventory.xlsx**
- Save as **Final-Report.xlsx** onto the desktop (F12=Save As)
- Open **Accounts.xlsx**
- Right-click on the worksheet name, **Accounts**
- Choose **Move or Copy...**
- From the **To Book:** drop down, choose Final-Report
- Click **OK**

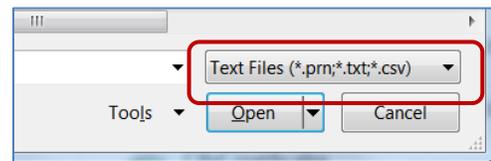


*Note: The **Accounts** file will disappear. It still exists, but every workbook must have at least one worksheet. When we move this worksheet out of this workbook, the file will close without saving.*



Open a Text File

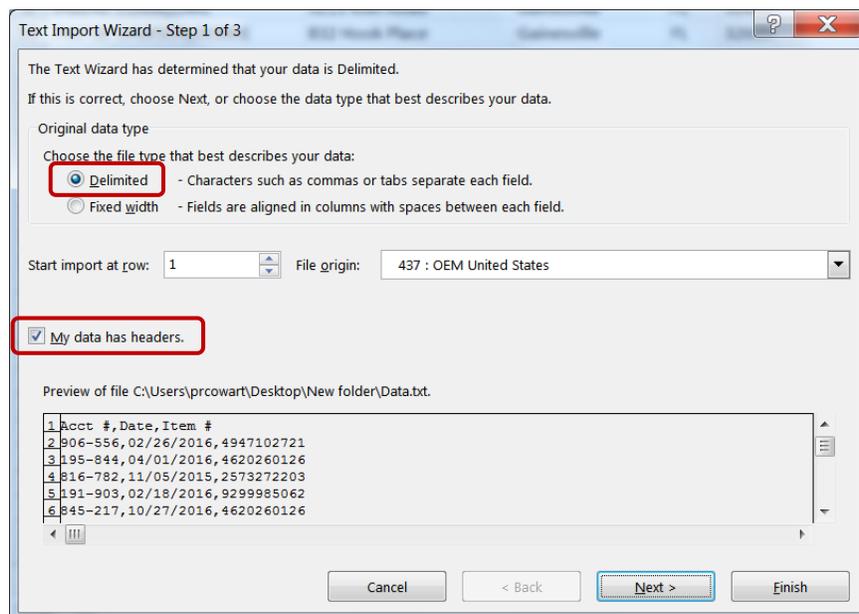
- Open the **Data.txt** file
 - o If you can't see the file, you may need to change the file type to **All** or **Text** files



Text Import Wizard

CSV means Character Separated Values, typically "Comma" delimited. CSV files usually open in Excel with no issue. This file is a TXT file; typically "Tab" delimited. Even though our dataset is delimited, separated, with commas the TXT files need to go through the **Text Import Wizard**.

- Step 1: Our data is separated by tabs, so choose the **Delimited** option.
 - o The text file has titles for each column; check the box for **My data has headers**.





- **Step 2:** The character used to separate columns is called a Delimiter. The delimiter in this dataset is a **Comma**, uncheck **Tab** and choose **Comma**. You'll see the preview update.

Sometimes a consecutive delimiter is to show a blank, sometimes it is a typo

EXAMPLE:

LName,FName,DOB -> Jones,,11/11/1961

LName,FName,DOB -> Jones,,Larry,11/11/1961

If there is data that needs be kept together, the file should have a *Text qualifier*.

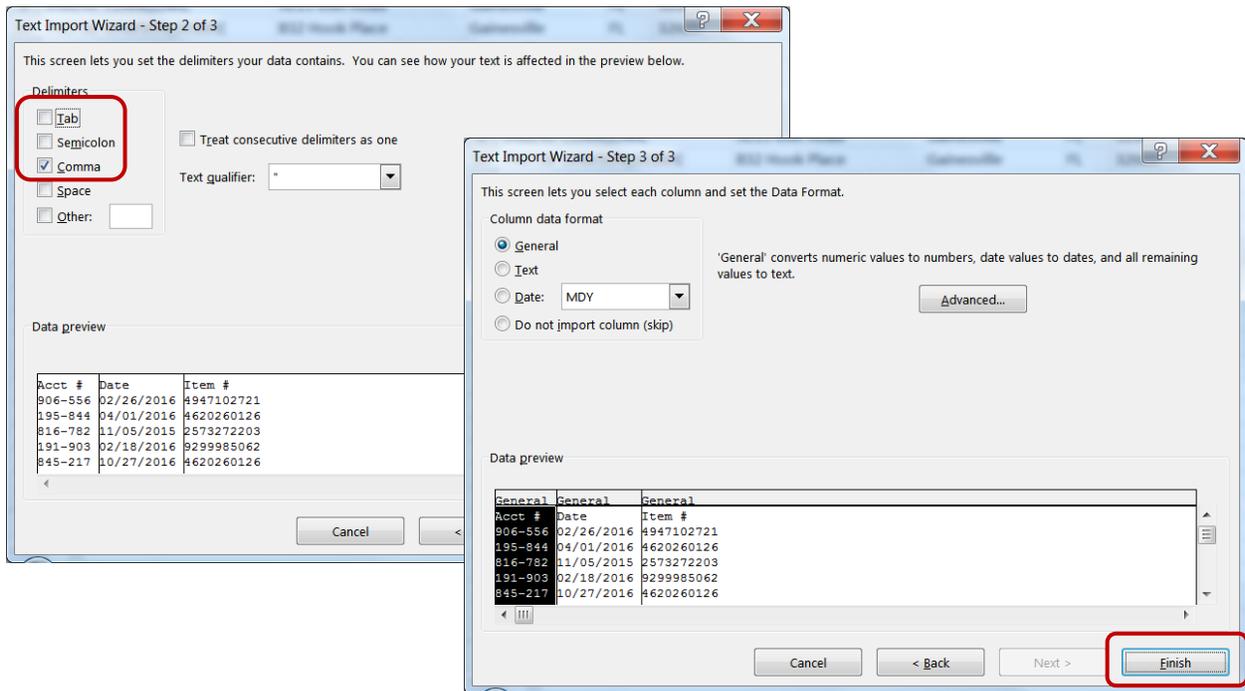
EXAMPLE:

LName,FName,DOB -> Jones,Larry,11/11/1961

Name,DOB -> "Jones,Larry",11/11/1961



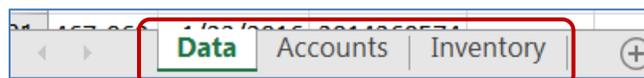
- **Step 3:** The General option lets Excel decide if the values are text, numbers, or dates.



Merge into Final Report file

- Move the worksheet to the Final-Reports.xlsx file.
 - o Right-click on the worksheet name, **Data**
 - o Choose **Move or Copy...**
- From the **To Book:** drop down, choose **Final-Report**
- o Click **OK**

Your Final-Report.xlsx file should now have three worksheets.



Import Data Using The Text Import Wizard

Step 1 of 3

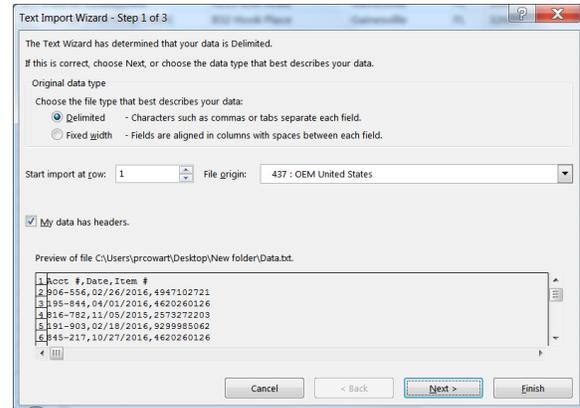
Original data type If items in the text file are separated by tabs, colons, semicolons, spaces, or other characters, select **Delimited**. If all of the items in each column are the same length, select **Fixed width**.

Start import at row Type or select a row number to specify the first row of the data that you want to import.

File origin Select the character set that is used in the text file. In most cases, you can leave this setting at its default. If you know that the text file was created by using a different character set than the character set that you are using on your computer, you should change this setting to match that character set.

For example, if your computer is set to use character set 1251 (Cyrillic, Windows), but you know that the file was produced by using character set 1252 (Western European, Windows), you should set **File Origin** to 1252.

Preview of file This box displays the text as it will appear when it is separated into columns on the worksheet.

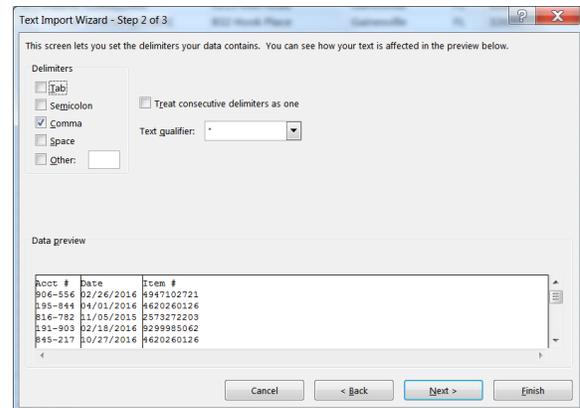


Step 2 of 3 (Delimited data)

Delimiters Select the character that separates values in your text file. If the character is not listed, select the **Other** check box, and then type the character in the box that contains the cursor. These options are not available if your data type is Fixed width.

Treat consecutive delimiters as one

Select this check box if your data contains a delimiter of more than one character between data fields or if your data contains multiple custom delimiters.



Text qualifier Select the character that encloses values in your text file. When Excel encounters the text qualifier character, all of the text that follows that character and precedes the next occurrence of that character is imported as one value, even if the text contains a delimiter character. For example, if the delimiter is a comma (,) and the text qualifier is a quotation mark ("), **"Dallas, Texas"** is imported into one cell as **Dallas, Texas**. If no character or the apostrophe (') is specified as the text qualifier, **"Dallas, Texas"** is imported into two adjacent cells as **Dallas** and **Texas**.

If the delimiter character occurs between text qualifiers, Excel omits the qualifiers in the imported value. If no delimiter character occurs between text qualifiers, Excel includes the qualifier character in the imported value. Hence, **"Dallas Texas"** (using the quotation mark text qualifier) is imported into one cell as **Dallas Texas**.

*This page is
modified from the
Excel Help file*

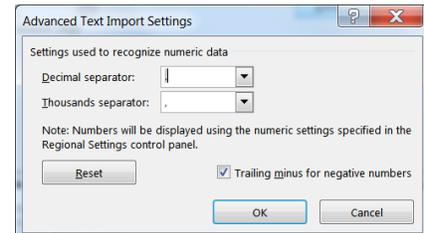
Step 2 of 3 (Fixed width data)

Data preview Set field widths in this section. Click the preview window to set a column break, which is represented by a vertical line. Double-click a column break to remove it, or drag a column break to move it.

Step 3 of 3

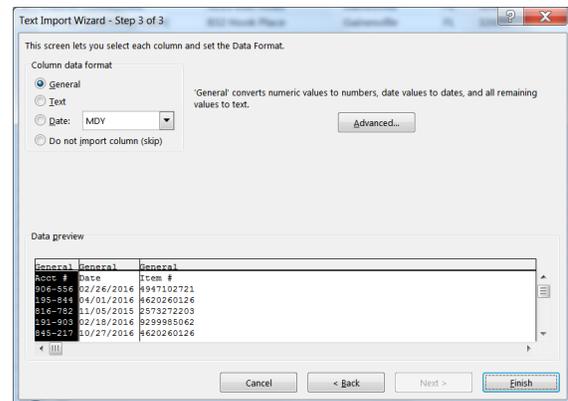
Click the **Advanced** button to do one or more of the following:

- Specify the type of decimal and thousands separators that are used in the text file. When the data is imported into Excel, the separators will match those that are specified for your location in Regional and Language Options or Regional Settings (Windows Control Panel).
- Specify that one or more numeric values may contain a trailing minus sign.



Column data format Click the data format of the column that is selected in the **Data preview** section. If you do not want to import the selected column, click **Do not import column (skip)**.

After you select a data format option for the selected column, the column heading under **Data preview** displays the format. If you select **Date**, select a date format in the **Date** box.



Choose the data format that closely matches the preview data so that Excel can convert the imported data correctly. For example:

- To convert a column of all currency number characters to the Excel Currency format, select **General**.
- To convert a column of all number characters to the Excel Text format, select **Text**.
- To convert a column of all date characters, each date in the order of year, month, and day, to the Excel Date format, select **Date**, and then select the date type of **YMD** in the **Date** box.

Excel will import the column as **General** if the conversion could yield unintended results. For example:

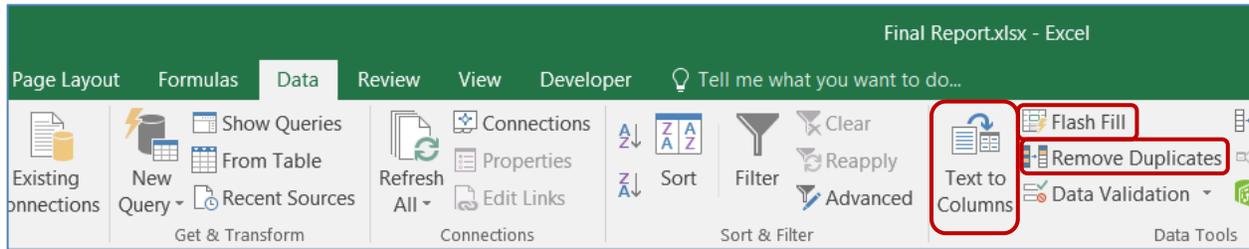
- If the column contains a mix of formats, such as alphabetical and numeric characters, Excel converts the column to **General**.
- If, in a column of dates, each date is in the order of year, month, and date, and you select **Date** along with a date type of **MDY**, Excel converts the column to **General** format. A column that contains date characters must closely match an Excel built-in date or custom date formats.

If Excel does not convert a column to the format that you want, you can convert the data after you import it.

This page is modified from the Excel Help file

Data Cleanup

The **Data** tab has several powerful tools to help you clean up data. In our class today, we will use Text to Columns, Flash Fill, and Remove Duplicates.



Text to Columns

- Turn to *Inventory* worksheet
- Select Column C
- From the **Data** tab choose **Text to Columns**
 - o This wizard should look familiar; it is almost identical to the **Import Text Wizard**.
 - o We want a column of Items, Sizes, and Colors. Our data in Column C has a space between each word, so the values are **Delimited** by spaces.
 - Step 1: Choose **Delimited** (Next)
 - Step 2: Choose **Space** (Next or Finish)
 - Step 3: Click **Finish**

Text to Columns

Split a single column of text into multiple columns.

For example, you can separate a column of full names into separate first and last name columns.

You can choose how to split it up: fixed width or split at each comma, period, or other character.

Weird fact – This sets the default for Excel to look for spaces as delimiters. If you paste something from outside of Excel, the program may try to put each word in different columns, because they are space delimited. To get around this paste the data into the cell while in Edit or Enter modes, or go through the wizard again and choose the Tab delimiter. When you exit, Excel will revert to the default Tab delimiter.

Convert to Number

Because this tool is so good at identifying text, dates, and numbers, it can help *shock* numbers stored as text into number values. Make sure the column has a **General Number** format, not a **Text** format before you try this trick.



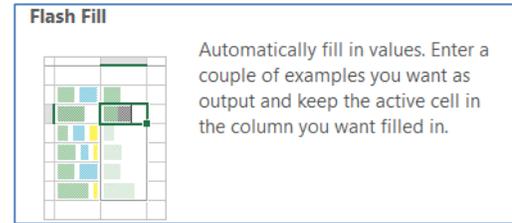
Change Numeric Text to Numbers

- Select Column A, *Stock#*
- From the **Data** tab choose **Text to Columns**
- Click **Finish**, you'll be able to tell it worked because the stock numbers will move to the right side of the cell

	A	B	C	D	E
1	Stock#	Price	Item	Size	Color
2	1379323202	\$ 42	Pants	Large	Blue
3	2573272203	\$ 46	Pants	Large	Red
4	2792658379	\$ 37	Pants	Large	White
5	2949386116	\$ 48	Pants	Medium	Blue

Flash Fill

Flash Fill is a new tool to Office 2013 and beyond. It takes a couple of times to work out the patterns, and they don't always work, but it's pretty awesome when it does. This tool takes the place of a lot of text functions that were used to capitalization, split, and merge data.



First, we need to set up the Acct # to have a dash in the middle. We can do a custom format, but that will only be an optical illusion, it would not match our Data worksheet and will not work for our vLookups. An alternate method is to use the formula `=LEFT(A2,3) & "-" & RIGHT(A2,3)`, fill the equation, copy, and pasted values over the original and delete the formula. This new tool is way cooler!



Create Account # Column

- Turn to *Accounts worksheet*
- In Cell G1, type Acct #
 - o You don't have to title the column first
- In Cell G2, type 119-494
- Accept the entry, stay on cell G2, and from the **Data** tab choose **Flash Fill**
- Cut Column G, paste onto Column A to replace with the new format



Create First Name and Last Name Columns

- In Cell G1, type **First Name**
- In Cell G2, type **Annie** and accept
- Click in Cell G2, Flash Fill
- In Cell H1, type **Last Name**
- In Cell H2, type **Adams** and accept
- Click in Cell H2, Flash Fill
- Cut Columns G and H, right-click on Column C and **Insert Cut Cells** to move
- Delete the Column D (Name)

As with any type of separation of name fields, be wary of the middle names, multi-part names, and suffixes (Jr, PhD...). You do not have to start at the top of the column; Use the most complicated name as your example.

You can use functions like `LEN()` which counts the number of characters to check your split columns with the original data.

Example: `Len(A1)=Len(B1)+1+Len(C1)`

- TRUE or FALSE answer
- The plus one (+1) is to count the comma

	A	B	
1	Acct #	Name	Address
2	119494	ADAMS,ANNIE	6831 NW 4t
3	451139	APPLETON,APRIL	PO Box 456
4	822426	ARLINGTON,ARNOLD	234 SE 45th
5	151691	BROWN,BOBBIE	234 Peter P
6	865688	BRUCE,BUTCH	3243 SE 4th
7	508838	CAPPERS,CATHY	RR 2 Box 65
8	303476	CARLSON,CARLY	1943 NW M
9	948240	CLARK,CARL	9213 Kiwi R

	A	B	C	
1	Acct #	First Name	Last Name	Address
2	119-494	Annie	Adams	6831 NW 4t
3	451-139	April	Appleton	PO Box 456
4	822-426	Arnold	Arlington	234 SE 45th
5	151-691	Bobbie	Brown	234 Peter P
6	865-688	Butch	Bruce	3243 SE 4th
7	508-838	Cathy	Cappers	RR 2 Box 65
8	303-476	Carly	Carlson	1943 NW M
9	948-240	Carl	Clark	9213 Kiwi R

Conditional Functions

Functions like SUM() and COUNT() calculate everything in the range. We can use the SUBTOTAL worksheet function on filtered data, but conditional functions can calculate based on criteria.

Countif

Counts the number of nonblank cells that meet the given criteria
Syntax: COUNTIF(range, criteria)

Range is the range of cells from which you want to count cells.

Criteria is the criteria in the form of a number, expression, or text that defines which cells will be counted. For example, criteria can be expressed as 32, "32", ">32", "apples".

	A	B
1	Apples	32
2	Oranges	53
3	Peaches	75
4	Apples	86

=COUNTIF(A1:A4, "apples")	2
=COUNTIF(B1:B4, ">55")	2



Create # of Sales

Count the number of times the Stock# in Cell A2 occurs in Column C of worksheet Data.

- Turn to *Inventory* worksheet; Title Column F: **# of Sales**
- In Cell F2 Build the expression: =COUNTIF(Data!C:C, Inventory!A:A) *answer: 47*
 - o If you have Inventory!A2, the formula will break when the data is sorted, use the full column address so the results will reflect the current row.
- Copy or fill the expression for all the stock items

Sumif

Adds the cells specified by given criteria
Syntax: SUMIF(range, criteria, sum_range)

Range is the range of cells you want evaluated.

Criteria is the criteria in the form of a number, expression, or text that defines which cells will be added. For example, criteria can be expressed as 32, "32", ">32", "apples".

Sum_range are the actual cells to sum. The cells in sum_range are summed only if their corresponding cells in range match the criteria. If sum_range is omitted, the cells in **Range** are summed.

	A	B
1	Value	Commission
2	\$10,000	\$500
3	\$20,000	\$1,500
4	\$30,000	\$2,100
5	\$40,000	\$2,800

=SUMIF(A2:A5, ">25000", B2:B5)	\$4,900
=SUMIF(A2:A5, "<25000", B2:B5)	\$2,000



Create Price

Sum the price of the items listed on the Data worksheet, for each customer. Before we can set up our SUMIF we need to put in a Price column in our Data.

- Turn to *Data* worksheet, Title column D: **Price**
- In Cell D2, build the expression: =VLOOKUP(C:C, Inventory!A:B, 2, FALSE) *answer: 48*
- Fill the expression down the column and Format the number with a dollar sign \$



Create Customer Balance

- Turn to *Accounts* worksheet; Title Column H: **Balance**
- In Cell H2, build the expression: =SUMIF(Data!A:A, Accounts!A:A, Data!D:D) *answer: 319*
- Fill the expression down the column and Format the number with a dollar sign \$

PivotTables

The conditional functions put the answers in the spreadsheet with your data, but for a quick report, use a PivotTable.



Create a PivotTable

- Return to **Data** worksheet
- Click on a single cell inside the dataset
- From the **Insert** tab, choose **PivotTable**
 - o Put the table on a new worksheet



"SumIf" PivotTable

- Acct # as **Row** Heading and Sum of Amount as the **Value**



"CountIf" PivotTable

- Clear the table
- Item # as **Row** Heading and Count of Item # as the **Value**
 - o You will need to change the value to a count. Click on the **Sum of Item #** field in the values area and choose Value Field Settings. Change to the Count option and click OK.

Pivot Chart

Create a **City** field in the Data worksheet so the PivotTable can summarize the number of sales by City.



Add City to Data

- Turn to worksheet *Data*
- Insert a column in front of Column B (Date) and title it **City**
- In Cell B2, build the expression:
=VLOOKUP(A:A, Accounts!A:E, 5, FALSE).....*Gainesville*
- Fill the expression for the column



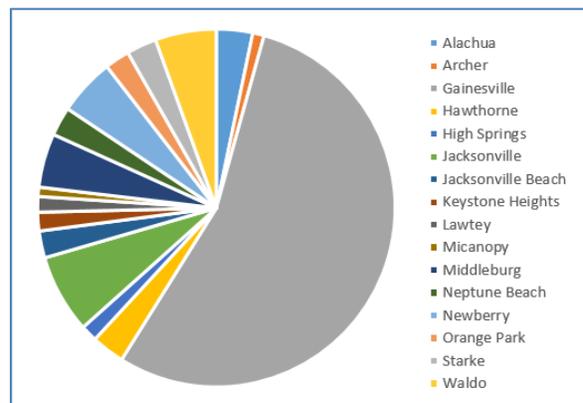
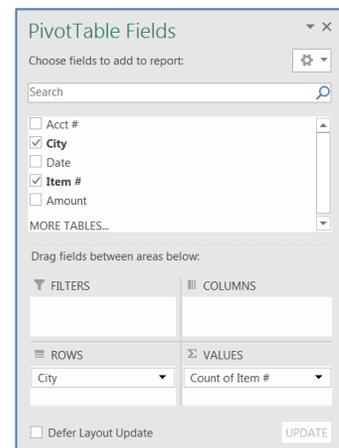
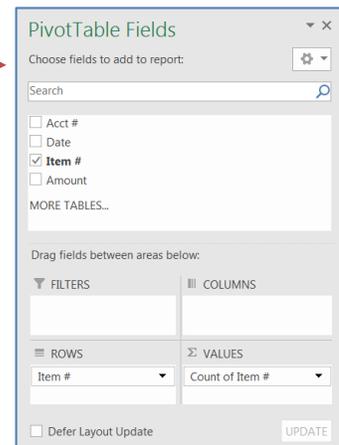
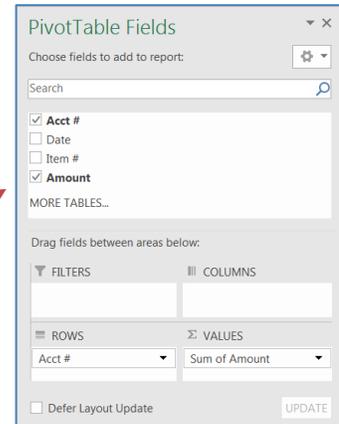
Add City to PivotTable

- Return to the *PivotTable*
 - o *There's no City!*
- Right-click in the table and **Refresh** the data
- Clear the PivotTable
- City as **Row** Heading, and **Value** (*count*)



Create a PivotChart

- Create a Pie Chart from the **Insert** or **Analyze** tab. Any chart you insert while you are in a PivotTable becomes a PivotChart.
 - o *Optional:* Look on the Analyze tab to remove the grey **Field Buttons** from the chart. Click on the legend and resize it.



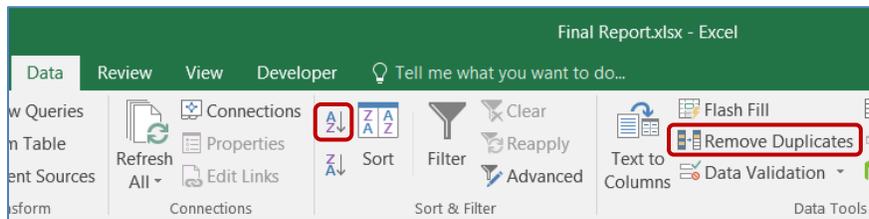
Substitution List

There are too many cities to make an effective chart. A larger category such as County will work better. There is currently no County field in this workbook. This happens all the time in data collection. Too many options, too many entries. It could be poor data entry (Gainesville, GNV, Gville), or as in this example too many values that can easily be grouped into larger categories.



Make a list of Unique Values

- Turn to *Accounts* worksheet
- Copy Column E (*City*)
- Create a new worksheet
- Paste in Cell A1
- From the **Data** tab in the ribbon, click **Remove Duplicates**, click **OK**
- Sort the new list of values



Create a column of Substitute Values

- Title Column B: **County**
- Type in the new values
- Name the worksheet **Counties**



Use vLookup to Find New Values

- Return to *Accounts* worksheet
- Insert a column after Zip (Column H), name it **County**
- Under the title, build the expression:
=VLOOKUP(E:E, Counties!A:B, 2, FALSE)..... *Alachua*



Use vLookup to put new values in worksheet Data

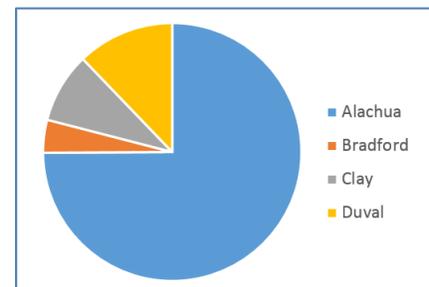
- Return to *Data* worksheet
- Clear City Column
- Title the column **County**
- Under the title, build the expression:
=VLOOKUP(A:A, Accounts!A:H, 8, FALSE) *Alachua*



Update the Pivot Table

- Return to the *PivotTable*
- Right-click in the table and **Refresh** the data
- County as **Row** Heading, and **Value** (*count*)
- Rename worksheet to **County Pivot**

City	County
Alachua	Alachua
Archer	Alachua
Gainesville	Alachua
Hawthorne	Alachua
High Springs	Alachua
Jacksonville	Duval
Jacksonville Beach	Duval
Keystone Heights	Clay
Lawtey	Bradford
Micanopy	Alachua
Middleburg	Clay
Neptune Beach	Duval
Newberry	Alachua
Orange Park	Clay
Starke	Bradford
Waldo	Alachua



Saving Filters with Logic Functions

As with sorting, Excel only remembers the most recent filter. One way to have saved filters is to create a **Filter By This** column, more commonly called a **Flag**. We put an X on the cells that match our criteria.



Create IF Statements to match Criteria

- Turn to *Accounts* worksheet
- Add these titles

	J	K	L
1	Gainesville >500	Alachua Not Gnv	Bradford or >600

- As you build the equations in Row 2, the initial result for all three of these functions will appear blank Row 2 the questions/logic tests will returns FALSE for Row 2's values.

	A	B	C	D	E	F	G	H	I	J	K	L
	Acct #	First Name	Last Name	Address	City	State	Zip	County	Balance	Gainesville >500	Alachua Not Gnv	Bradford or >600
1	119-494	Annie	Adams	6831 NW 4th Ave	Gainesville	FL	32614	Alachua	\$ 319.00			
2	451-139	April	Appleton	PO Box 456	Orange Park	FL	32073	Clay	\$ 288.00			
3	822-426	Arnold	Arlington	234 SE 45th Road	Gainesville	FL	32627	Alachua	\$ 451.00			
4	151-691	Bobbie	Brown	234 Peter Pan Terrace	Alachua	FL	32616	Alachua	\$ 464.00		x	
5	865-688	Butch	Bruce	3243 SE 4th Terrace	Starke	FL	32091	Bradford	\$ 577.00			x
6	508-838	Cathy	Cappers	RR 2 Box 659	Gainesville	FL	32612	Alachua	\$ 636.00	x		x



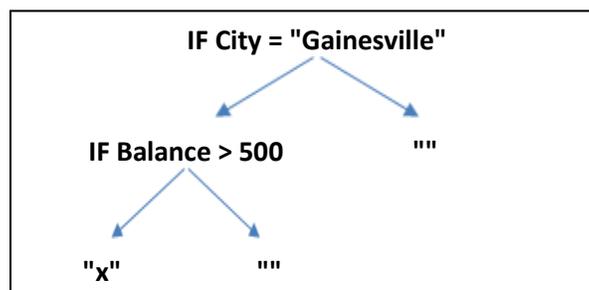
Nested IF(), AND(), OR() Functions

IF statements have three parts, Question/Logic Test, what do to if the result is **TRUE**, what to do if the result is **FALSE**. = IF(Question, True, False)

- Text values are placed in quotes "", Numbers are left as is. If you need to use dates, you will need to work with the Date Codes, which is beyond the scope of this class. To check for or return a "blank" cell, use an empty set of quotes "".
- Logic Qualifiers
 - o = Equal; <> Not Equal; > Greater Than, < Less Than, >= Greater or equal, <= Less or equal

Column J: Gainesville > 500 - If City is equal to "Gainesville" and If Balance is Greater Than 500, place an X in the cell.

=IF(E2="Gainesville", IF(I2>500, "x", ""), "")

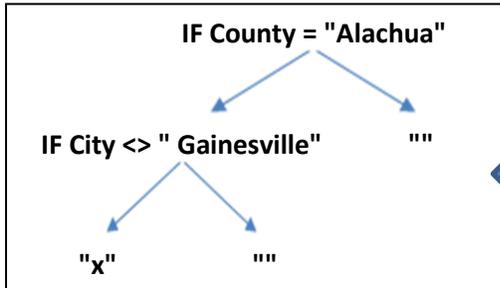




Column K: Alachua not GNV - If County is equal to "Alachua", **AND** City is NOT equal to "Gainesville", place an X in the cell. Since all "False" results are the same we can use **AND** for our "questions".

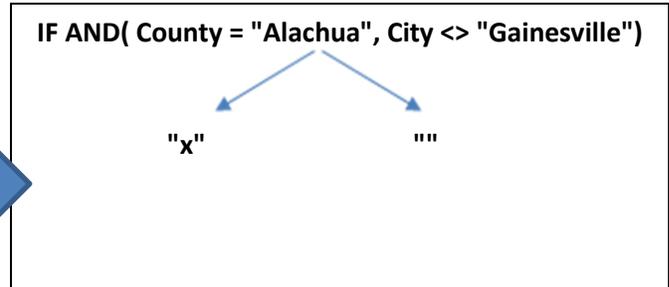
Nested IF:

=IF(H2="Alachua", if(E2<>"Gainesville", "x", ""), "")



AND statement

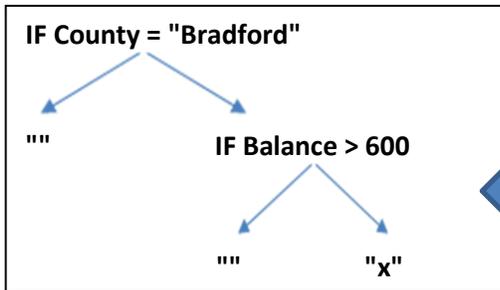
=IF(AND(H2="Alachua", E2<>"Gainesville"), "x", "")



Column L: Bradford or >600 - If County is equal to "Bradford" **OR** If Balance is Greater Than 600, place an X in the cell. Since all "True" results are the same we can use **OR** for our "questions".

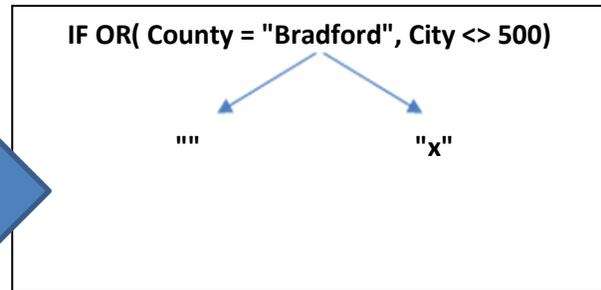
Nested IF:

=IF(H2="Bradford", "x", IF(I2>600, "x", ""))



OR statement

=IF(OR(H2="Bradford", I2>600), "x", "")



Filter Matched Criteria

- Right-click on any X and filter by selected cells value

	A	B	C	D	E	F	G	H	I	J	K	L
	Acct #	First Name	Last Name	Address	City	State	Zip	County	Balance	>500	Alachua Not GNV	Bradford or >600
5	151-691	Bobbie	Brown	234 Peter Pan Terrace	Alachua	FL	32616	Alachua	\$ 464.00		x	
15	543-952	Francis	Fuller	123 South Main Street	Newberry	FL	32669	Alachua	\$ 323.00		x	
23	362-549	Julie	Jacobs	2039 Lemon Tree Way	Alachua	FL	32616	Alachua	\$ 676.00		x	x
25	866-129	Jennifer	Jenkins	78349 Lost Boys Ave	Newberry	FL	32669	Alachua	\$ 502.00		x	
27	116-814	Jose	Jimenez	12 South University Ave	Waldo	FL	32694	Alachua	\$ 367.00		x	
31	985-515	Jill	Jones	209 Cantaloupe Way	Micanopy	FL	32667	Alachua	\$ 321.00		x	

Other Logic Functions

TRUE

Returns the logical value TRUE.

Syntax: TRUE()

Remark: You can enter the value TRUE directly into cells and formulas without using this function.

FALSE

Returns the logical value FALSE.

Syntax: FALSE()

Remark: You can also type the word FALSE directly onto the worksheet or into the formula, and Microsoft Excel interprets it as the logical value FALSE.

AND

Returns TRUE if all its arguments are TRUE

Syntax: AND(logical1, logical2, ...)

Logical1, logical2, ... are 1 to 30 conditions you want to test that can be either TRUE or FALSE.

The arguments must evaluate to logical values such as TRUE or FALSE. If the specified range contains no logical values, returns the #VALUE! error value.

=AND(TRUE, TRUE)	TRUE
=AND(TRUE, FALSE)	FALSE

=AND(FALSE, FALSE)	FALSE
=AND(2+2=4, 2+3=5)	TRUE

OR

Returns TRUE if any argument is TRUE

Syntax: OR(logical1, logical2, ...)

Logical1, logical2, ... are 1 to 30 conditions you want to test that can be either TRUE or FALSE.

The arguments must evaluate to logical values such as TRUE or FALSE. If the specified range contains no logical values, returns the #VALUE! error value.

=OR(TRUE, TRUE)	TRUE
=OR(TRUE, FALSE)	TRUE

=OR(FALSE, FALSE)	FALSE
=OR(1+1=1, 2+2=5)	FALSE

NOT

Reverses the value of its argument. Syntax: NOT(logical) *Logical* is a value or expression that can be evaluated to TRUE or FALSE. If logical is FALSE, NOT returns TRUE; if logical is TRUE, NOT returns FALSE.

=NOT(FALSE)	TRUE
-------------	------

=NOT(1+1=2)	FALSE
-------------	-------

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Excel Help file*

Dashboard

The term Dashboard within the scope of Microsoft Excel, is a worksheet that displays a highly visual summary of the data, usually with tables and charts. While the dashboard tables and charts can pull the data from multiple locations, it's often easier to pull all the data into one location.

Since I would like to break down data by item, size, and color, I need to create those fields in my Data worksheet.



Create Item, Size, and Color columns in Data

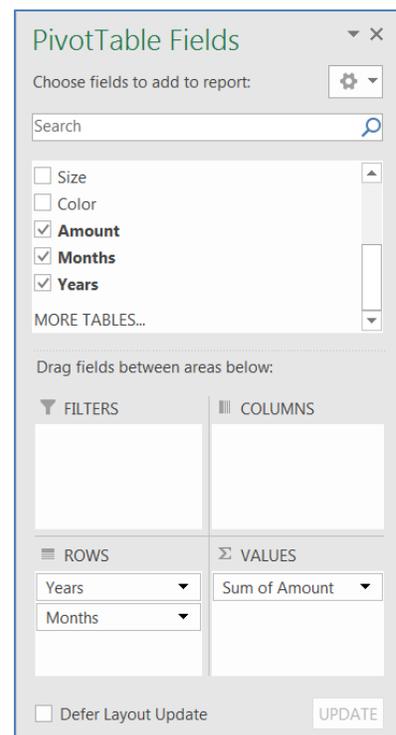
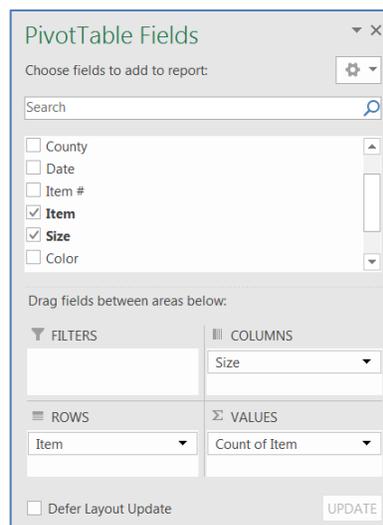
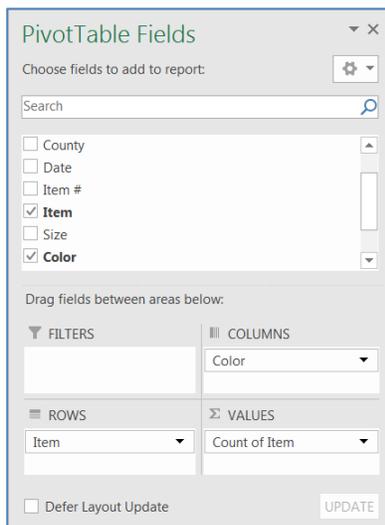
- Turn to the Data worksheet, fill each formula down as you complete it.
- In Cell F1, Title: Item
- In Cell F2, build the expression: =VLOOKUP(D:D, Inventory!A:F, 3, FALSE) *Shirts*
- In Cell G1, Title: Size
- In Cell G2, build the expression: =VLOOKUP(D:D, Inventory!A:F, 4, FALSE) *Large*
- In Cell H1, Title: Color
- In Cell H2, build the expression: =VLOOKUP(D:D, Inventory!A:F, 5, FALSE) *White*



Create the Dashboard on Page 15 of this packet

See next page for step-by-step details.

Once you have created a PivotTable, you can use copy and paste to create more. While each table can be copied, cleared, and rebuilt, each chart needs to be created from scratch.



Create a chart for each table

Use the Chart Tools Format tab to format the charts to be the same size and align them to each other.

Create the PivotTable as shown here. Then use the PivotTable Tool Tabs to modify the look of the table.

- Remove Field Headers (*Analyze* tab)
- Remove Grand Totals (*Design* tab)
- Change **Count of Item** to **# of Items by Color**

	A	B	C	D	E
1					
2					
3	Count of Item	Column Labels			
4	Row Labels	Blue	Red	White	Grand Total
5	Pants	136	107	109	352
6	Shirts	112	129	131	372
7	Socks	102	122	120	344
8	Grand Total	350	358	360	1068
9					

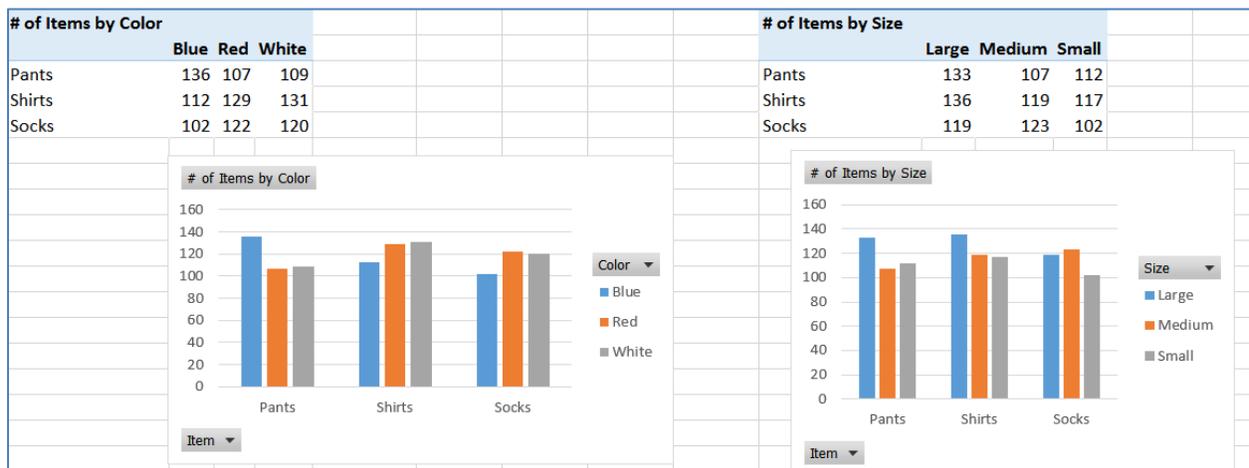
The second PivotTable is similar.

- Copy the *# of Items by Color* PivotTable
- Paste in Cell J3
- From the column headings, remove the **Color** and add **Size**
- Rename to **# of Items by Size**

Delete Rows 1 and 2.

Build a (clustered) column chart for each table.

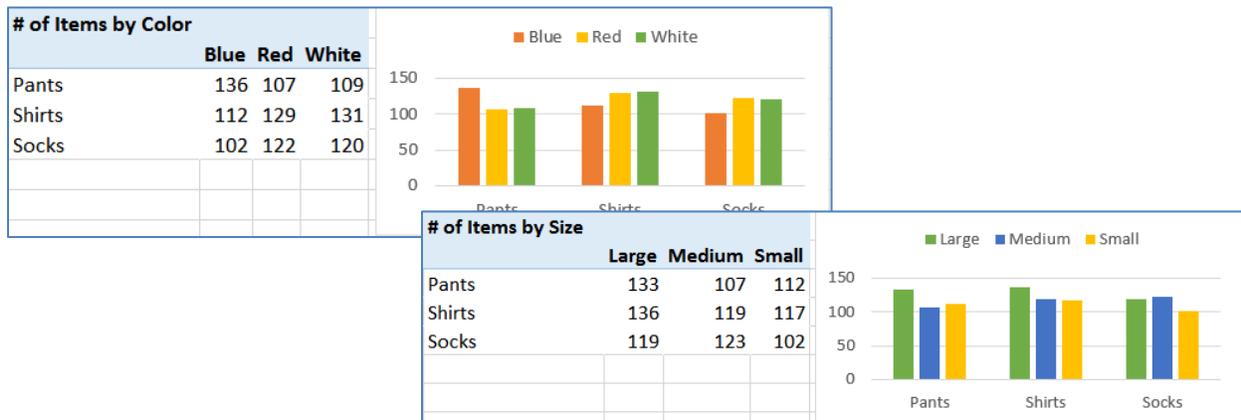
Click in the table, Go to the Insert Tab, Choose Recommended Chart and Click OK



- Remove the Field buttons (*Analyze* tab)
- Move the Legend to the top of the charts (*Add Chart Element* on the *Design* tab)
- Change the color scheme of each chart to be different (*Design* tab)

Resize both charts at once

- Use the **Shift** key to select both charts at the same time (select one, shift-click the other)
- Change the Height to 1.5", the Width to 3" (far right side of the *Format* tab)
- Align the charts to the top of each other (*Format* tab)



SAVE YOUR FILE!

Make the final PivotTable

- Copy one of the pivot tables and paste into cell A11
- Clear the Pivot table
- Add Item to the Column Heading
- Add Price to the Values
- Add Date to the Row Heading
- Rename to **Sales**

	A	B	C	D
11	Sum of Price			
12		Pants	Shirts	Socks
13	⊕ 2015	2254	1739	1622
14	⊕ 2016	11525	9017	7200

Expand the date to show months

- Remove Quarters from the Row Headings
- Click on the Expand (+) buttons to show the months

Note: If you want to modify the dates, right-click on one of the years and change the Group options.

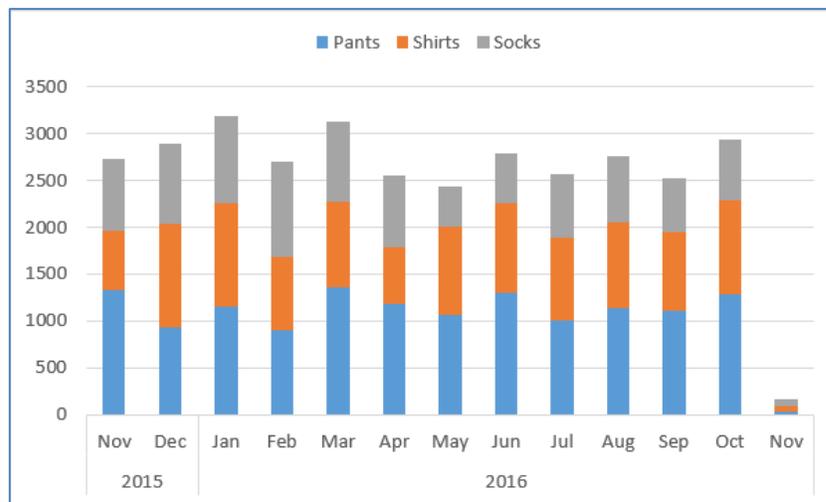
Sales				
		Pants	Shirts	Socks
2015	Nov	1327	634	764
	Dec	927	1105	858
2016	Jan	1155	1111	921
	Feb	902	779	1024
	Mar	1354	921	848
	Apr	1186	607	757
	May	1067	937	426
	Jun	1294	962	539
	Jul	1004	884	678
	Aug	1136	911	717
	Sep	1101	850	579

Modify the table

- Hide the +/- buttons (*Analyze* tab)
- Change Report Layout to Tabular Form (*Design* tab)

Create a Stacked Column chart

- Remove the Field buttons (*Analyze* tab)
- Move the Legend to the top of the charts (*Add Chart Element* on the *Design* tab)

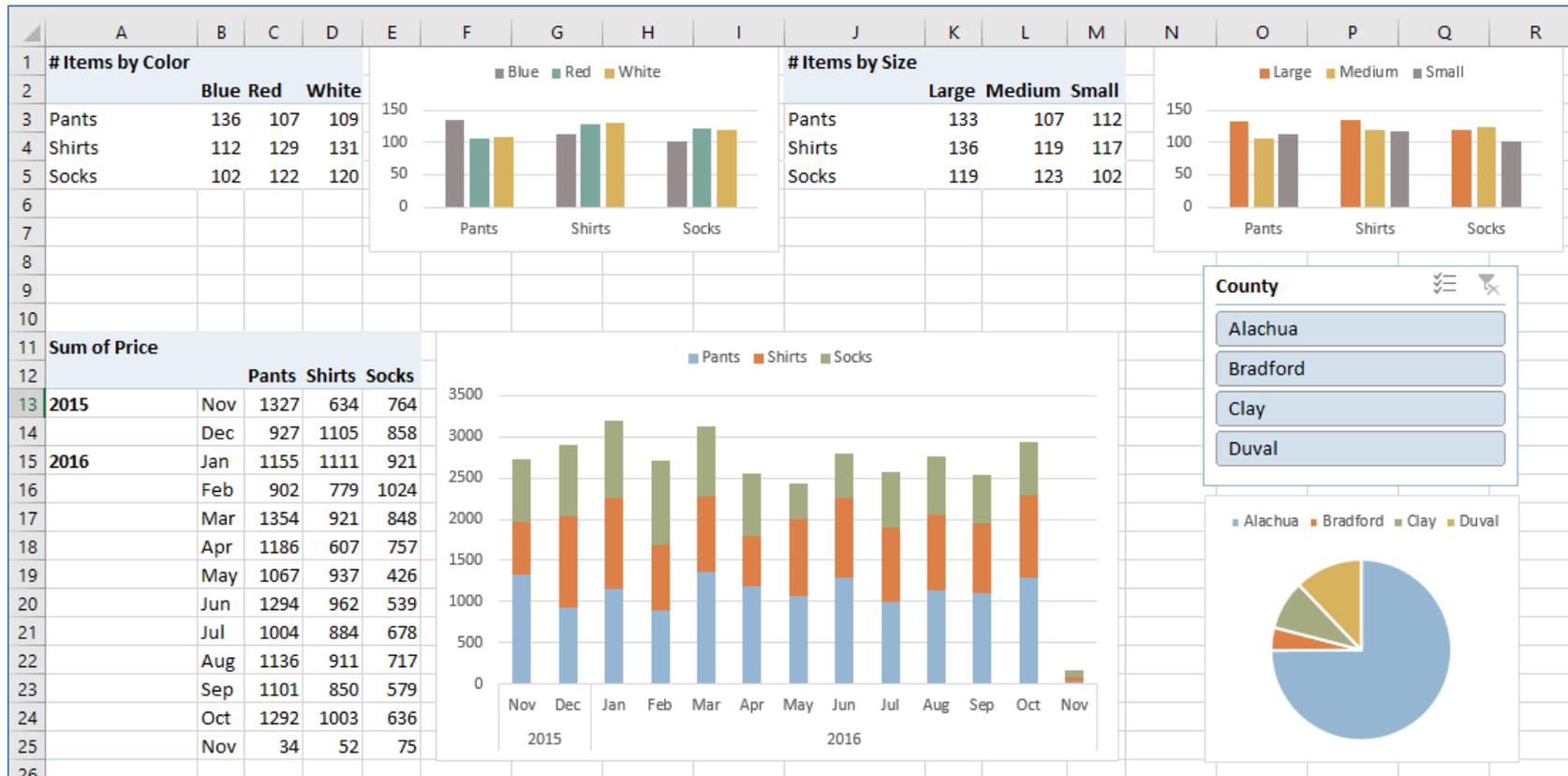


Change the Theme Colors

- **Save**
- Turn to the *Page Layout* tab and change the theme *Colors*

Move Pie Chart

- Turn to the County Pivot worksheet
- Click on the Pie Chart
- From the *Analyze* or *Design* tab choose *Move Chart*
- Move the chart to our dashboard worksheet

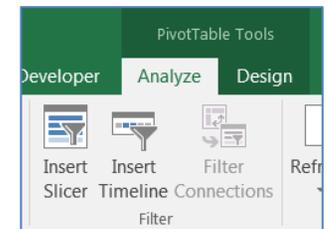


Slicers



We can add a filter to each of the tables, but a **Slicer** can filter all three at once.

- Click inside any PivotTable and choose **Insert Slicer** from the *Analyze* tab
 - Choose **County** and click **OK**
 - Notice County is not in our tables, but we can still use the slicer to filter by the values we choose.
- While the slicer is selected choose **Report Connections** from the *Options* tab
- Check all three tables on the list and click **OK**
 - The Pie chart is not an option here because it has a different data source. You can use the Select Data option on the Design tab, if you want to link it.



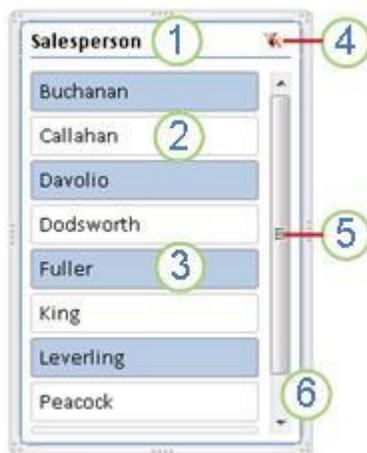
Caution: If you turn close a Slicer before clearing the filter, the tables are still filtered.

What are Slicers?

Slicers are easy-to-use filtering components that contain a set of buttons that enable you to quickly filter the data in a PivotTable report, without the need to open drop-down lists to find the items that you want to filter.

When you use a regular PivotTable report filter to filter on multiple items, the filter indicates only that multiple items are filtered, and you have to open a drop-down list to find the filtering details. However, a slicer clearly labels the filter that is applied and provides details so that you can easily understand the data that is displayed in the filtered PivotTable report.

A slicer typically displays the following elements:



1. A slicer header indicates the category of the items in the slicer.
2. A filtering button that is not selected indicates that the item is not included in the filter.
3. A filtering button that is selected indicates that the item is included in the filter.
4. A Clear Filter button removes the filter by selecting all items in the slicer.
5. A scroll bar enables scrolling when there are more items than are currently visible in the slicer.
6. Border moving and resizing controls allow you to change the size and location of the slicer.

Using Slicers

There are several ways to create slicers to filter your PivotTable data. In an existing PivotTable, you can:

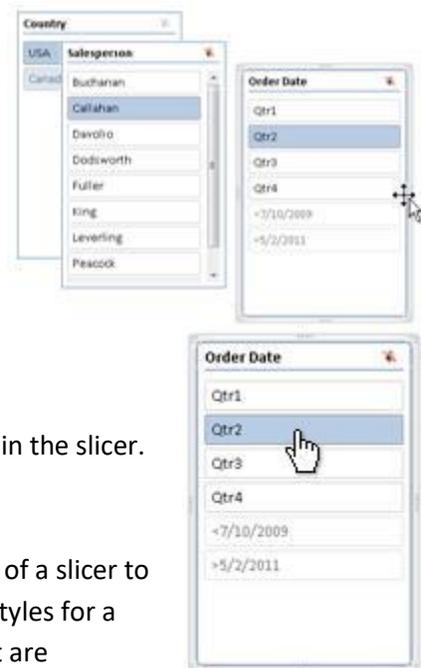
Because each slicer that you create is designed to filter on a specific PivotTable field, it is likely that you will create more than one slicer to filter a PivotTable report.

After you create a slicer, it appears on the worksheet alongside the PivotTable, in a layered display if you have more than one slicer. You can move a slicer to another location on the worksheet, and resize it as needed.

To filter the PivotTable data, simply click one or more of the buttons in the slicer.

Formatting Slicers for a Consistent Look

To create professional looking reports or simply to match the format of a slicer to the format of the associated PivotTable report, you can apply slicer styles for a consistent look. By applying one of the various predefined styles that are available for slicers, you can closely match the color theme that is applied to a PivotTable.



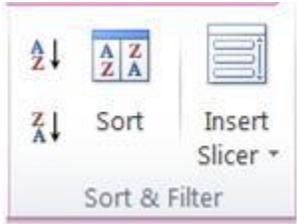
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Sharing slicers between PivotTables

When you have many different PivotTables in one report, such as a Business Intelligence (BI) report that you are working with, it is likely that you will want to apply the same filter to some or all of those PivotTables. You can share a slicer that you created in one PivotTable with other PivotTables. No need to duplicate the filter for each PivotTable!

When you share a slicer, you are creating a connection to another PivotTable that contains the slicer that you want to use. Any changes that you make to a shared slicer are immediately reflected in all PivotTables that are connected to that slicer. For example, if you use a Country slicer in PivotTable1 to filter data for a specific country, PivotTable2 that also uses that slicer will display data for the same country.

Create a slicer in an existing PivotTable

	<ol style="list-style-type: none">1. Click anywhere in the PivotTable report for which you want to create a slicer. This displays the PivotTable Tools, adding an Options and a Design tab.2. On the Options tab, in the Sort & Filter group, click Insert Slicer.3. In the Insert Slicers dialog box, select the check box of the PivotTable fields for which you want to create a slicer.4. Click OK. A slicer is displayed for every field that you selected.5. In each slicer, click the items on which you want to filter. To select more than one item, hold down CTRL, and then click the items on which you want to filter.
---	---

Format a slicer

<ol style="list-style-type: none">1. Click the slicer that you want to format. This displays the Slicer Tools, adding an Options tab.2. On the Options tab, in the Slicer Styles group, click the style that you want. To see all available styles, click the More button .

Disconnect or delete a slicer

If you no longer need a slicer, you can disconnect it from the PivotTable report, or you can delete it.

Disconnect a slicer

<ol style="list-style-type: none">1. Click anywhere in the PivotTable report for which you want to disconnect a slicer. This displays the PivotTable Tools, adding an Options and a Design tab.2. On the Options tab, in the Sort & Filter group, click the Insert Slicer arrow, and then click Slicer Connections.3. In the Slicer Connections dialog box, clear the check box of any PivotTable fields for which you want to disconnect a slicer.

Delete a slicer

Click the slicer, and then press DELETE; or Right-click the slicer, and then click Remove <Name of slicer>.

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