

Excel 2016: Large Data 2 PivotTables



Excel 2016: Large Data 2 - PivotTables

1.5 hours

PivotTables are very powerful summary reports created from an organized data set. In this workshop we will learn to plan and create PivotTables; work with grouping, filters, and summary options; create a PivotChart; and explore formatting options. This advanced workshop assumes prior experience with Microsoft Excel.

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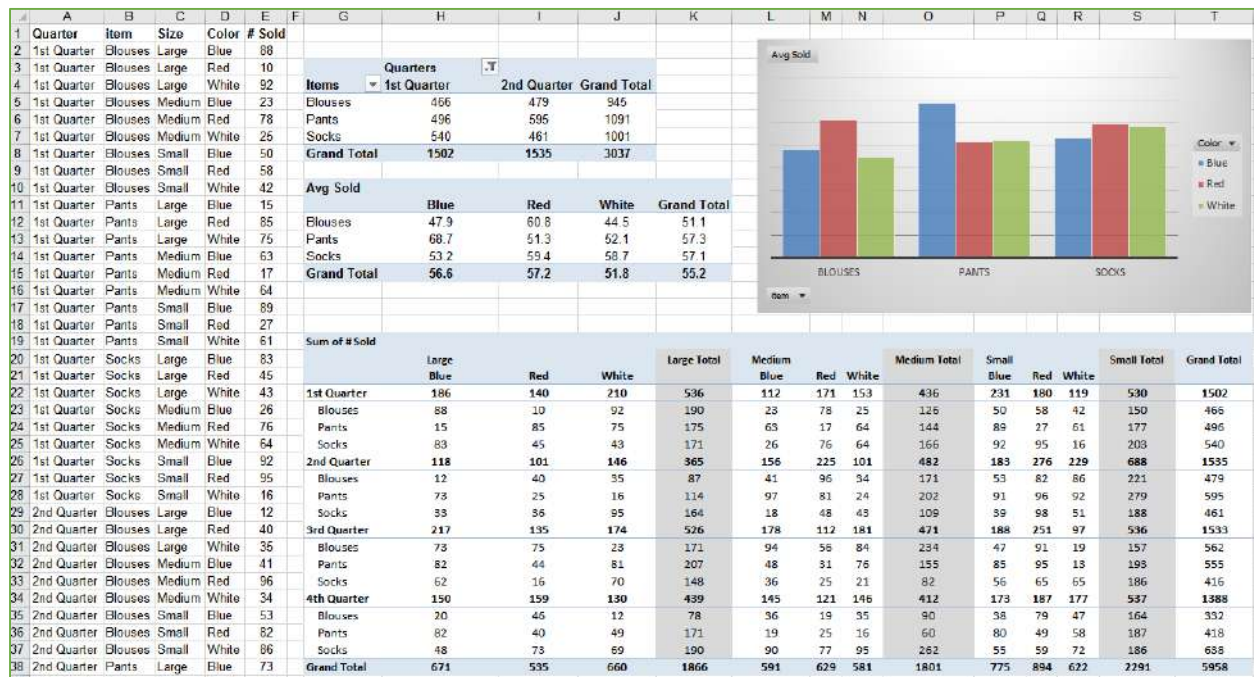
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PivotTables

PivotTables are summary reports. They give you the ability to take a large boring set of repetitive data and summarize it into a neat table that you can very easily rearrange, filter, format, and even chart.

Here's an example of a repetitive raw data set, three PivotTables, and a PivotChart.



Planning

The most important part of building a PivotTable is planning. You have to remove yourself from the raw data and think about the final result. There's a learning curve, have patience with yourself and with Excel and you'll get there.

The Data

The data has to be repetitive. It looks wrong at first, but the more boring and repetitive your data, the more you can do with it. In the Large Data 1 class we learn about sorting and filtering in Excel. We don't need to keep each quarter, each department, each person on a different sheet. If we keep all of the data in the same place, we can look at each category, one at a time, using the filter, and beautifully because it is all in the same place, we can look across categories and quickly summarize with a PivotTable.

The data has to be consistent. We don't want to see entries like: 4th Qtr, 4th Quarter, Qtr 4. In the Large Data 3 (vLookups) class we'll learn about validation rules, and in Large Data 4 (report) we'll see how to use vLookups to help us cleanup inconsistent data entry.

The definition of a database is a structured collection of related data. Rows of a data table are **records**. When we filter in Excel, the Status Bar tells us how many Records were found.

Columns of a data table are **fields**. The column titles of your original dataset will appear in the PivotTable Field List. You'll use these titles to control the structure of the PivotTable. If possible, **use clear, concise, and unique column titles**. If you use the same column title more than once, Excel will add a number after the subsequent titles. Example: *Home Address, City, State, Zip, Work Address, City, State, Zip* becomes *Home Address, City, State, Zip, Work Address, City(2), State(2), Zip(2)*.

The Result

By all means, jump in and play with the tools, get comfortable with how to make a PivotTable. But when it comes down to needing a specific report, you have to "show your work". Think about what it is you actually want to see.

"I want to know how many items we ordered." Okay. Do you care what the items were? Do you care about the data across the year, or do you only want the total? What about the other details? Each versus boxes? Would you like to compare your orders to another departments?

"I want to know how many patients were admitted last month." Okay. Do you want to see the break down by time, perhaps by morning and afternoon? By shift? By Department? Or would you like to have the flexibility to change (filter) the shifts and departments?

The more you think about what you want out of the glorious summary report known as a PivotTable, the better it will come together for you.

Building

The PivotTable field list shows the column titles of our original dataset, these are our **Fields**. If you rename, add, or delete columns in the dataset you will not see the change here until you refresh the data. The **Refresh** button is on the Analyze tab of the PivotTable Tools, and can be found on the shortcut menu if you right-click inside the table.

- Fields in the **Filters** will appear above the table.
- Fields in the **Columns** will appear at the top of each column of the PivotTable.
- Fields in the **Rows** will appear at the left of each row of the PivotTable.
- Fields in the **Values** will be summarized. By default, text and date fields will be counted, number fields will be summed.

Quarter	1st Quarter			
Sum of # Sold	Blue	Red	White	Grand Total
Blouses	161	146	159	466
Large	88	10	92	190
Medium	23	78	25	126
Small	50	58	42	150
Pants	167	129	200	496
Large	15	85	75	175
Medium	63	17	64	144
Small	89	27	61	177
Socks	201	216	123	540
Large	83	45	43	171
Medium	26	76	64	166
Small	92	95	16	203
Grand Total	529	491	482	1502

PivotTable Fields

Choose fields to add to report:

Search

- Quarter
- item
- Size
- Color
- # Sold

MORE TABLES...

Drag fields between areas below:

FILTERS: Quarter

COLUMNS: Color

ROWS: item, Size

VALUES: Sum of # Sold

Defer Layout Update

UPDATE

Arranging Fields

Adding

- Click the check box in front of the field name
 - Text fields will go into the **Rows** showing each unique value from the dataset
 - Date fields will go into the **Rows** grouping the values across time
 - Number fields will go into the **Value** as a sum
- Drag fieldname from the field list to an area
 - You will *have* to drag to add a field to the value area multiple times
- Right-click on the fieldname in the field list and choose an area

Moving

- Drag fieldname from an area to a new area
- Right-click on the fieldname in the field list and choose a new area
- Left-click on a field in an area and choose a new area

Deleting

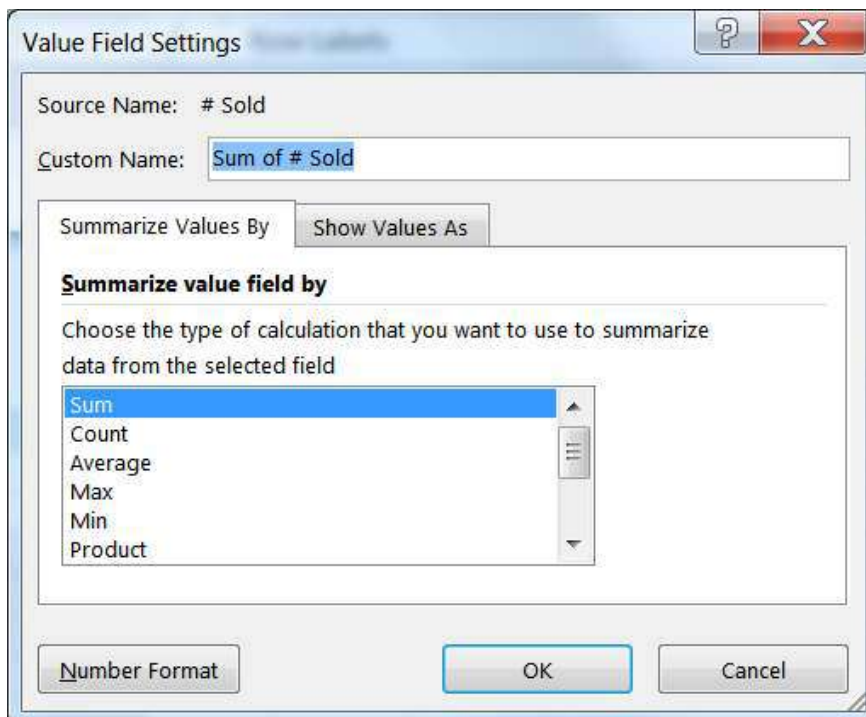
- Drag fieldname out of the area section
- Left-click on a field in the area and choose **Remove Field**

Value Field Settings

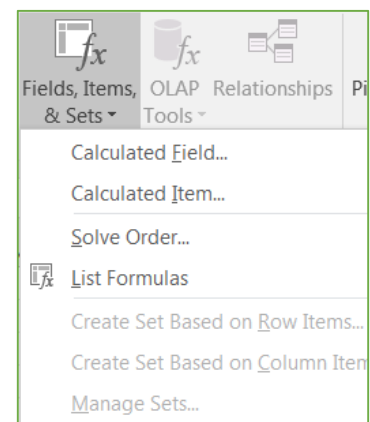
Fields added to the value section are summarized within the grouping of the row and column headings set in the PivotTable. Numbers will sum, other values will be counted. To change how the data is summarized, left-click on the fieldname in the Values area and choose **Value Field Settings**.

You can reformat your numbers with the Excel formatting tools, but if you reformat from the Value Field Settings window you'll format the Table, this means if you change the structure of your table by adding fields you won't have to reformat any new cells occupied by the table.

Page 7 of this handout discusses the **Show Values As** options.

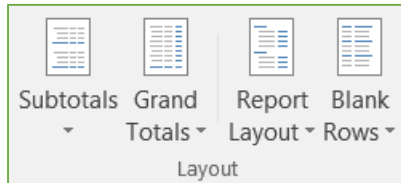
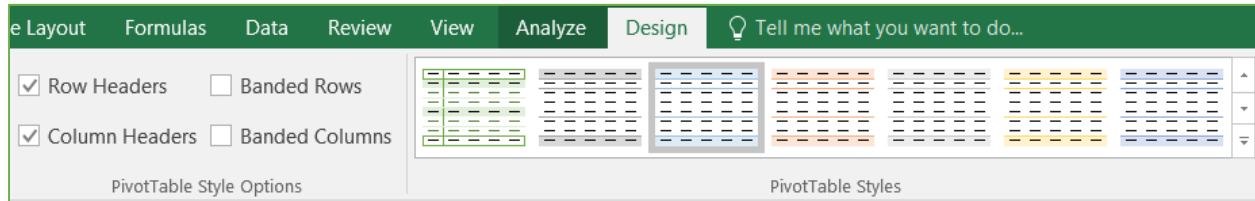


It is possible to create other summary options, but it's beyond the scope of this class. If you would like to explore, look at the **Fields, Items, & Sets** option on the Analyze tab.



Formatting

The PivotTable Design tab has lots of style options to make the PivotTable look good. Change the Options settings to see how they vary in the style you chose.



The style options help with the look of the data, but in my opinion the first set of buttons on the Design tab are way better, as they determine how the data is pulled together within the PivotTable.

Original

Sum of # Sold	Column Labels			
Row Labels	Large	Medium	Small	Grand Total
1st Quarter	536	436	530	1502
Blouses	190	126	150	466
Pants	175	144	177	496
Socks	171	166	203	540
2nd Quarter	365	482	688	1535
Blouses	87	171	221	479
Pants	114	202	279	595
Socks	164	109	188	461
Grand Total	901	918	1218	3037

Subtotals at Bottom, Blank Rows inserted

Sum of # Sold	Column Labels			
Row Labels	Large	Medium	Small	Grand Total
1st Quarter				
Blouses	190	126	150	466
Pants	175	144	177	496
Socks	171	166	203	540
1st Quarter Total	536	436	530	1502
2nd Quarter				
Blouses	87	171	221	479
Pants	114	202	279	595
Socks	164	109	188	461
2nd Quarter Total	365	482	688	1535
Grand Total	901	918	1218	3037

No Subtotals, no Grand Totals

Sum of # Sold	Column Labels		
Row Labels	Large	Medium	Small
1st Quarter			
Blouses	190	126	150
Pants	175	144	177
Socks	171	166	203
2nd Quarter			
Blouses	87	171	221
Pants	114	202	279
Socks	164	109	188

Report Layout: Outline

Sum of # Sold	Size				
Quarter	item	Large	Medium	Small	Grand Total
1st Quarter		536	436	530	1502
Blouses		190	126	150	466
Pants		175	144	177	496
Socks		171	166	203	540
2nd Quarter		365	482	688	1535
Blouses		87	171	221	479
Pants		114	202	279	595
Socks		164	109	188	461
Grand Total		901	918	1218	3037

Sum of # Sold	Size				
Quarter	item	Large	Medium	Small	Grand Total
1st Quarter	Blouses	190	126	150	466
	Pants	175	144	177	496
	Socks	171	166	203	540
2nd Quarter	Blouses	87	171	221	479
	Pants	114	202	279	595
	Socks	164	109	188	461
Grand Total		901	918	1218	3037

Report Layout: Tabular, no Subtotals, Blank Rows inserted

Notice with the **Outline** and **Tabular** Report Layouts the **Row Labels** are no longer grouped, instead you see a heading for each column and row label.

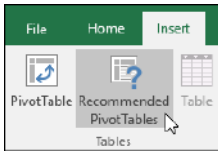
Pivot Tables - Excel 2016 Help File

Create a PivotTable

If you have limited experience with PivotTables, or are not sure how to get started, a **Recommended PivotTable** is a good choice. When you use this feature, Excel determines a meaningful layout by matching the data with the most suitable areas in the PivotTable. This helps give you a starting point for additional experimentation. After a recommended PivotTable is created, you can explore different orientations and rearrange fields to achieve your specific results.

Recommended PivotTable

1. Click a cell in the source data or table range.
2. Go to **Insert > Tables > Recommended PivotTable**.



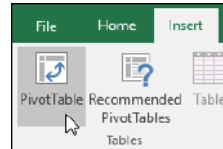
3. Excel analyzes your data and presents you with several options, like in this example using the household expense data.

Recommended PivotTables	
Sum of AMOUNT by CATEGORY	
Row Labels	Sum of AMOUNT
Entertainment	345
Grocery	735
Household	600
Transportation	279
Grand Total	1959
Sum of AMOUNT by MONTH	
Row Labels	Sum of AMOUNT
January	584
February	705
March	670
Grand Total	1959

4. Select the PivotTable that looks best to you and press **OK**. Excel will create a PivotTable on a new sheet, and display the **PivotTable Fields** List.

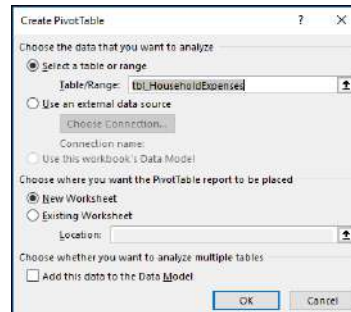
Manually create a PivotTable

1. Click a cell in the source data or table range.
2. Go to **Insert > Tables > PivotTable**.



If you're using Excel for Mac 2011 and earlier, the PivotTable button is on the **Data** tab in the **Analysis** group.

3. Excel will display the **Create PivotTable** dialog with your range or table name selected. In this case, we're using a table called "tbl_HouseholdExpenses".

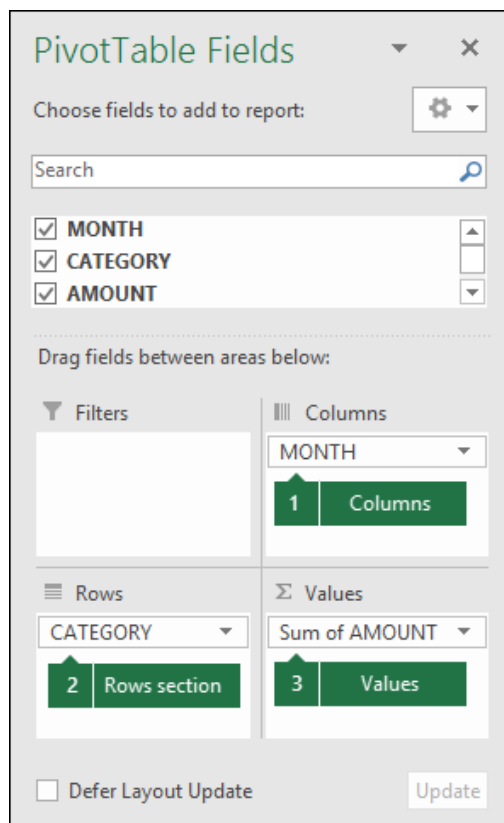


4. In the **Choose where you want the PivotTable report to be placed** section, select **New Worksheet**, or **Existing Worksheet**. For **Existing Worksheet**, you'll need to select both the worksheet and the cell where you want the PivotTable placed.
5. If you want to include multiple tables or data sources in your PivotTable, click the **Add this data to the Data Model** check box.
6. Click **OK**, and Excel will create a blank PivotTable, and display the **PivotTable Fields** list.

Working with the PivotTable Fields list

In the **Field Name** area at the top, select the check box for any field you want to add to your PivotTable. By default, non-numeric fields are added to the **Row** area, date and time fields are added to the **Column** area, and numeric fields are added to the **Values** area. You can also manually drag-and-drop any available item into any of the PivotTable fields, or if you no longer want an item in your PivotTable, simply drag it out of the Fields list or uncheck it. Being able to rearrange Field items is one of the PivotTable features that makes it so easy to quickly change its appearance.

PivotTable Fields list



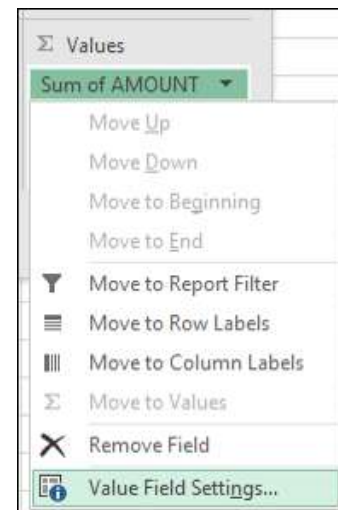
Corresponding fields in a PivotTable

	1	Columns		
Sum of AMOUNT	Column Labels			
Row Labels	January	February	March	Grand Total
Entertainment	\$100	\$125	\$120	\$345
Gr 2	2	Rows	3	Values
Household	\$175	\$225	\$200	\$600
Transportation	\$74	\$115	\$90	\$279
Grand Total	\$584	\$705	\$670	\$1,959

PivotTable Values

- Summarize Values By

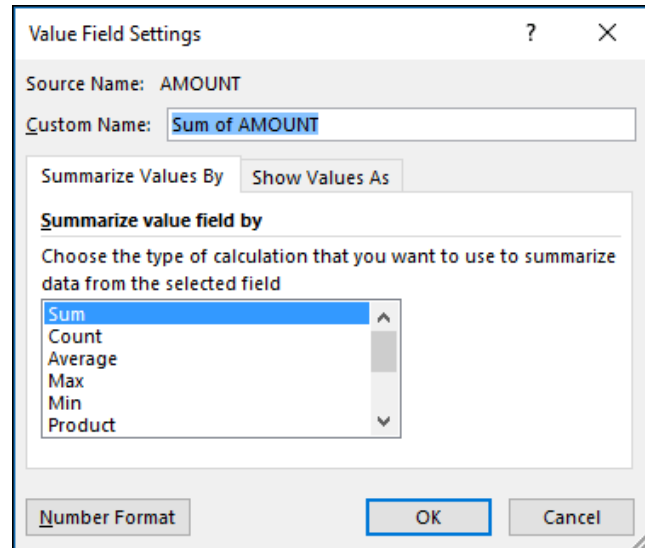
By default, PivotTable fields that are placed in the **Values** area will be displayed as a **SUM**. If Excel interprets your data as text, it will be displayed as a **COUNT**. This is why it's so important to make sure you don't mix data types for value fields. You can change the default calculation by first clicking on the arrow to the right of the field name, then select the **Value Field Settings** option.



This page is from the Excel 2016
PivotTable Help file

Next, change the calculation in the **Summarize Values By** section. Note that when you change the calculation method, Excel will automatically append it in the **Custom Name** section, like "Sum of fieldName", but you can change it. If you click the **Number Format** button, you can change the number format for the entire field.

Tip: Since the changing the calculation in the **Summarize Values By** section will change the PivotTable field name, it's best not to rename your PivotTable fields until you're done setting up your PivotTable. One trick is to use **Find & Replace (Ctrl+H) > Find what > "Sum of"**, then **Replace with > leave blank** to replace everything at once instead of manually retyping.



- **Show Values As**

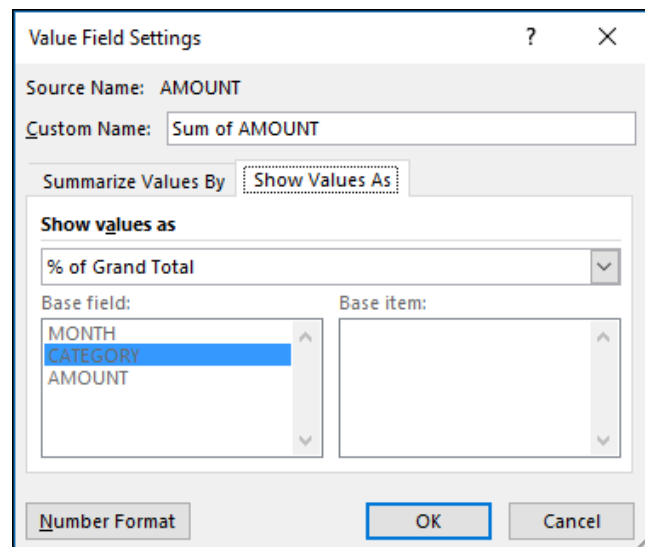
Instead of using a calculation to summarize the data, you can also display it as a percentage of a field. In the following example, we changed our household expense amounts to display as a **% of Grand Total** instead of the sum of the values.

Sum of AMOUNT	Column Labels	January	February	March	Grand Total
Entertainment		5.10%	6.38%	6.13%	17.61%
Grocery		12.00%	12.25%	13.27%	37.52%
Household		8.93%	11.49%	10.21%	30.63%
Transportation		3.78%	5.87%	4.59%	14.24%
Grand Total		29.81%	35.99%	34.20%	100.00%

Once you've opened the **Value Field Setting** dialog, you can make your selections from the **Show Values As** tab.

- **Display a value as both a calculation and percentage.**

Simply drag the item into the **Values** section twice, then set the **Summarize Values By** and **Show Values As** options for each one.



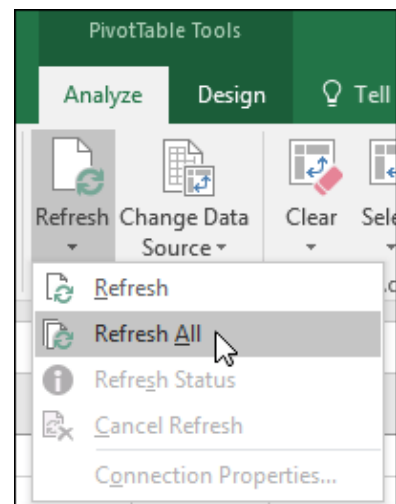
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Refreshing PivotTables

If you add new data to your PivotTable data source, any PivotTables that were built on that data source need to be refreshed.

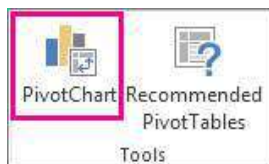
To refresh just one PivotTable, you can **right-click** anywhere in the PivotTable range, then select **Refresh**.

If you have multiple PivotTables, first select any cell in any PivotTable, then on the **Ribbon** go to **PivotTable Tools > Analyze > Data > Click** the arrow under the **Refresh** button and select **Refresh All**.



Create a PivotChart

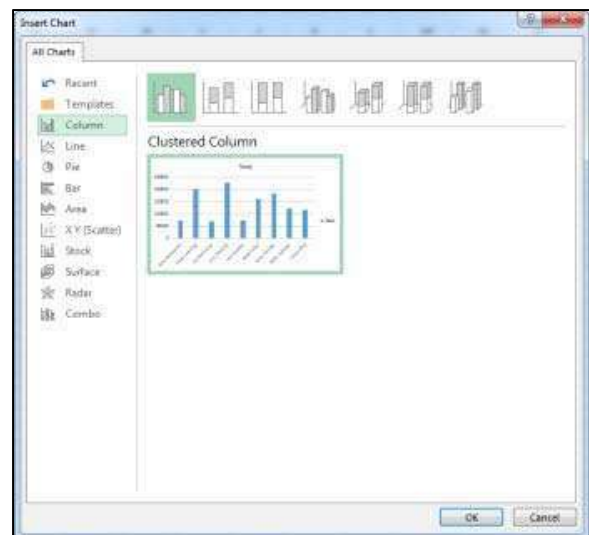
1. Click anywhere in the PivotTable to show the PivotTable Tools on the ribbon.
2. Click **Analyze > PivotChart**.



3. In the **Insert Chart** dialog box, click the chart type and chart subtype you want.

You can use any chart type except an XY (scatter), bubble, or stock chart.

4. **Click OK**.
5. In the **PivotChart** that appears, click any interactive control, and then pick the sort or filtering options.



After you create a PivotChart, you can customize it, much like you'd do with any standard charts.

When you select the PivotChart two buttons appear next to the chart so you can quickly add or change chart elements such as titles or data labels, or change the chart style and colors of your PivotChart the same way you would in a standard chart.

The **PivotChart Tools** are shown on the ribbon.

On the **Analyze**, **Design**, and **Format** tabs, you can pick options to work with or customize your PivotChart.

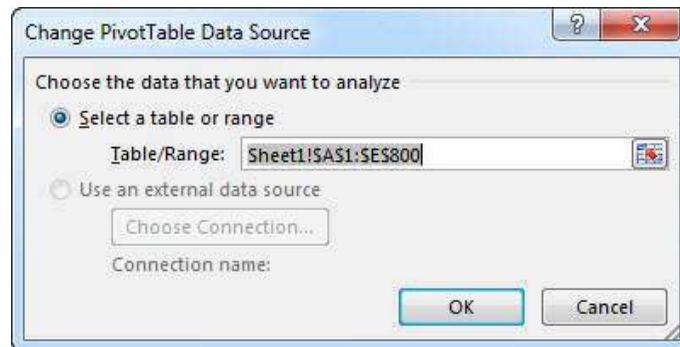
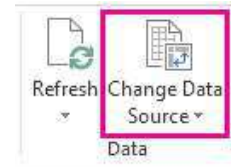


Change the source data

After you create a PivotTable, you can change the range of its source data. For example, you can expand the source data to include more rows of data. However, if the source data has been changed substantially—such as having more or fewer columns, consider creating a new PivotTable.

To change the data source of a PivotTable if it's a range of cells or an Excel table, do the following:

1. Click anywhere in the PivotTable to show the **PivotTable Tools** on the ribbon.
2. Click **Analyze > Change Data Source**.
3. In the **Table/Range** box, enter the range you want to use.



Tip: Leave the dialog box open, and then select the table or range on your worksheet. If the data you want to include is on a different worksheet, click that worksheet, and then select the table or range.

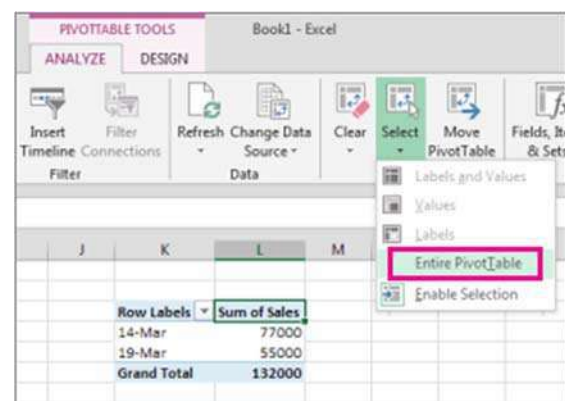
Delete a PivotTable

When you no longer need a PivotTable, select the entire PivotTable, and press the Delete key to remove it. If you get a "Cannot change this part of a PivotTable report" message, make sure the entire PivotTable is selected. Press Ctrl+A, and press Delete again.

If you're using a device that doesn't have a keyboard, try removing the PivotTable like this:

1. Pick a cell anywhere in the PivotTable to show the **PivotTable Tools** on the ribbon.
2. Click **Analyze > Select**, and then pick **Entire PivotTable**.
3. Press Delete.

Tip: If your PivotTable is on a separate sheet that has no other data you want to keep, deleting that sheet is a fast way to remove the PivotTable.



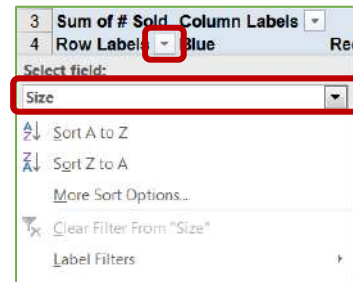
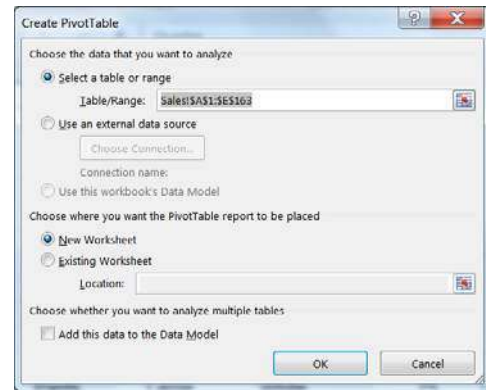
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PivotTable Help file*

Class Exercises

Filters

- 1) Open File: PivotSales.xlsx
 - If necessary, move to cell A1
- 2) From the Insert tab, choose **PivotTable**
 - Click OK to make a new PivotTable based on the current dataset on a new worksheet.
- 3) Set up the table to look like this:

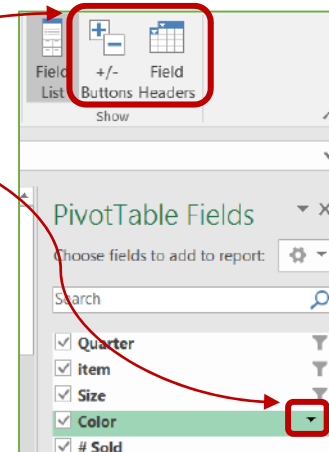
Quarter	(All)			
Sum of # Sold	Column Labels			
Row Labels	Blue	White	Grand Total	
Blouses	976	969	919	2864
Large	307	194	317	818
Medium	347	412	250	1009
Small	322	363	352	1037
Pants	1369	1016	929	3314
Large	407	377	318	1102
Medium	423	357	287	1067
Small	539	282	324	1145
Socks	890	941	902	2733
Large	309	269	333	911
Medium	217	257	296	770
Small	364	415	273	1052
Grand Total	3235	2926	2750	8911



- 4) Filter inside the PivotTable:
 - Use the Quarter filter to show only 1st Quarter
 - Use the title Row Labels to filter out the Socks
 - Use the title *Row Labels* to filter out the **Small**
 - Remember to either click on the category first, or change the selected field box to **Size**

Quarter	1st Quarter			
Sum of # Sold	Column Labels			
Row Labels	Blue	White	Grand Total	
Blouses	111	88	117	316
Large	88	10	92	190
Medium	23	78	25	126
Pants	78	102	139	319
Large	15	85	75	175
Medium	63	17	64	144
Grand Total	189	190	256	635

- 5) Filter from the PivotTable field list:
 - Turn off the *+/- Buttons* and the *Field Headers* from the PivotTable Tools Analyze tab
 - Use the filter arrow next to Color in the PivotTable Field list to remove all the **Red** items

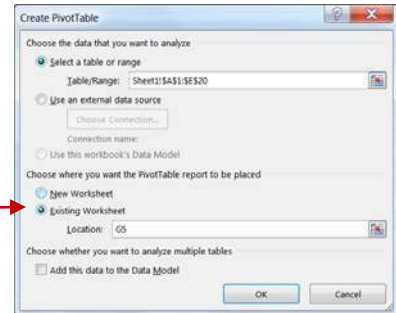


RESULT

	A	B	C	D
1	Quarter	1st Quarter		
2				
3	Sum of # Sold			
4		Blue	White	Grand Total
5	Blouses	111	117	228
6	Large	88	92	180
7	Medium	23	25	48
8	Pants	78	139	217
9	Large	15	75	90
10	Medium	63	64	127
11	Grand Total	189	256	445

Favorite Colors

- 1) Open File: PivotSurvey.xlsx
 - If necessary, move to cell A1
- 2) From the Insert tab, choose **PivotTable**
 - Choose Existing Worksheet
 - Type in G5 and click **OK**
- 3) Add Fav Color to the Rows
- 4) Add Fav Color to the Values
 - Since Fav Color is text, we get COUNT
- 5) Sort the values so the most popular color is first
 - Click on a number in the table, choose sort descending from the ribbon or right-click menu
 - From the PivotTable Tools Analyze Tab, Move PivotTable to a new sheet, or Clear All.

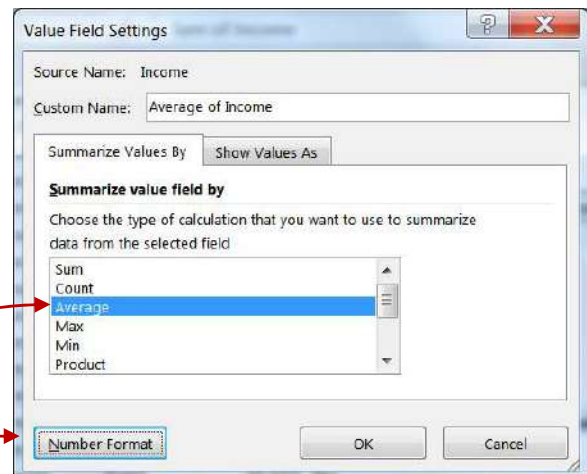


RESULT

Row Labels	Count of Fav Color
Red	5
Blue	4
Yellow	3
Green	3
Orange	3
Purple	1
Grand Total	19

Average Income

- 1) Recreate PivotTable structure, if necessary, otherwise skip to step 2
 - Open File: PivotSurvey.xlsx
 - move to cell A1
 - From the Insert tab, choose PivotTable
 - Choose Existing Worksheet
 - Type in G5 and click **OK**
- 2) Use fields Fav Color, Degree, Income
- 3) In the Values area of the field list, click on *Income*, choose **Value Field Settings**
- 4) Choose **Average**
- 5) Click **Number Format**
 - Set as a number with a comma and zero decimals



RESULT

Average of Income			
	No	Yes	Grand Total
Blue	52,743	100,023	64,563
Green	60,224	92,049	70,832
Orange	65,733	74,685	68,717
Purple	35,792		35,792
Red	52,977	41,935	48,560
Yellow		86,766	86,766
Grand Total	54,988	76,366	63,989

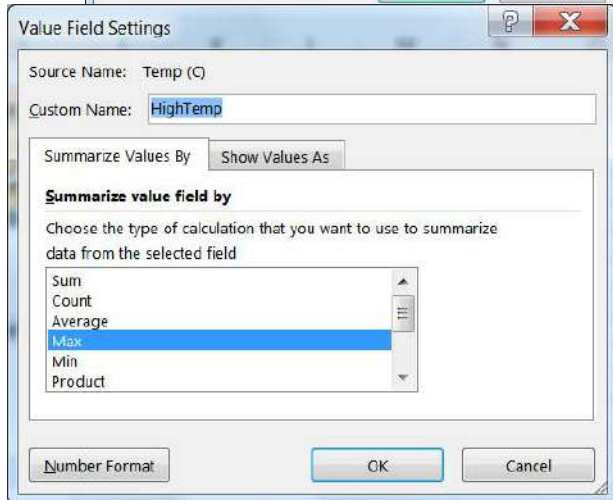
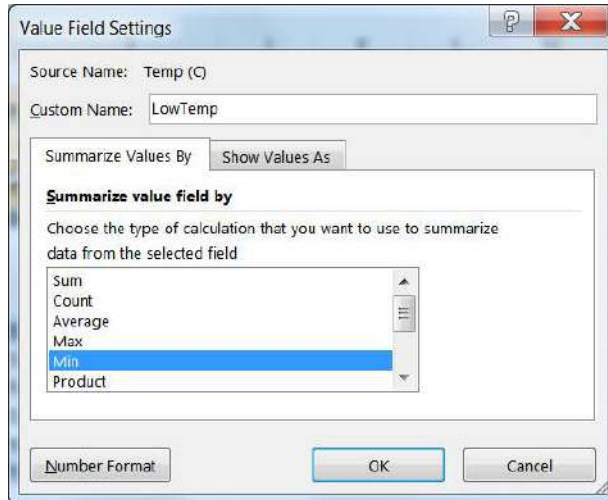
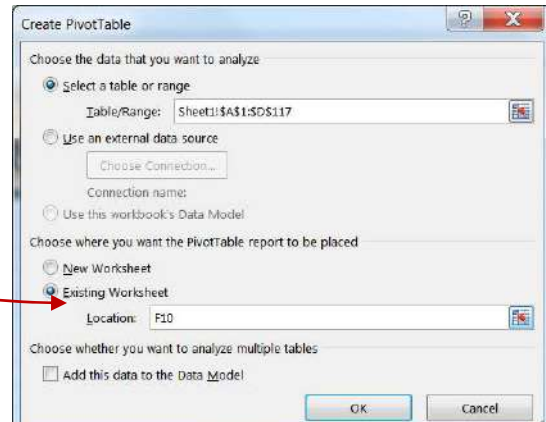
The blank values in the table mean there's no data that matches the grouping. If you would prefer to see something, such as a zero or N/A:

- Click the **Options** button, on the far left side of the **Analyze** tab.
- On the first page of the options window, *Layout & Formatting*, put what you would like to see in the **For Empty Cells Show:** option.

Range (High/Low)

- 1) Open File: PivotKangarooRats.xlsx
 - If necessary, move to cell A1
- 2) From the Insert tab, choose PivotTable
 - Choose Existing Worksheet
 - Type in F10 and click **OK**

We want the temperature range for each rat. So we need Rat as a row label, and temp in the values twice. The first temp should be the **Min**, second the **Max**.



- 3) Rats in Rows, Temp in Value
 - Drag a second Temp into Value
- 4) Click on the first **Sum of Temp** in the Values area, choose **Value Field Settings**
 - Summarize Values By **Min**
 - Number Format 1 decimal place
 - Custom Name: **Low Temp**
- 5) Click on the **Sum of Temp (2)** in the Values area, choose **Value Field Settings**
 - Summarize Values By **Max**
 - Number Format 1 decimal place
 - Custom Name: **High Temp**
- 6) From the PivotTable Tools Analyze Tab, Move PivotTable to a new sheet, or Clear All.

RESULT

KANGAROO RAT

Row Labels	Low Temp	High Temp
A01	32.9	39.0
A02	33.0	35.9
A03	32.9	39.0
A04	32.8	39.0
Grand Total	32.8	39.0

Row Labels	First Date	Last Date
A01	02/16/14	12/31/15
A02	01/25/14	12/20/15
A03	03/10/14	12/15/15
A04	01/26/14	12/30/15
Grand Total	01/25/14	12/31/15

First/Last Date

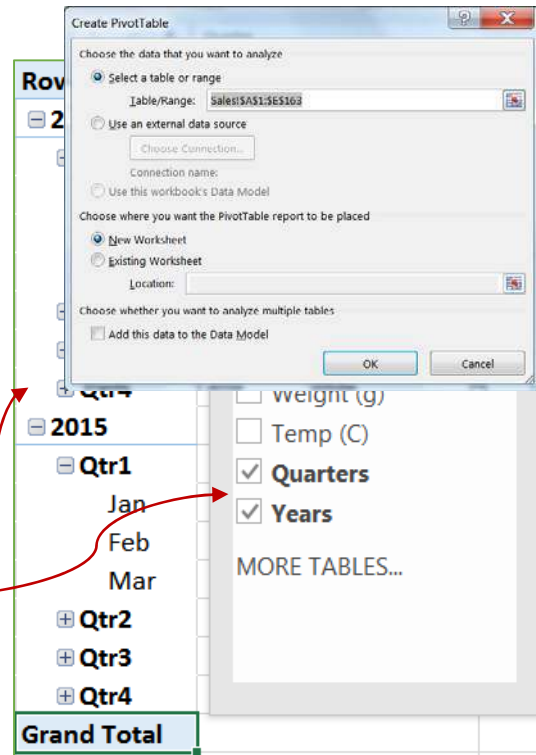
Repeat this exercise but use the Date as the value. Minimum dates are Earliest, Maximum are Latest. Don't forget to reformat the date as a Date!

- From the PivotTable Tools Analyze Tab, Move PivotTable to a new sheet, or Clear All.

Grouping Dates

We want the average weight, with zero decimals for all the rats by months and years.

- 1) Recreate PivotTable structure, if necessary, otherwise skip to step 2
 - Open File: PivotKangarooRats.xlsx
 - Move to cell A1
 - From the Insert tab, choose PivotTable
 - Choose Existing Worksheet
 - Type in G5 and click **OK**
- 2) In the field list, click the checkbox for the Date field to add it to the **Rows** area
 - Try the +/- (expand/collapse) buttons to see the different date groupings
 - Notice the new fields in the field list
 - This happens automatically, if all the values are dates. If even a single cell in the original data column is not a date, you will not be able to group. Use your sort tools on the original data to find the values that don't belong.



- 3) From the PivotTable Tools Analyze Tab, Move PivotTable to a new sheet, or Clear All.

RESULT

Avg Wgt	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	66	69	64	66	67	69	68	65	67	71	68	65
2015	63	68	67	69	68	74	68	73	64	68	72	65
Grand Total	64	69	66	68	67	70	68	66	67	70	69	65

Grouping Text with no Summary Values

- 1) Open PivotCustomers.xlsx
- 2) From the Insert tab, choose PivotTable
 - Click OK to make a new PivotTable based on the current dataset on a new worksheet.
- 3) Row Labels: County, City, Last
- 4) Format
 - Sort County Z-A; Sort City Z-A
 - Turn off the +/- buttons (Analyze Tab)
 - Autofit Columns
- 5) Design Tab
 - Subtotals – Do not show subtotals
 - Grand Totals – Off for rows and columns
 - Report Layout – Show in Tabular Form
 - Blank Rows – Insert blank line after each item

RESULT

COUNTY	CITY	LAST
Duval	Jacksonville	Finch
		Iccabob
		Joiner
		Lee
		Martin
		Newsome
		Saunders
Bradford	Starke	Appleton
		Katz
		Shores
Alachua	Waldo	Cappers
		Huey
		King
		Livingston
		McDade
		Oglethorpe
		Thomas
		Vann
Gainesville	Gainesville	Adams
		Arlington
		Brown

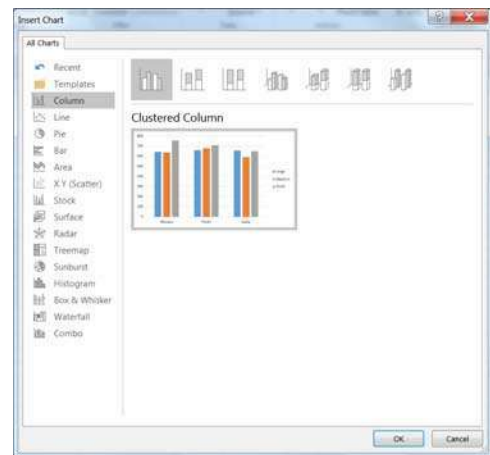
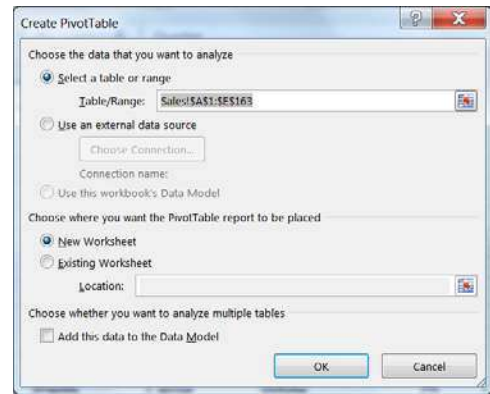
PivotChart

When you create a PivotChart, Excel will create a PivotTable to support the chart. I recommend building the PivotTable before creating the chart.

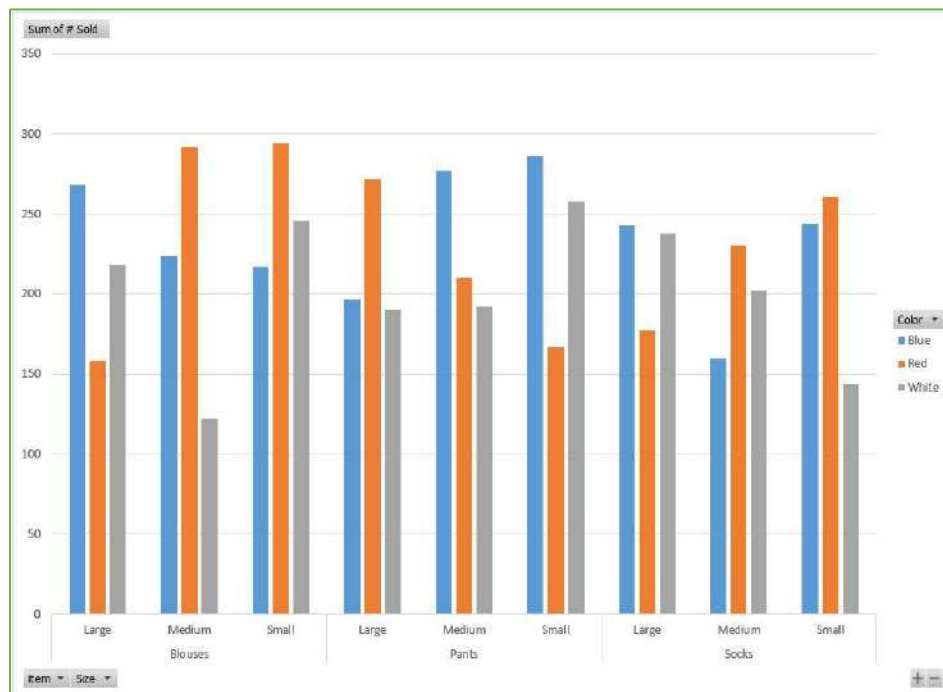
- 1) Open File: PivotSales.xlsx
 - If necessary, move to cell A1
- 2) From the Insert tab, choose PivotTable
 - Click OK to make a new PivotTable based on the current dataset on a new worksheet.
- 3) Create this table:

Sum of # Sold	Column Labels				
Row Labels	Large	Medium	Small	Grand Total	
Blouses	644	638	757	2039	
Pants	659	679	711	2049	
Socks	658	592	649	1899	
Grand Total	1961	1909	2117	5987	

- 4) On the PivotTable Analyze tab, choose **PivotChart**. Click OK to accept the **Clustered Column** chart
- 5) Turn to the Design tab in the Ribbon, click on the last button **Move Chart**. Move to a new sheet.
- 6) Add the field **Color** to the PivotChart's **Legend** area
- 7) Return to PivotTable, move **Size** from Columns into Rows. Table and Chart should both change.



RESULT



PivotChart Filtered Title

- 1) Add the field **Quarter** to the PivotChart's **Filters** area
- 2) Filter the chart to only show 1st Quarter
- 3) We can see the filtered value above the table but not on the chart.

Quarter	1st Quarter			
Sum of # Sold	Column Labels			
Row Labels	Blue	Red	White	Grand Total
Blouses	161	146	159	466
Large	88	10	92	190
Medium	23	78	25	126
Small	50	58	42	150
Pants	167	129	200	496
Large	15	85	75	175
Medium	63	17	64	144
Small	89	27	61	177
Socks	201	216	123	540
Large	83	45	43	171
Medium	26	76	64	166
Small	92	95	16	203
Total	529	491	482	1502



- 4) Click anywhere in the chart. Look for the big plus sign in the upper right hand corner. Click on it and choose **Chart Title**.
- 5) Click on the newly created Chart Title. Do not type inside the title, instead once it's selected click in the formula bar.
- 6) Press the equal sign on the keyboard, use your mouse to move back to the PivotTable, click in Cell B1 and press Enter

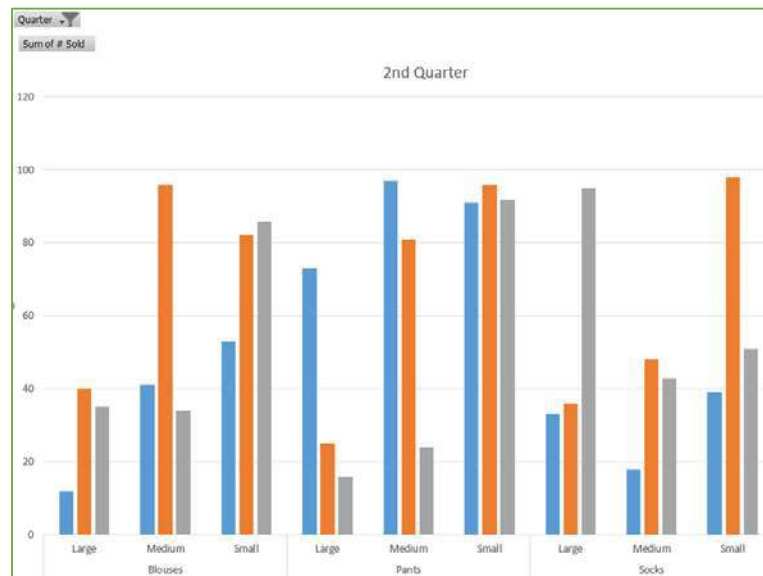
CHART ELEMENTS

- Axes
- Axis Titles
- Chart Title
- Data Labels
- Data Table
- Error Bars
- Gridlines
- Legend
- Trendline

	A	B	C	D
1	Quarter	1st Quarter		
2				

- 7) Change the Filter to **2nd Quarter**

RESULT



Things to Remember

- 1) Pivot Tables and the source data don't have to exist in the same workbook. If you forgot where the original data is located, go to the **Change Data Source** option on the **Analyze** tab.
- 2) Double-clicking on a cell within the PivotTable will create a copy of the breakdown of the data inside a table on a new sheet. This is a COPY and not linked to the original in any way. I recommend deleting it, or moving it to a different workbook.
- 3) To move a sheet to a different book, right-click on the sheet name and choose **Move or Copy...** change the dropdown **To Book**.
- 4) The +/- Buttons will expand and collapse the grouped data for that entry. You can do the entire group at once from the **Expand Field** and **Collapse Field** buttons in the PivotTable Analyze tab. The option to turn off the +/- buttons is on the far right side of the Analysis tab.
- 5) Changing the **Report Layout** on the PivotTable Tools Design tab to **Outline** or **Layout** will give each field name its own filter arrow and title.
- 6) Report filters are meant for one choice. If you want multiple choices include the field in the PivotTable, or try a **Slicer** instead.
- 7) Any Chart inserted while you're in a PivotTable will be a PivotChart.
- 8) Can't undo? Afraid you messed everything up? Close without saving. It's the **Ultimate Undo**, or use **F12** on the keyboard to **Save As** a new file.
- 9) My email address and phone number are on the second page of this packet!