Faculty and Staff Development Program

Microsoft Excel Pivot Tables Essentials 2019 Workshop

Microsoft Excel Pivot Tables Essentials 2016 Workshop

Overview

Pivot Tables are one of Microsoft Excel's most powerful features. Pivot Tables are interactive tables that allow you to manage and summarize substantial amounts of data, in a concise format for easy reporting and analysis. Therefore, this manual is an introduction to Excel Pivot Tables 2016. These instructions illustrate how you can summarize and manipulate your worksheet data by using Pivot Tables, Filters, Slicers, and Pivot Charts. This manual will also help you summarize a vast amount of data contained in a spreadsheet, in a concise format for easy reporting and analysis. The instructions will include efficient ways to control, organize, and present your data by Managing Totals, Grouping Data, Conditional Formatting, and Creating Macros. This systematic manual shows the basics of creating a Pivot Table in Excel and helps you understand how powerful Pivot Tables can be.
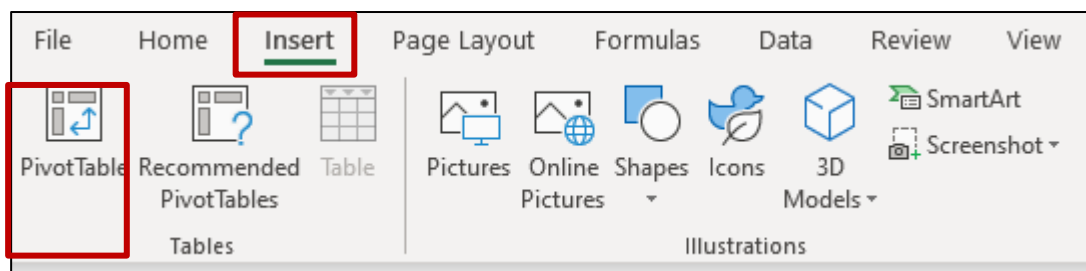
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I.   Create a PivotTable

Open the **Excel2016_Pivot_Practice.xlsx** file. The instructor will direct you to the file location.

1.   Click inside any **cell** on the spreadsheet that contains data you want to use.

2.   Select the **Insert** tab, and then click on the **PivotTable** button.

3. The **Create PivotTable** dialog box will appear.
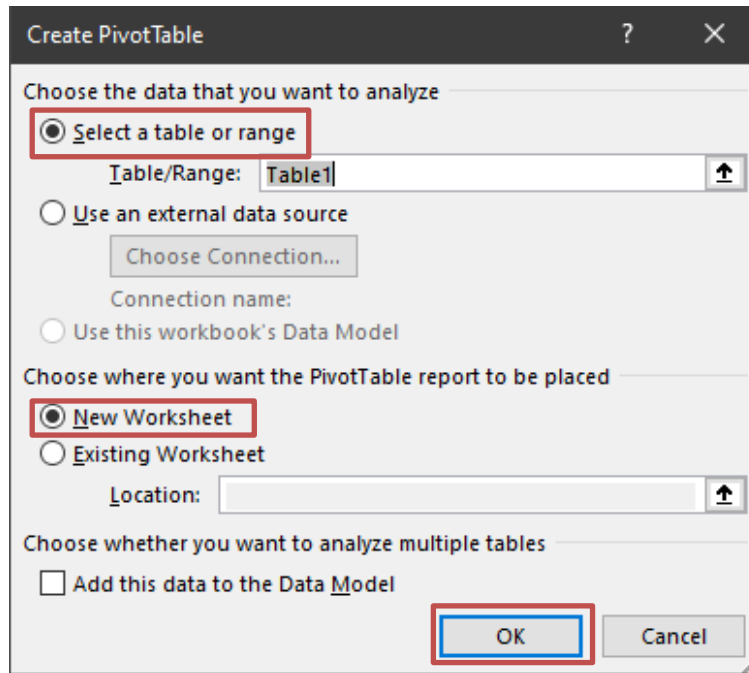
4. Choose the **Select a table or range** button (use **Table1** as your source data).

5. Choose the **New Worksheet** button (this will place your PivotTable on a new worksheet).

6. Click on the **OK** button.

7. A blank **PivotTable** along with the **PivotTable Fields** will appear on a new worksheet.
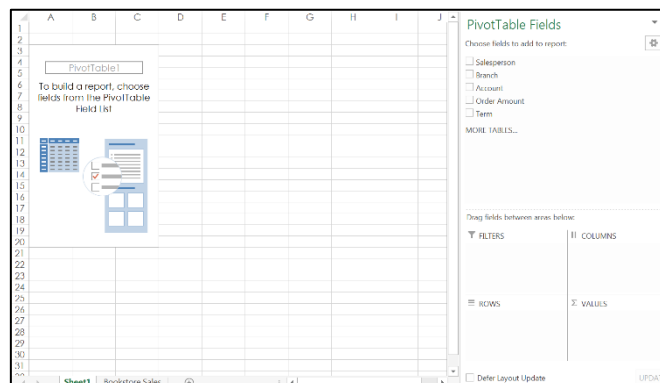
Note: In this PivotTable, you can decide which **fields** to add. Each field is simply a **column header** from your source data. In the **PivotTable Fields** section, click on the box for each field you choose to add.

8. The scenario question for this exercise will be: **What is the total amount sold by each salesperson**?
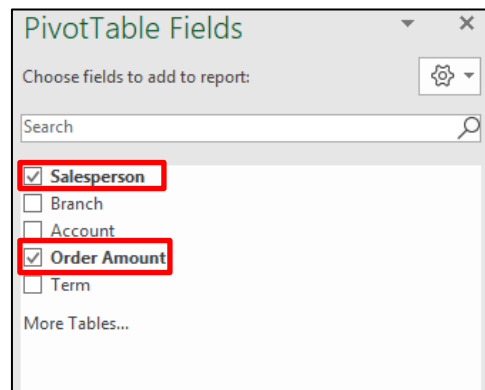
9. Click inside the boxes next to the **Salesperson** and **Order Amount** fields.

10. The selected fields are added to one of the four areas below the **PivotTable Fields**. In this exercise, the **Salesperson** field is added to the **Rows** area, while the **Order Amount** has been added to the **Values** area.

Note: You can also place your mouse pointer on a field, then hold down the right mouse button, and drag and drop the field to the desired area (FILTERS, COLUMNS, ROWS, VALUES).
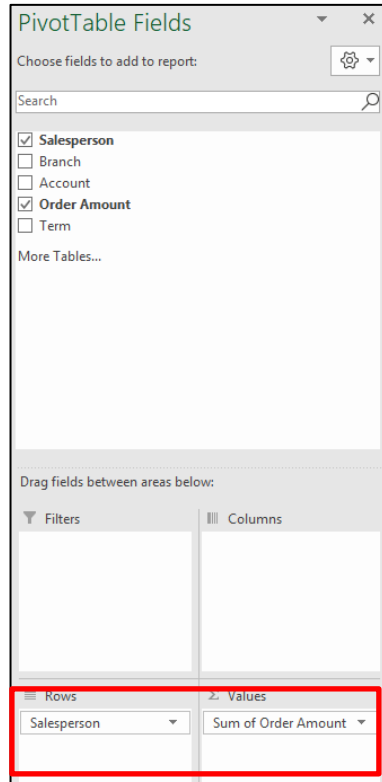
The **PivotTable** will calculate and summarize the selected fields. In this exercise, the PivotTable shows the amount sold by each salesperson.

Total amount sold by each salesperson
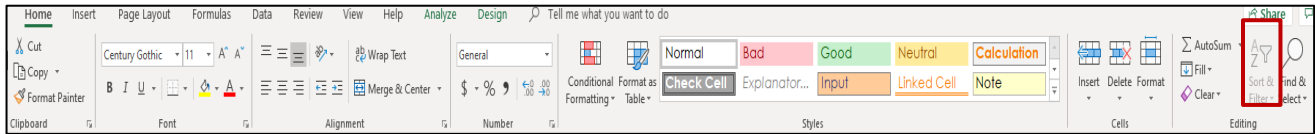
You can sort the data on your PivotTable by using the **Sort & Filter** button, located on the **Home** ribbon.

> **Note**: You can also apply any type of **number formatting** to your data. Some types of formatting may disappear when you modify your **PivotTable**.

II. Update PivotTable Data

If you change any data on your source worksheet (Bookstore Sales), the PivotTable will not update automatically. To update your PivotTable data, select any cell on your PivotTable, and then the **PIVOTTABLE TOOLS** ribbon will appear.
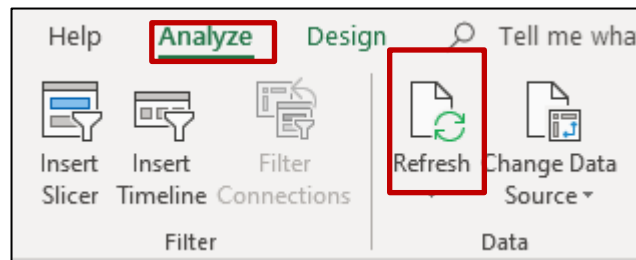
1. Click on the **Analyze** tab.

2. Click on the **Refresh** button. Your PivotTable will reflect any changes to your source worksheet.

III.   Pivoting Data

PivotTables allows you to quickly reorganize data, so that you can view your worksheet data in diverse ways. Pivoting data can help you experiment the data to discover trends and patterns.

1. The earlier exercise scenario question was: **What is total amount sold by each Salesperson**?

2. This exercise scenario question will be: **What is the total amount sold in each Term**? You can do this by changing the field in the **Row** section.
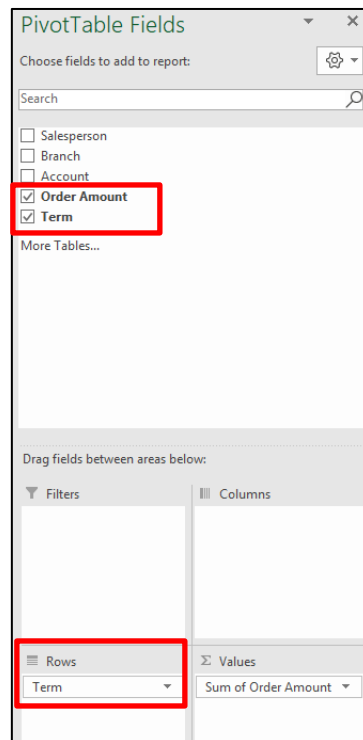
3. To select a different **Field** for the **ROWS** section, go to the **PivotTable Fields** section and deselect the **Salesperson** field. This will remove the Salesperson field from the **ROWS** section.

4. Click on the box next to the **Term** field. The Term will appear in the **ROWS** section.

5. The **PivotTable** will adjust to show the new field choice. Your data now shows the total order amount for each term.

Note: You can also add or remove **Field** names to the **ROWS** or **VALUES** sections by using the drag and drop feature. **To add a Field** to the ROWS or VALUES area, place your mouse pointer on the desired **Field** name found in the **PivotTable Fields** section, hold down the right mouse button, and then drag and drop in the ROWS or VALUES section. **To remove a Field** from the ROWS or VALUES section, place your mouse pointer on the desired **Field** found in the ROWS or VALUES section, hold down the right mouse button, and then drag and drop anywhere outside of the ROWS or VALUES section.

IV. Add Columns

You can show multiple columns on your **PivotTable**. As noted above, you can drag and drop Fields into any of the PivotTable sections (Filters, Columns, Rows, and Values). In this exercise you will use the drag and drop feature.

1. The earlier exercise you created a PivotTable showing the total order amount for each term. For this exercise, you will include columns with each **Branch** campus that reflects their order amount for each **Term**.
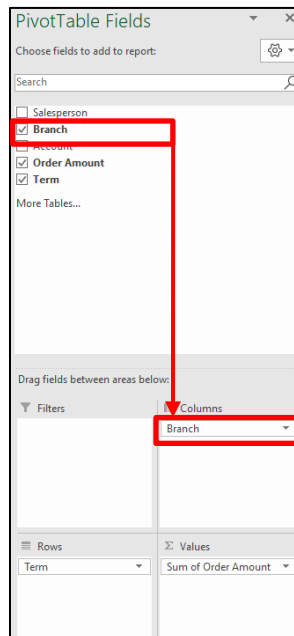
2. Place your mouse pointer on the **Branch** field, hold your left mouse button down, then drag **Branch** to the **COLUMNS** section, and release your mouse button.

3. The **PivotTable** will include a column for each **Branch** campus.

Sum of Order Amount	Column Labels				
Row Labels	Greensburg	Johnstown	Pittsburgh	Titusville	Grand Total
Fall	1690	3150	3110	1140	9090
Spring	1950	1515	3975	1720	9160
Summer	700	525	3790	300	5315
Grand Total	4340	5190	10875	3160	23565

Note: There are automatic filter buttons on the **Row** and **Column** labels. This enables you to customize your data by selecting or omitting any label item.

V. Filters

Sometimes you may want focus on just a certain choice of your data. **Filters** are used to narrow down the data on your PivotTable, allowing you to view only the information you need.

1. In this exercise, you will filter certain salespeople to find how they affect the total sales. You will drag a field item from the **PivotTable Fields** to the **Filters** section.
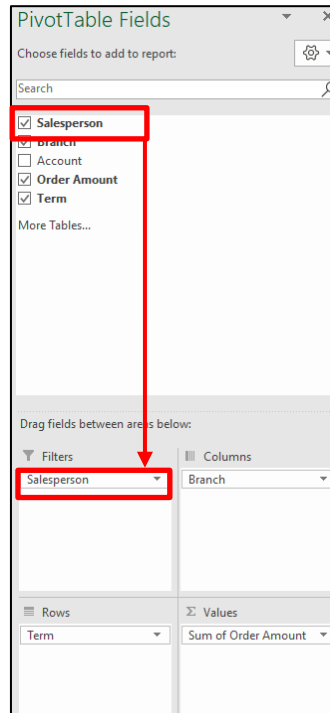
2. Place your mouse pointer on the **Salesperson** field, hold your left mouse button down, then drag **Salesperson** to the **FILTERS** section, and release your mouse button.

3. The **Salesperson** filter will appear on the top row of your **PivotTable**.

	A	B	C	D	E	F
1	Salesperson	(All)				
2						
3	Sum of Order Amount	Column Labels				
4	Row Labels	Greensburg	Johnstown	Pittsburgh	Titusville	Grand Total
5	Fall	1690	3150	3110	1140	9090
6	Spring	1950	1515	3975	1720	9160
7	Summer	700	525	3790	300	5315
8	Grand Total	4340	5190	10875	3160	23565

4. Click on the filter drop-down arrow next to **Salesperson**.

5. The tree list for **Salesperson** will appear.
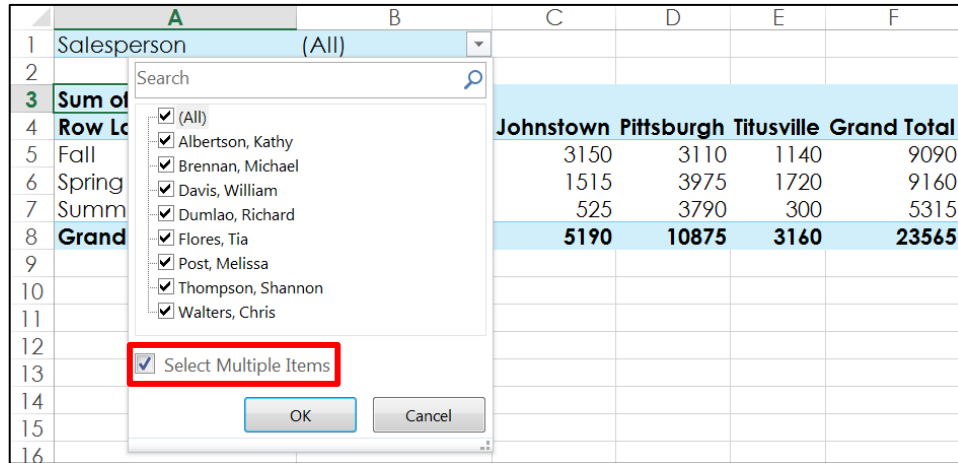
6. Click in the check box next to **Select Multiple Items**.

7. **Notice** all the salespeople contained in your data are a part of the selection.

8. Now you can deselect any sales person within your data. The sales total will not reflect any deselected person's sales.
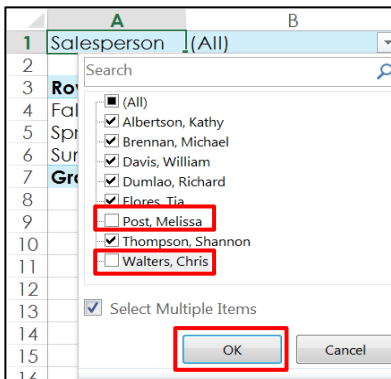
9. **Deselect** the box for any field item you do not want to include in the **PivotTable**. In this exercise, you will deselect the boxes for two different salespeople (Melissa Post and Chris Walters).

10. Click on the **OK** button.

11. The **PivotTable** will adjust to reflect your changes. **Notice** the decrease in the **Grand Total** due to omitting the two salespeople.

|	A	B	C	D	E	F
1	Salesperson	(Multiple Items)				
2						
3	Sum of Order Amount	Column Labels				
4	Row Labels	Greensburg	Johnstown	Pittsburgh	Titusville	Grand Total
5	Fall	925	3150	2755	1140	7970
6	Spring	1375	1515	1220	1720	5830
7	Summer	350	525	2525	300	3700
8	**Grand Total**	**2650**	**5190**	**6500**	**3160**	**17500**

VI.   Slicers

Slicers make filtering data on PivotTables easier and faster. Slicers are Filters, but allows you to instantly pivot your data. If you often use Filters on your PivotTables, you may want to consider using Slicers instead of Filters.

A.   Add a Slicer

	A	B	C	D	E	F
1	Salesperson	(All)				
2						
3	Sum of Order Amount	Column Labels				
4	Row Labels	Greensburg	Johnstown	Pittsburgh	Titusville	Grand Total
5	Fall	1690	3150	3110	1140	9090
6	Spring	1950	1515	3975	1720	9160
7	Summer	700	525	3790	300	5315
8	**Grand Total**	**4340**	**5190**	**10875**	**3160**	**23565**

1. Select any cell on your **PivotTable**.

2. The **PIVOTTABLE TOOLS** ribbon will appear.
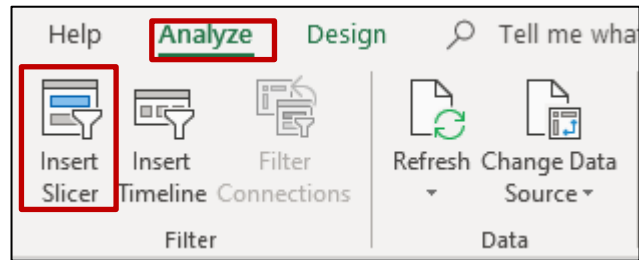
3. Click on the **Analyze** tab, found on the **PIVOTTABLE TOOL** ribbon, and then click on the **Insert Slicer** button.

4. The **Insert Slicers** dialog window will appear.
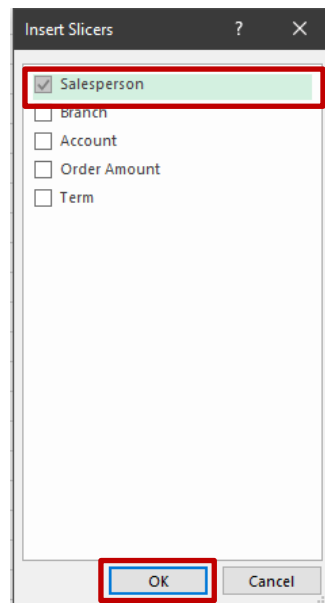
5. Select your desired **Field**/s. In this exercise, click on the box next to **Salesperson**.

6. Click on the **OK** button.

7. The **Slicer** will appear on your **PivotTable**. Each selected Field item is highlighted.

	A	B	C	D	E	F	G	H	I
1	Salesperson	(All)					**Salesperson**		▼ₓ
2									
3	**Sum of Order Amount**	**Column Labels**					Albertson, Kathy		▲
4	**Row Labels**	Greensburg	Johnstown	Pittsburgh	Titusville	Grand Total	Brennan, Michael		
5	Fall	1690	3150	3110	1140	9090	Davis, William		
6	Spring	1950	1515	3975	1720	9160			
7	Summer	700	525	3790	300	5315	Dumlao, Richard		▤
8	**Grand Total**	**4340**	**5190**	**10875**	**3160**	**23565**	Flores, Tia		
9							Post, Melissa		
10									
11							Thompson, Shan...		
12									
13							Walters, Chris		▼
14									
15									

8. Just like **Filters**, you can select or deselect items on the **Slicer**. The **PivotTable** will instantly reflect your choice. Try selecting different Field items to see how it will affect your data. To select multiple Field items from a **Slicer**, click on your first choice, then hold down the **Ctrl** key and select your other desired item/s.

9. You can also click on the **Filter** icon on the top-right corner of the **Slicer** window to select all items at once.

VII.   Pivot Charts

Pivot Charts are like Charts and displays data from your **PivotTable**. Like Charts, you can select a **chart type**, **layout**, and **style** that best represents your data.

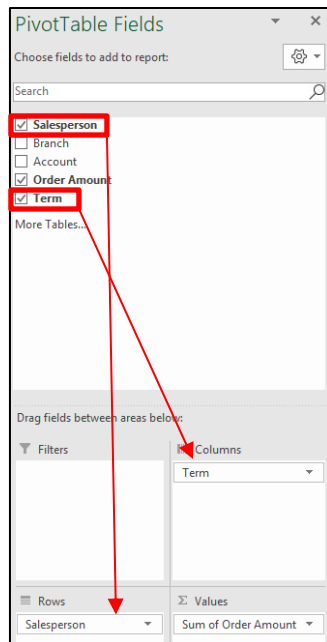In this exercise, you will change the **PivotTable** data to show each Salesperson's total sales by Term.

1. Deselect **Salesperson**, **Branch**, and **Term** fields by clicking on their check boxes.

2. Place your mouse pointer on the **Salesperson** field, hold down the left mouse button and then drag and drop **Salesperson** into the **ROWS** section.

3. Place your mouse pointer on the **Term** field, hold down the left mouse button and then drag and drop **Term** into the **COLUMNS** section.

A.   Create a PivotChart

A **Pivot Chart** will help you see your information more concise.
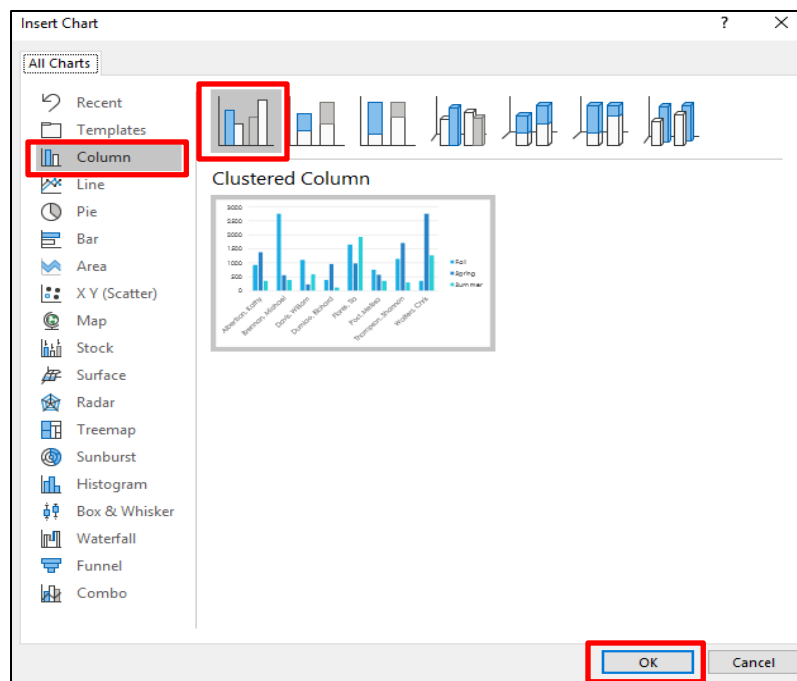
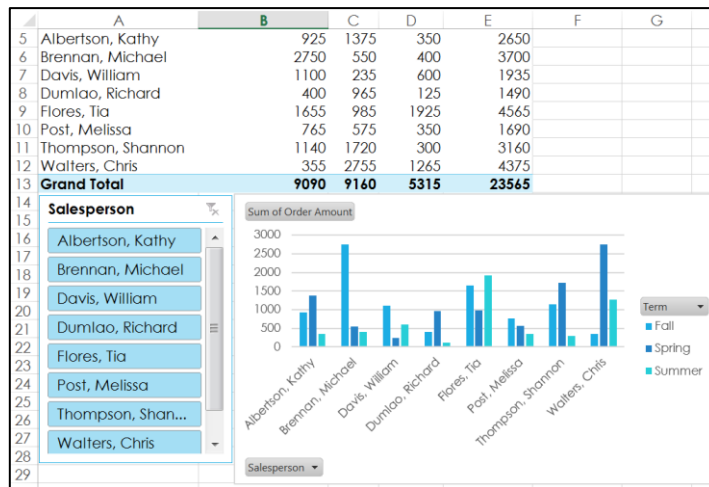1. Select any cell in your **PivotTable**.
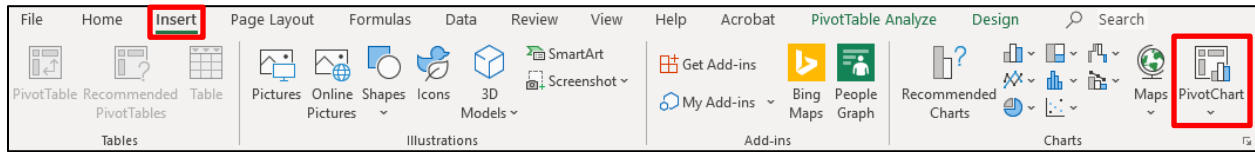
2. Click on the **Insert** tab, and then click on the **PivotChart** button.

3. The **Insert Chart** dialog box will appear.

4. Select your desired **chart type** and **layout**. For this exercise, select the default **Column** chart type.

5. Click on the **OK** button.

6. The **PivotChart** will appear next to your **PivotTable**.

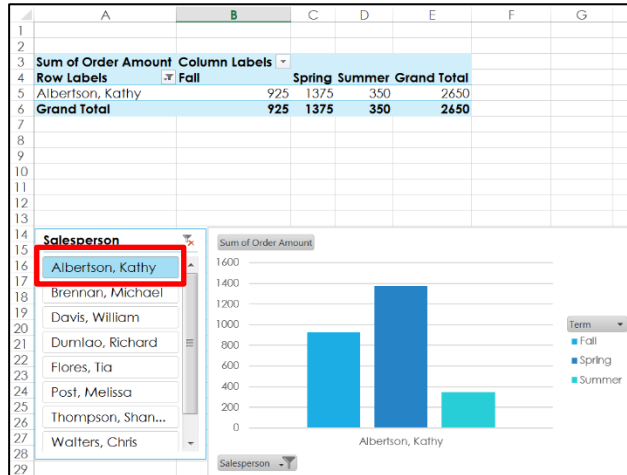
B. Use Slicer to Change Data

The following instructions will illustrate how to change your data display by using the **Slicer** and **Filters**. The **PivotChart** and **PivotTable** will automatically adjust to show the data change.
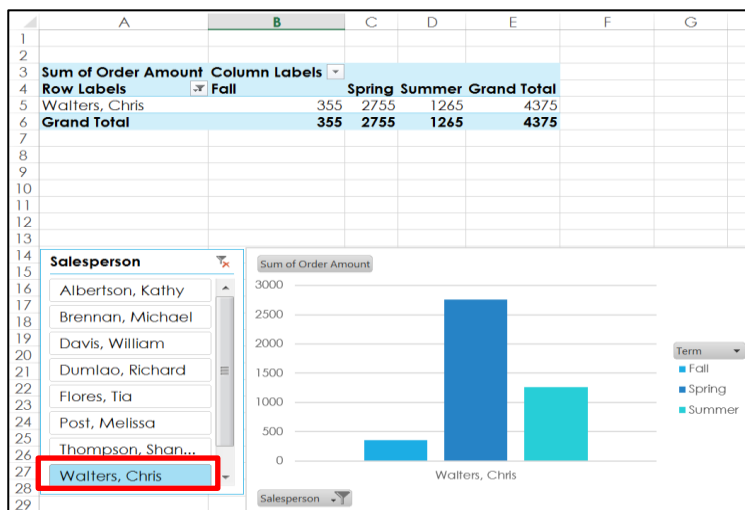
1. Click on the Salesperson, **Walters, Chris** found on the **Slicer**. *Notice* the **PivotChart** and **PivotTable** automatically reflects your choice.

2. Click on the Salesperson, **Albertson, Kathy** found on the **Slicer**. *Notice* the **PivotChart** and **PivotTable** automatically reflects your new choice.
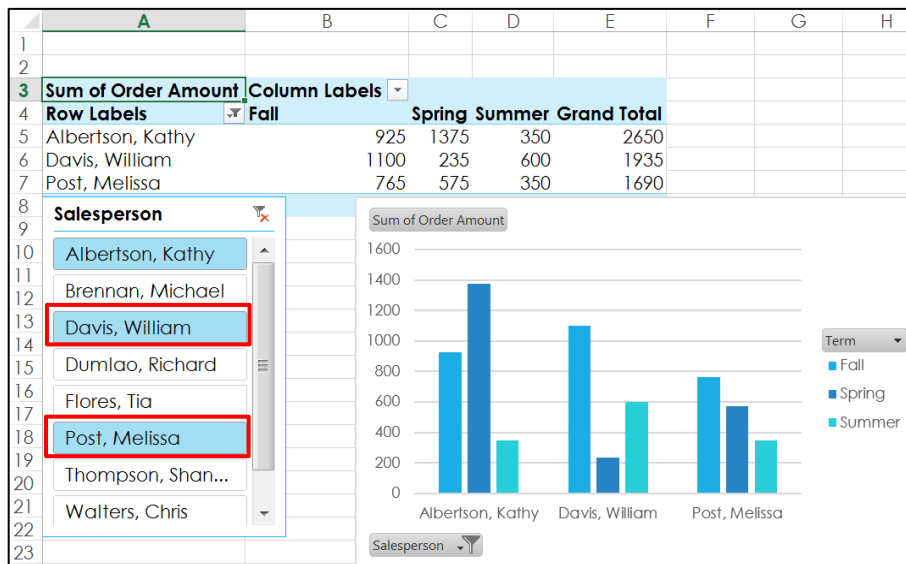
3. **Albertson** is the selected on the **Slicer**, so now hold drop the **Ctrl** key while clicking on the salespeople, **Davis, William** and **Post, Melissa**. *Notice* your selections automatically reflect information for all three sales people.
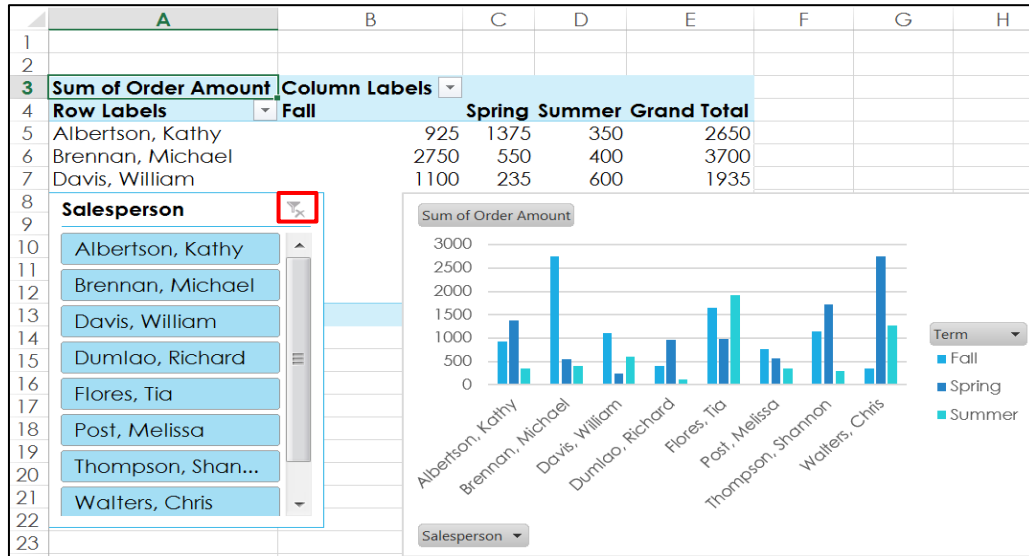
4. Click on the **Filter** button, found on the **Slicer**. *Notice* all the salespeople are reselected and the **PivotChart** and **PivotTable** automatically reflect your action.

C.   Use Filters to Change Data
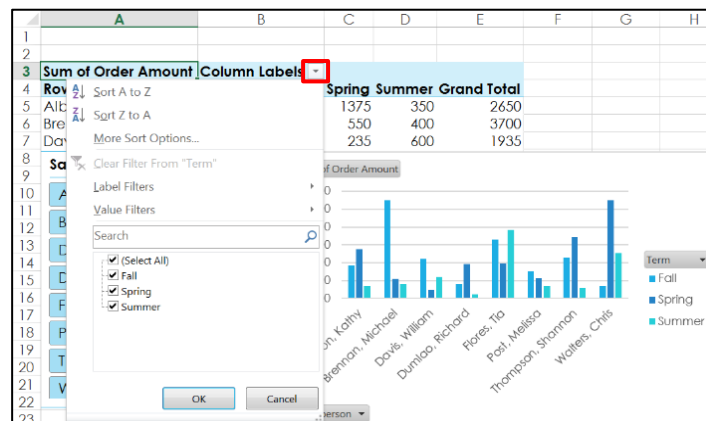
1. Click on the drop-drown arrow next to the **Column Labels**, found on the **PivotTable**. *Notice* you have the choice of selecting one or multiple columns that will reflect your data choice.

VIII. Connect to an External Data Source

You can use data that is not stored in your active worksheet. This section illustrates how to connect to an external data source that is located on your computer's system drive. (**For future reference –** workshop hands-on instruction starts in section 2.)

1. Launch an active Excel worksheet.
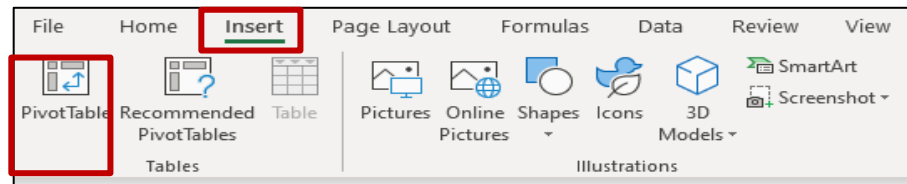
2. Select the **Insert** ribbon tab, and then click on the **PivotTable** button.

3. The **Create PivotTable** window will appear.
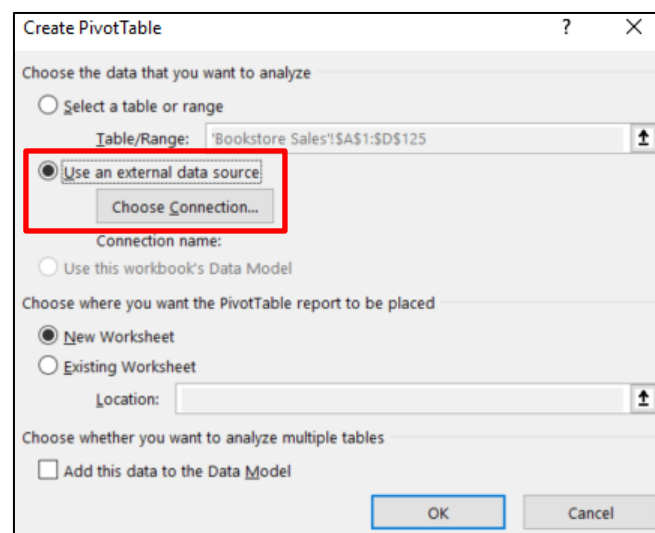
4. Select the **Use an external data source** radio button, and then click on the **Choose Connection** button.

5. The **Existing Connections** window will appear.
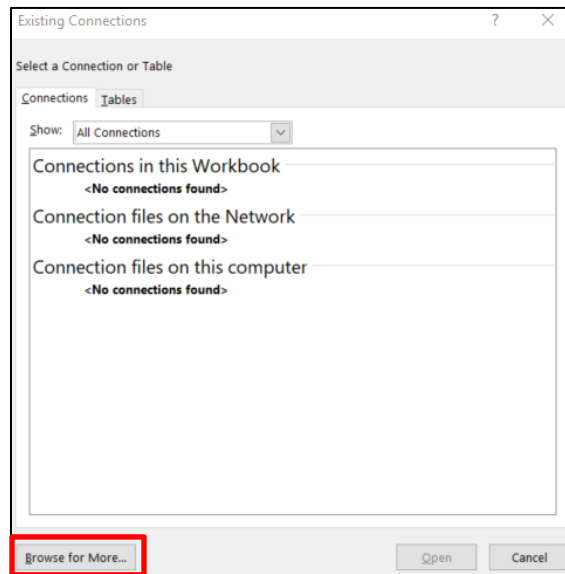
6. Click on the **Browse for More** button.

7. The **Select Data Source** window will appear.

8. Navigate to where your file is located, and then select it.

9. Click on the **Open** button.

10. The **Select Table** window will appear.
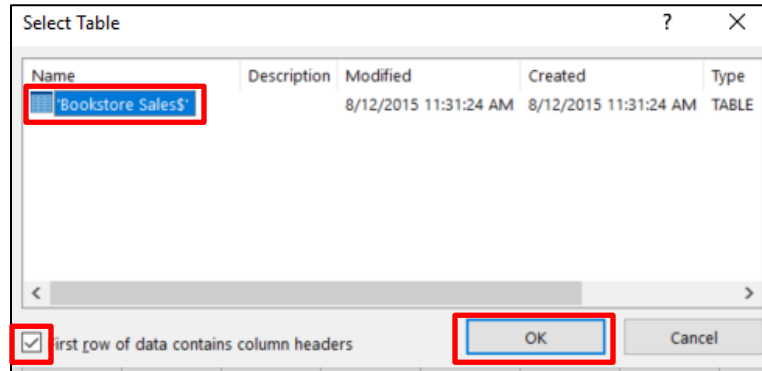
11. Your external data file will appear selected in the **Name** section.

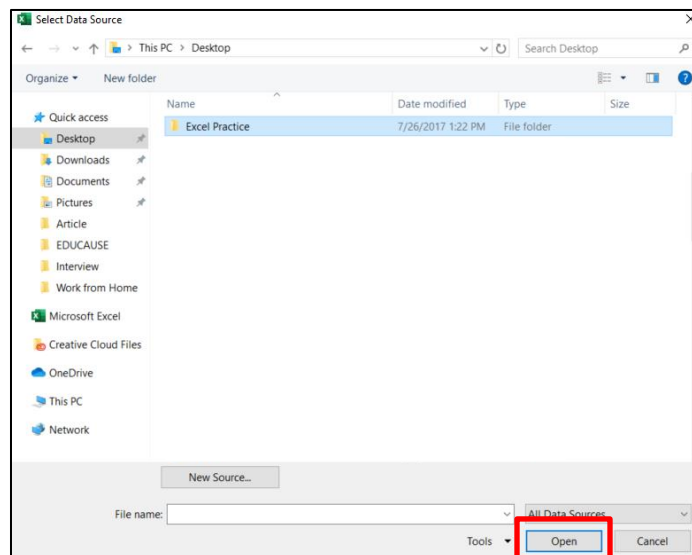12. Click on the **First row of the data contains column headers** check box. (Your data file should have the column headers in the first row.)

13. Click on the **OK** button.

14. The **Create PivotTable** window will appear.
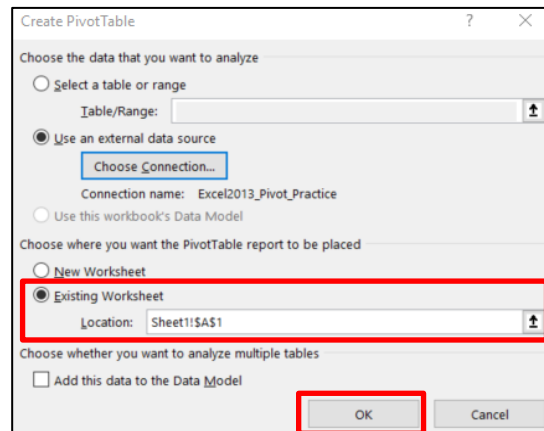
15. Select the **Existing Worksheet** radio button. (Notice that the **Location** of your external file begins in the first cell.)

16. Click on the **OK** button.

17. The bare-bone **PivotTable** sheet will appear.
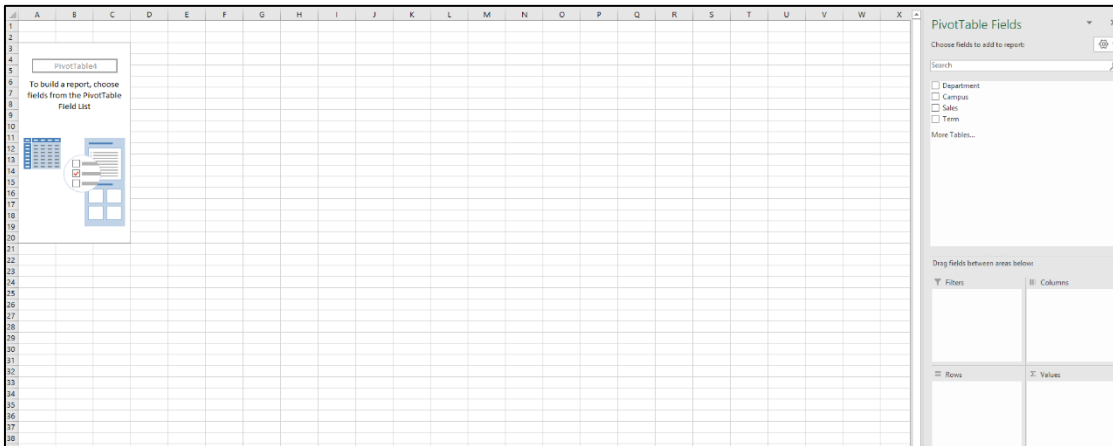
18. Now you can create a PivotTable by selecting the desired **PivotTable fields**.

IX.   Create a Recommended PivotTable

Microsoft Excel provides multiple recommended PivotTables to choose from that correlate with your spreadsheet data. To illustrate the various recommended PivotTables, open the **Excel2016_PivotTable Level 2_PracticeFile.xlsx** file. (The instructor will direct you to the file location.)

11. Click on any **cell** in the spreadsheet that has data.
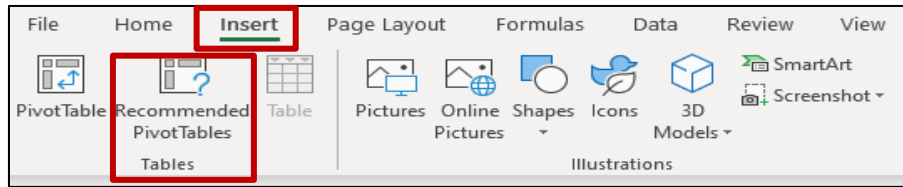
12. Select the **Insert** ribbon tab, and then click on the **Recommended PivotTable** button.

13. The **Recommended PivotTable** dialog box will appear. On the left-side of the dialog box, several recommended **PivotTable** will appear based on your spreadsheet data.
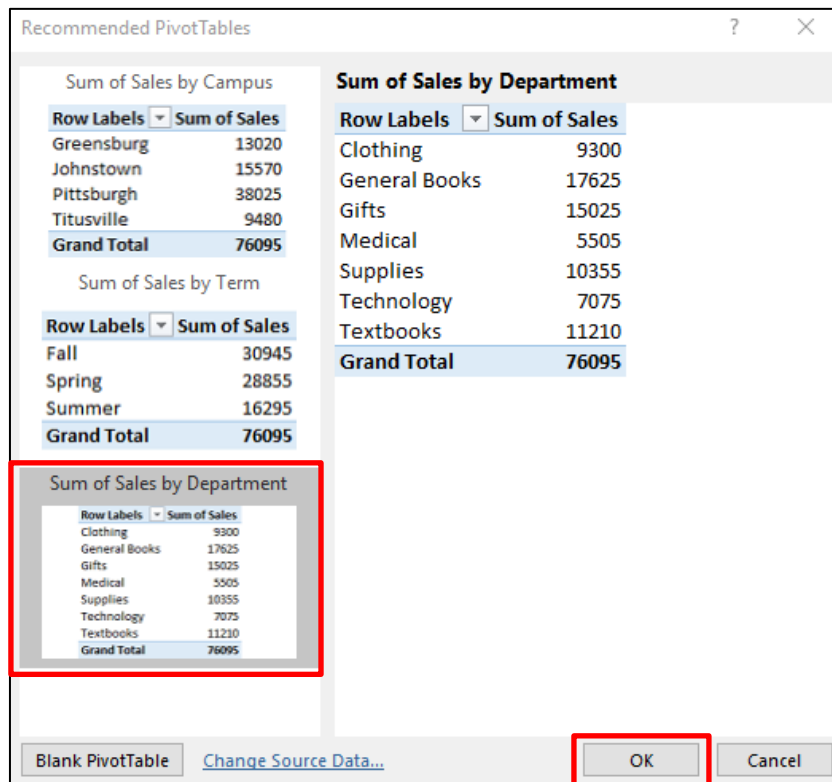
14. Select the PivotTable that best represents your desired data structure. For this exercise choose the **Sum of Sales by Department** PivotTable preview.

15. Click on the **OK** button.

> **Note**: There may be Recommended PivotTables that do not represent an appropriate data structure. If so, click on the **Blank PivotTable** button to create your PivotTable from scratch.

Row Labels	Sum of Sales
Clothing	9300
General Books	17625
Gifts	15025
Medical	5505
Supplies	10355
Technology	7075
Textbooks	11210
Grand Total	76095

16. The **Sum of Sales by Department** PivotTable will appear.

X.   Manage Subtotals and Grand Totals

Microsoft Excel allows you to manipulate the default structure of your PivotTable's Subtotals and Grand Totals. This section will illustrate how to manage you Subtotals and Grand Totals by using the previous Recommended PivotTable from section II with a slight pivot.

1. Place your mouse pointer over the **Campus** field, and then hold down the left mouse button.

2. Drag the **Campus** field to the **ROWS** section, and then drop (release the mouse button) above the **Department** field.

3. Place your mouse pointer over the **Term** field, and then hold down the left mouse button.

4. Drag the **Term** field to the **COLUMNS** section, and then drop (release the mouse button).

5. Your new **PivotTable** will appear.

6. Each **Campus Bookstore** and its associated **Departments** are on the PivotTable rows. The **Terms** are listed in the PivotTable columns. Notice that the Subtotals are listed above the Department entries. Individuals who read from top to bottom may desire to have the Subtotals at the bottom of the Department entries. The following steps will illustrate how to reverse your Subtotals from top to bottom.

	A	B	C	D	E	F	G	H	I	J
1	Sum of Sales	Column Labels								
2	Row Labels	Fall	Spring	Summer	Grand Total					
3	Greensburg	5070	5850	2100	13020					
4	General Books	2615	1375	350	4340					
5	Gifts		1375	350	1725					
6	Medical	765	575	700	2040					
7	Supplies		500	700	1200					
8	Technology	765	1875		2640					
9	Textbooks	925	150		1075					
10	Johnstown	9450	4545	1575	15570					
11	Clothing	400			400					
12	General Books	4650	2480	525	7655					
13	Gifts	4000	550		4550					
14	Technology	400	965	125	1490					
15	Textbooks		550	925	1475					
16	Pittsburgh	13005	13300	11720	38025					
17	Clothing	250	3960	1265	5475					
18	General Books	3225	235	825	4285					
19	Gifts	980	5355	2040	8375					
20	Medical	380	1310	600	2290					
21	Supplies	4885	985	425	6295					
22	Technology	530	235	2180	2945					
23	Textbooks	2755	1220	4385	8360					
24	Titusville	3420	5160	900	9480					
25	Clothing	1405	1720	300	3425					
26	General Books		1345		1345					
27	Gifts		375		375					
28	Medical	875		300	1175					
29	Supplies	1140	1720		2860					

7. To reverse the location of your Subtotals from top to bottom, go to the **PIVOTTABLE TOOLS** ribbon.

8. Select any data cell in your PivotTable.
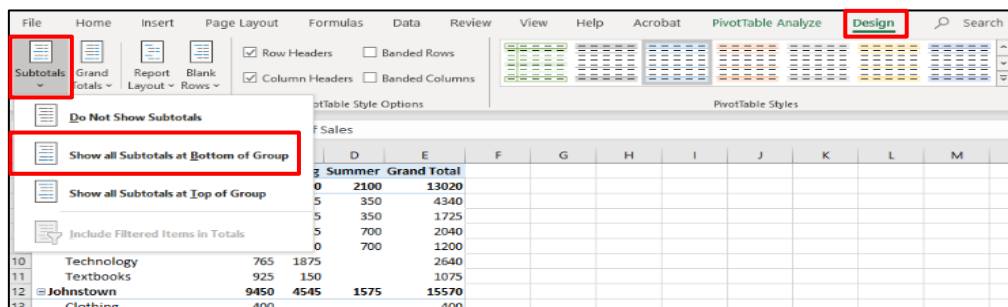
9. Select the **DESIGN** ribbon tab, and then click on the **Subtotals** button.

10. Select the **Show all Subtotals at Bottom of Group** from the menu options.

11. The **Subtotals** appear below your campus department list.

12. You also have the option of removing your **Subtotals** and only have the **Grand Totals** appear.
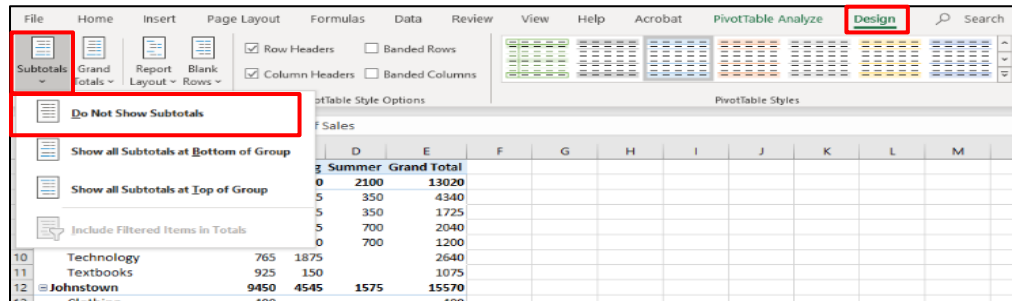
13. On the **PIVOTTABLE TOOLS** ribbon, select the **DESIGN** tab.

14. Click on the **Subtotals** button.

15. Select the **Do Not Show Subtotals** from the menu options.

16. Only the **Grand Totals** appear on your PivotTable.

Sum of Sales	Column Labels			
Row Labels	Fall	Spring	Summer	Grand Total
⊟Greensburg				
General Books	2615	1375	350	4340
Gifts		1375	350	1725
Medical	765	575	700	2040
Supplies		500	700	1200
Technology	765	1875		2640
Textbooks	925	150		1075
⊟Johnstown				
Clothing	400			400
General Books	4650	2480	525	7655
Gifts	4000	550		4550
Technology	400	965	125	1490
Textbooks		550	925	1475
⊟Pittsburgh				
Clothing	250	3960	1265	5475
General Books	3225	235	825	4285
Gifts	980	5355	2040	8375
Medical	380	1310	600	2290
Supplies	4885	985	425	6295
Technology	530	235	2180	2945
Textbooks	2755	1220	4385	8360
⊟Titusville				
Clothing	1405	1720	300	3425
General Books		1345		1345
Gifts		375		375
Medical	875		300	1175
Supplies	1140	1720		2860
Textbooks			300	300
Grand Total	**30945**	**28855**	**16295**	**76095**

XI.   Group PivotTable Fields

When a large amount of data is contain in the PivotTable's rows, then it is difficult to read or understand specific data. The **Group** feature in PivotTable allows you to show and hide data to make sense of only the data you desire to view.

A.   Hide Detail

Microsoft Excel allows you to hide data in your PivotTable, so that your desired data is visible. The PivotTable below list each campus bookstore and its associated department sales for each Term. This exercise will illustrate how to hide each bookstore department sales entry and only show the campus totals.

1. The **Hide Detail** button appears on the left side of each **Campus** name.

Sum of Sales	Column Labels			
Row Labels	Fall	Spring	Summer	Grand Total
Greensburg	**5070**	**5850**	**2100**	**13020**
General Books	2615	1375	350	4340
Gifts		1375	350	1725
Medical	765	575	700	2040
Supplies		500	700	1200
Technology	765	1875		2640
Textbooks	925	150		1075
Johnstown	**9450**	**4545**	**1575**	**15570**
Clothing	400			400
General Books	4650	2480	525	7655
Gifts	4000	550		4550
Technology	400	965	125	1490
Textbooks		550	925	1475
Pittsburgh	**13005**	**13300**	**11720**	**38025**
Clothing	250	3960	1265	5475
General Books	3225	235	825	4285
Gifts	980	5355	2040	8375
Medical	380	1310	600	2290
Supplies	4885	985	425	6295
Technology	530	235	2180	2945
Textbooks	2755	1220	4385	8360
Titusville	**3420**	**5160**	**900**	**9480**
Clothing	1405	1720	300	3425
General Books		1345		1345
Gifts		375		375
Medical	875		300	1175
Supplies	1140	1720		2860
Textbooks			300	300
Grand Total	**30945**	**28855**	**16295**	**76095**

2. Click on each of the **Hide Detail** buttons. The Campus Bookstores' Department Sales are hidden and only the Subtotals and Grand Totals appear.

| Sum of Sales	Column Labels			
Row Labels	Fall	Spring	Summer	Grand Total
⊞ Greensburg	5070	5850	2100	13020
⊞ Johnstown	9450	4545	1575	15570
⊞ Pittsburgh	13005	13300	11720	38025
⊞ Titusville	3420	5160	900	9480
Grand Total	30945	28855	16295	76095

3. When the Department data is hidden, the **Show Detail** button will appear next to the **Campus** name.

4. Click on the **Show Detail** button to view each department sales again.
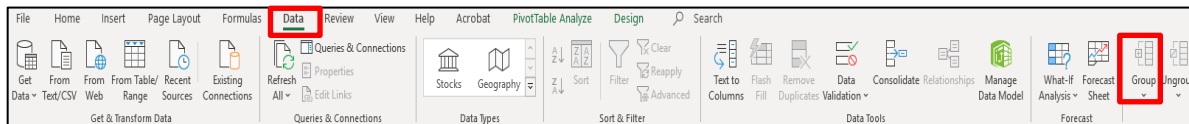
B.   Group Data

The **Group** feature allows you to group data that you desire to be hidden in PivotTable.

1. In this exercise the **Greensburg Campus Bookstore** data will be used to illustrate how to hide department entries. Only two department entries (**General Books** and **Textbooks**) will be viewed.

2**.** Select the entire **7 thru 10 rows**. These data entries will be grouped then hidden.

3**.** Select the **DATA** ribbon tab, and then click on the **Group** button.

4. The **Grouping Level** indictor appears with a **Hide Detail** button on the left-side of rows 7 thru 10.


17. Click on the **Hide Detail** button.

18. The department entries that were grouped are hidden. Only the **General Books** and **Textbooks Departments** entries appear. The Bookstore's Subtotals and Grand Total still reflect the totals from the hidden departments as well.

	3	Sum of Sales		Column Labels				
	4	Row Labels		Fall		Spring	Summer	Grand Total
	5	Greensburg		5070		5850	2100	13020
	6	General Books		2615		1375	350	4340
+	11	Textbooks		925		150		1075

8. Click on the **Show Detail** button to view the hidden data rows.

9. To remove **Grouping Level** indicator, select the entire **7 thru 10 rows** again.
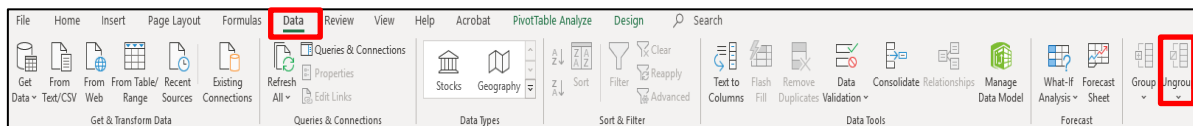
10. Select the **DATA** ribbon tab, and then click on the **Ungroup** button.

XII.   Data Field Number Format

When you create a PivotTable, Microsoft Excel does not apply number formatting. This section will illustrate how to apply number formatting to the body of your PivotTable.

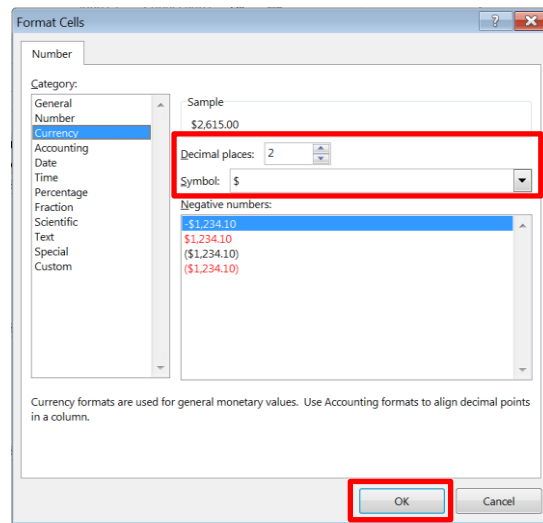| Sum of Sales	Column Labels ▾			
Row Labels ▾	Fall	Spring	Summer	Grand Total
⊟ Greensburg	5070	5850	2100	13020
General Books	2615	1375	350	4340
Gifts		1375	350	1725
Medical	765	575	700	2040
Supplies		500	700	1200
Technology	765	1875		2640
Textbooks	925	150		1075
⊟ Johnstown	9450	4545	1575	15570
Clothing	400			400
General Books	4650	2480	525	7655
Gifts	4000	550		4550
Technology	400	965	125	1490
Textbooks		550	925	1475

10. Select any cell with a value in the body of your PivotTable. (**Do not select text.**)
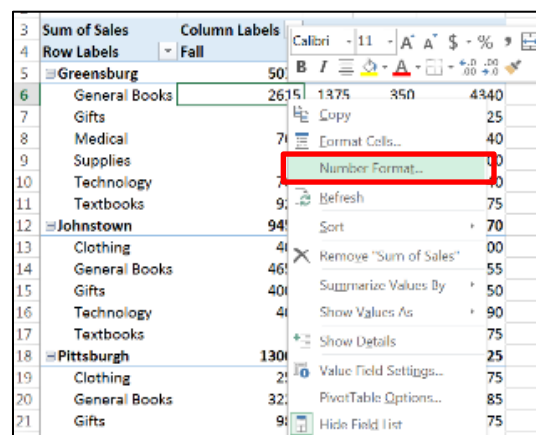
11. Place your mouse pointer on the selected cell and hold down the right mouse button.

12. Select the **Number Format** option from the menu options.

13. The **Format Cells** dialog window will appear.

14. In the **Category** section, select **Currency**.

15. In the **Sample** section, select **2 Decimal places** for this exercise.

16. In the **Symbol** section, select the **$** symbol (represents U.S. currency).

17. Click on the **OK** button.

18. The **Currency** and **Decimal** formats are applied to all of your values.
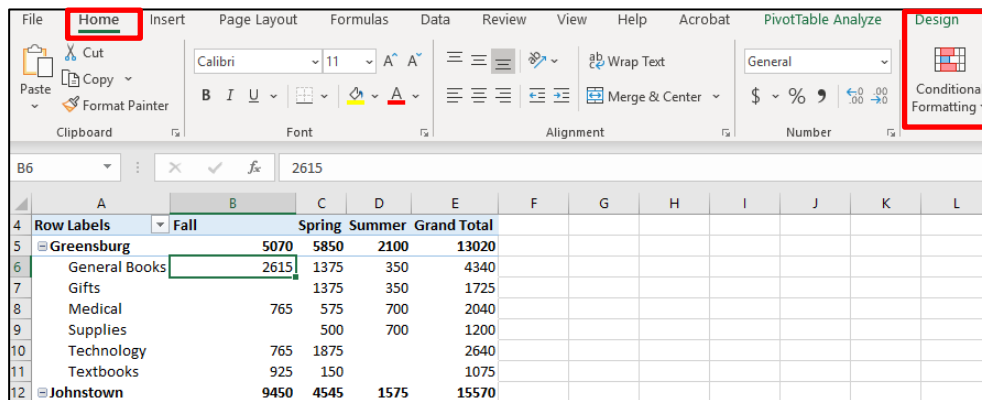

Sum of Sales	Column Labels			
Row Labels	Fall	Spring	Summer	Grand Total
⊟ Greensburg	$5,070.00	$5,850.00	$2,100.00	$13,020.00
General Books	$2,615.00	$1,375.00	$350.00	$4,340.00
Gifts		$1,375.00	$350.00	$1,725.00
Medical	$765.00	$575.00	$700.00	$2,040.00
Supplies		$500.00	$700.00	$1,200.00
Technology	$765.00	$1,875.00		$2,640.00
Textbooks	$925.00	$150.00		$1,075.00
⊟ Johnstown	$9,450.00	$4,545.00	$1,575.00	$15,570.00
Clothing	$400.00			$400.00
General Books	$4,650.00	$2,480.00	$525.00	$7,655.00
Gifts	$4,000.00	$550.00		$4,550.00
Technology	$400.00	$965.00	$125.00	$1,490.00
Textbooks		$550.00	$925.00	$1,475.00

XIII. Conditional Formatting

A.   Highlight top or bottom values

Conditional Formatting allows you to highlight the top, bottom, or average values in the body of your PivotTable.
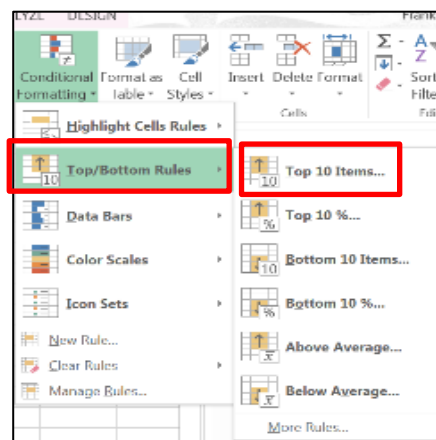
1. This exercise will illustrate how to highlight the top four values in the body of your PivotTable.


2. Select any cell with a value in the body of your PivotTable other than a Subtotals or Grand Totals.

3. On the **Home** ribbon, click on the **Conditional Formatting** button located in the **Styles** group.

4. The **Conditional Formatting** menu options will appear.

5. Select the **Top/Bottom Rules** option, and then click on the **Top 10 Items** options. (You have the option of selecting the top, bottom, average, or percentage items.)
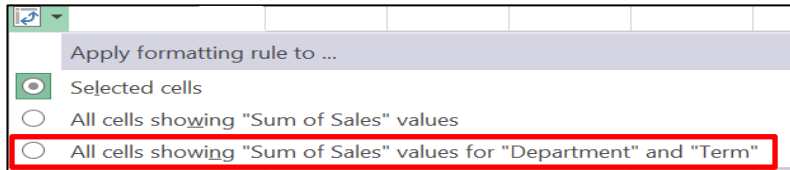
6. The **Top 10 Items** window will appear.
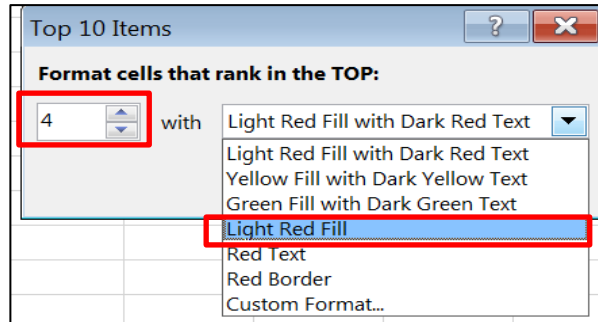
7. In the **Format cells that rank in the TOP** box, click on the drop-down arrow until you get to the number **4**. (You can also select a range from 1 to 10.)

8. In the **with** box, select **Light Red Fill**. (You can select your desired color for the text and highlight.)

9. The formatting is only applied to your cell selection.

10. Click on the **Formatting** option button that appears next to the highlighted cell.

11. The **Apply formatting rule to** menu options will appear.

Apply formatting rule to ...					
⊙ Selected cells					
○ All cells showing "Sum of Sales" values					
○ All cells showing "Sum of Sales" values for "Department" and "Term"					

12. Select the **All cells showing "Sum of Sales" values for "Department" and Term"** option.

> Note: **Selected cells** will apply formatting only to your cell section. **All cells showing "Sum of Sales" values** will include values with Totals in your cell selections. **All cells showing "Sum of Sales" values for "Department" and Term"** will omit values with Totals from your cell selections.

13. Your selected **Conditional Formatting** highlights the scope of your top 4 sales.

⊟ **Johnstown**	**9450**	**4545**	**1575**	**15570**
Clothing	400			400
General Books	4650	2480	525	7655
Gifts	4000	550		4550
Technology	400	965	125	1490
Textbooks		550	925	1475
⊟ **Pittsburgh**	**13005**	**13300**	**11720**	**38025**
Clothing	250	3960	1265	5475
General Books	3225	235	825	4285
Gifts	980	5355	2040	8375
Medical	380	1310	600	2290
Supplies	4885	985	425	6295
Technology	530	235	2180	2945
Textbooks	2755	1220	4385	8360

14. To apply **Conditional Formatting** highlight to the bottom or average values, follow the instructions in this section and select the appropriate option in **step 5**.
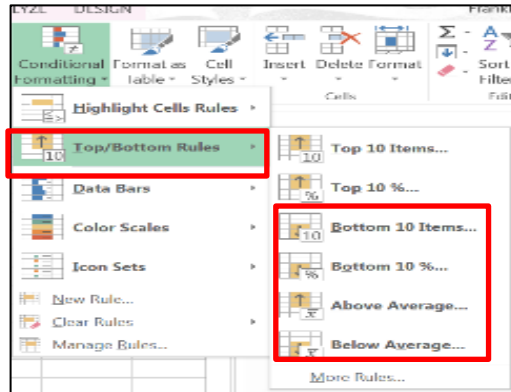
Note: To remove Conditional Formatting, hold down the **Ctrl / Z** keys.

B.   Apply Cell Rules

Conditional Formatting applies specific rule conditions to your cell values. For example, identify sales that are less than or greater than to a determined value.
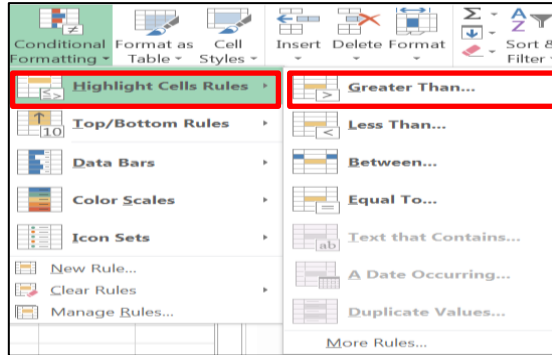
1. This exercise will illustrate how to find values in your PivotTable **greater than 1100**.
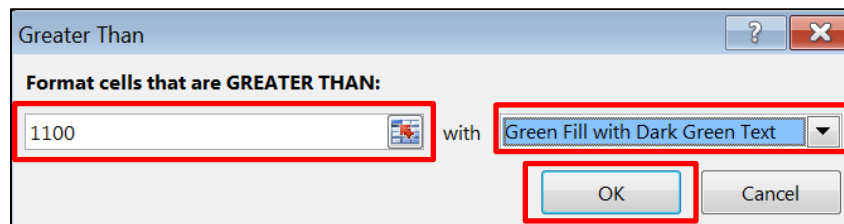

2. Click in any cell with a value in the body of your PivotTable other than Subtotals or Grand Totals.

3. On the **Home** ribbon, click on the **Conditional Formatting** button, located in the **Styles** group.

4. Select the **Highlight Cells Rules** on the menu options.

5. Click on the **Greater Than** from the options panel.

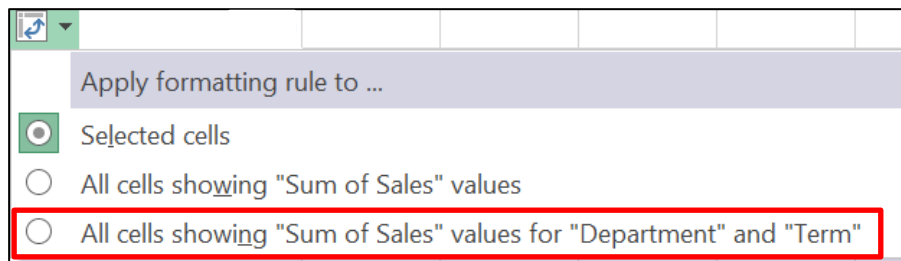6. The **Greater Than** window will appear.

7. In the **Format cells that are GREATER THAN** box, type **1100**.

8. Click on the **drop-down arrow** in the **with** box, and then select the **Green Fill with Dark Green Text** option (select your desired option).

19. Click on the **OK** button.

20. The **Conditional Formatting** will appear on the cell section in the body of your PivotTable.

Sum of Sales	Column Labels ▼			
Row Labels ▼	Fall	Spring	Summer	Grand Total
⊟ **Greensburg**	**5070**	**5850**	**2100**	**13020**
General Books	2615	1375	350	4340
Gifts		1375	350	1725
Medical	765	575	700	2040
Supplies		500	700	1200
Technology	765	1875		2640
Textbooks	925	150		1075
⊟ **Johnstown**	**9450**	**4545**	**1575**	**15570**
Clothing	400			400
General Books	4650	2480	525	7655
Gifts	4000	550		4550
Technology	400	965	125	1490
Textbooks		550	925	1475

21. Click on the **Formatting** options button that appears next to the highlighted values cell.

22. The **Apply formatting rule to** menu options will appear.

Apply formatting rule to ...
- ⦿ Selected cells
- ○ All cells showing "Sum of Sales" values
- ○ All cells showing "Sum of Sales" values for "Department" and "Term"

23. Select the **All cells showing "Sum of Sales" values for "Department" and Term"** option.

> **Note: Selected cells** will apply formatting only to your cell section. **All cells showing "Sum of Sales" values** will include values with Totals in your cell selections. **All cells showing "Sum of Sales" values for "Department" and Term"** will omit values with Totals from your cell selections.

24. Your selected **Conditional Formatting** highlights all department sales greater than **1100**.

.

Sum of Sales	Column Labels			
Row Labels	Fall	Spring	Summer	Grand Total
⊟Greensburg	5070	5850	2100	13020
General Books	2615	1375	350	4340
Gifts		1375	350	1725
Medical	765	575	700	2040
Supplies		500	700	1200
Technology	765	1875		2640
Textbooks	925	150		1075
⊟Johnstown	9450	4545	1575	15570
Clothing	400			400
General Books	4650	2480	525	7655
Gifts	4000	550		4550
Technology	400	965	125	1490
Textbooks		550	925	1475

Note: To remove Conditional Formatting, hold down the **Ctrl / Z** keys.

C.   Data Bars

Conditional Formatting also makes it easier for you to compare the ratio among the data on your PivotTable by adding data bars next to the values.

1. This exercise will illustrate how to apply **Data Bars** to your PivotTable values.
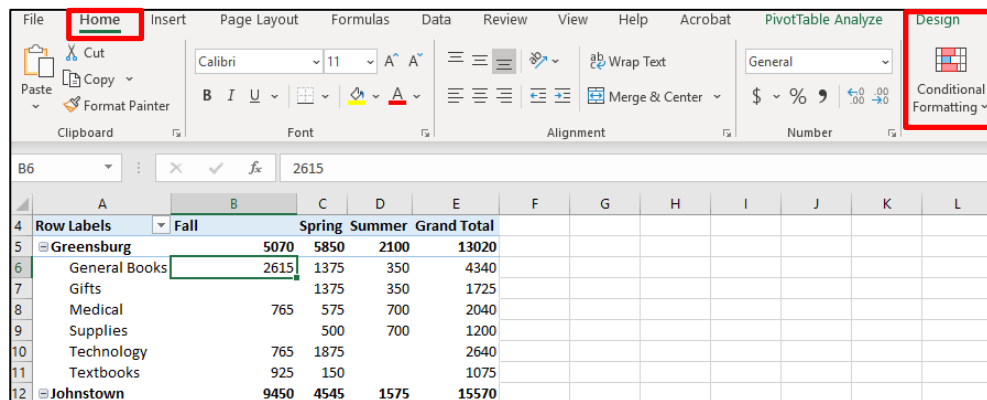
2. Click in any cell containing a value in the body of the PivotTable other than Subtotals or Grand Totals.
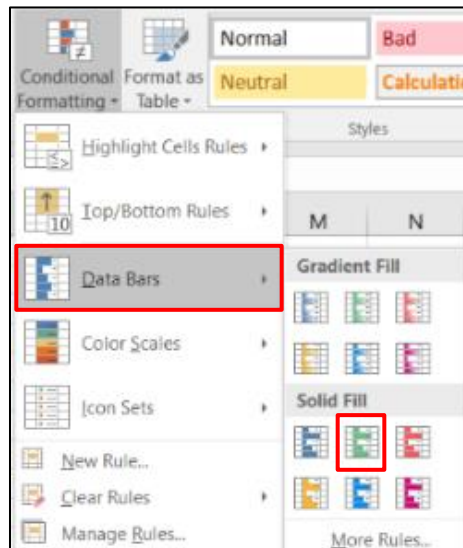
3. On the **Home** ribbon, click on the **Conditional Formatting** button located in the **Styles** group.

4. Select the **Data Bars** on the menu options.

5. Select on the **Solid Fill** from the options panel.

> **Note**: **Do not** use the **Gradient Fill** options, because data bars fade out and will not be easy to interpret.

6. The **Formatting** option button will appears next to the cell section in the body of your PivotTable.

7. Click on the **Formatting** options button.

8. The Conditional Formatting **Data Bars** will appear next to each number according to its amount ratio.

Note: The first column on a PivotTable is wider than the consecutive columns. When Data Bars are applied, the bars in the first column are not be proportional with the other column Data Bars and gives a false ratio comparison.

9. The following steps will illustrate how to make your first column the same width as the other PivotTable columns.
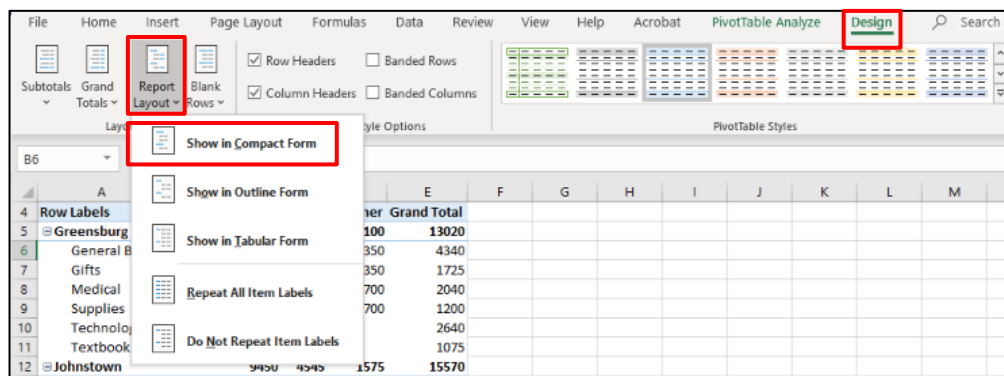
10. Click on the **Design** ribbon tab, and then click on the **Report Layout** button.

11. Select the **Show in Outline Form** option.

12. The first column will readjust to the same width as the other PivotTable columns. Now the first column Data Bars have the appropriate ratio.

Sum of Sales		Term			
Campus	Department	Fall	Spring	Summer	Grand Total
⊟Greensburg		5070	5850	2100	13020
	General Books	2615	1375	350	4340
	Gifts		1375	350	1725
	Medical	765	575	700	2040
	Supplies		500	700	1200
	Technology	765	1875		2640
	Textbooks	925	150		1075
⊟Johnstown		9450	4545	1575	15570

Note: To remove Conditional Formatting, hold down the **Ctrl / Z** keys.

XIV. Create PivotTable Macros

You can save the configuration of a PivotTable that you like for future use by creating a Macro. The Macro will record the steps it took to construct your desired PivotTable. Your recorded Macro will automatically run the steps to create your desired PivotTable.

A.   Recording a Macro

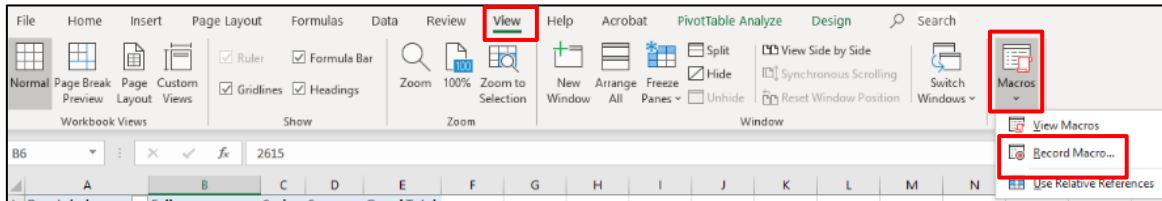1. In this exercise, you will pivot your data as shown below, and then create a Macro that contains the same PivotTable body configuration.

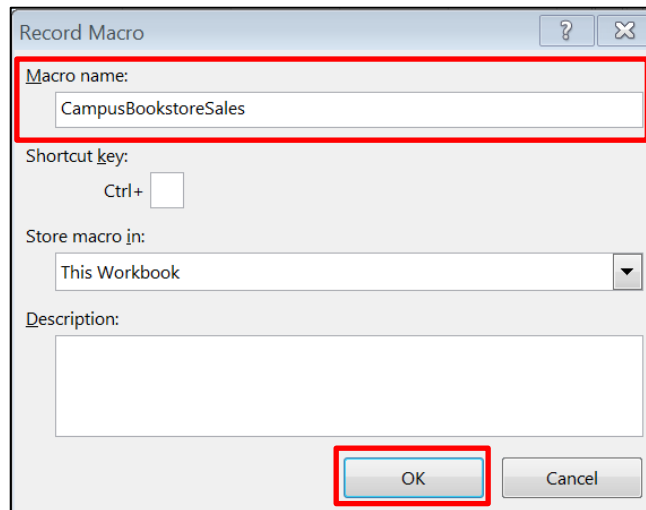2. In the **PivotTable Fields** area, deselect the **Department** field.

3. To create your PivotTable **Marco**, click on the **VIEW** ribbon tab.

4. Click on the **Macros** button.

5. Select the **Record Macro** option.

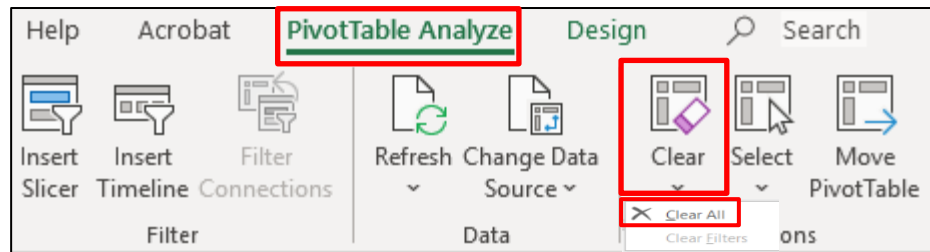6. The **Record Macro** window will appear.

7. In the **Macro name** box, type your desired Macro name with no spaces (**CampusBookstoreSales**).

8. Click on the **OK** button.

9. At this point, you are ready to record your PivotTable by first clearing the current fields, and then reconstruct them.
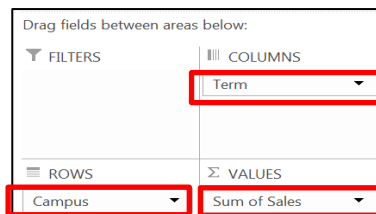
10. Click inside any data cell in your PivotTable.

11. Click on the **PivotTable Analyze** tab.

12. In the **Action** group click on the **Clear** button, and then select the **Clear All** option.

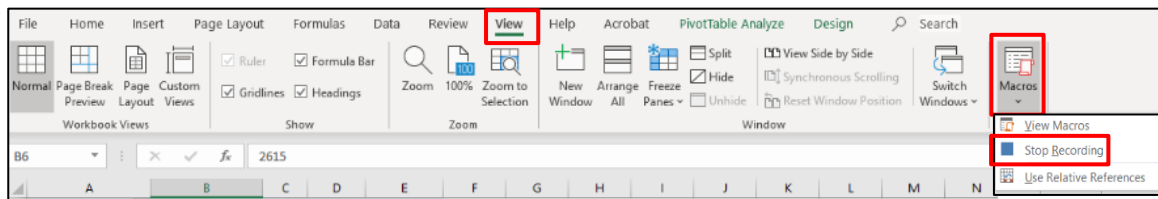13. Now that the PivotTable is clear, you can reconstruct your PivotTable from scratch.

14. Drag and drop the **Campus** field in the **ROWS** area.

15. Drag and drop the **Sales** field in the **VALUES** area.

16. Drag and drop the **Campus** field in the **ROWS** area.

17. Now that you have reconstructed your PivotTable, stop recording your Macro.
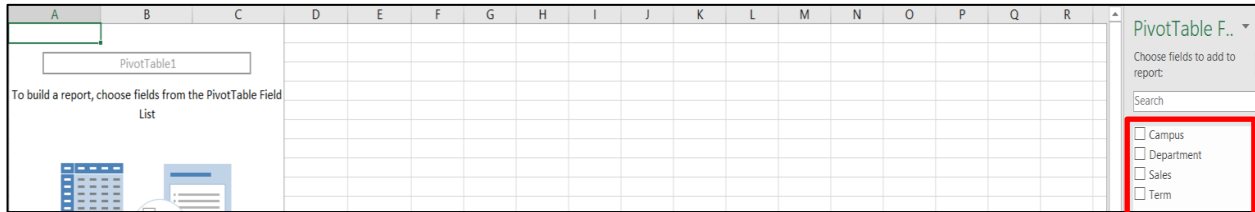

18. Select the **VIEW** ribbon tab.

19. Click on the **Macros** button, and then select the **Stop Recording** option.
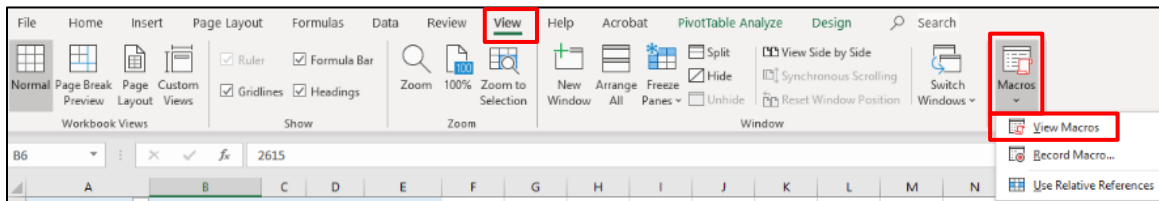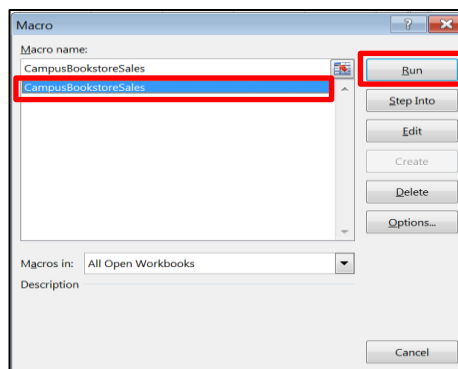
B.   Running a Macro

1. To run your **Macro**, clear your PivotTable as below.

2. Deselect your **PivotTable** fields.

3. Select the **VIEW** ribbon tab.

4. Click on the **Macros** button.

5. Select the **View Macros** option.

6. The **Macro** window will appear.

7. Select your desired **Macro name (CampusBookstoreSales)**.

8. Click on the **Run** button.

9. The **PivotTable** configuration associated with your **Macro** selection will appear.


C.   Quick Access Macros

When running a **Macro** multiple times, you can create a **Quick Access Macro** to decrease the amount of steps to run your Macro by attaching a **Macro** button on the **Quick Access Toolbar**.

1. Once a Macro have been created, you can add a **Macro** button to the **Quick Access Toolbar**.
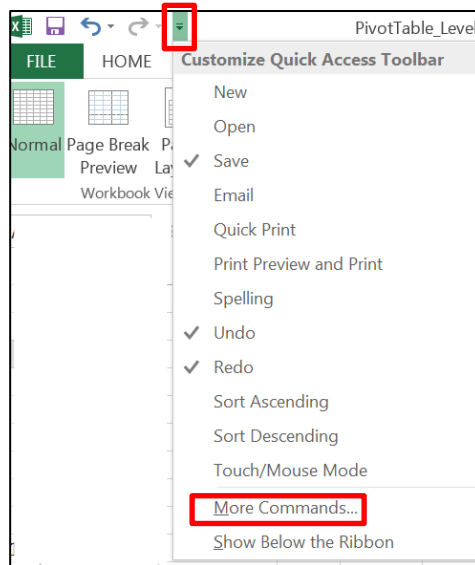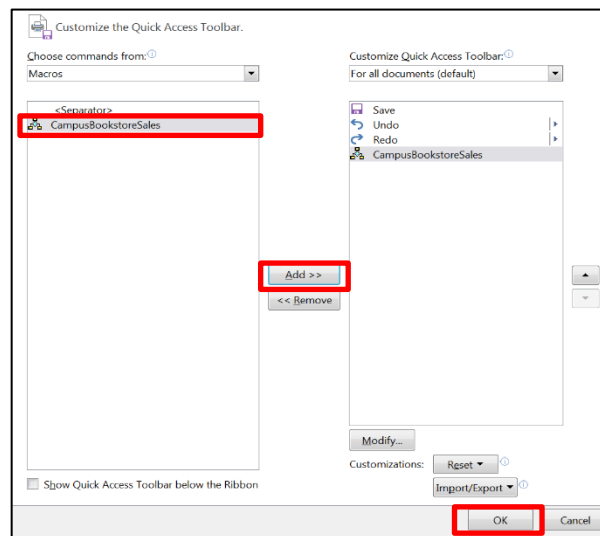

2. Click on the **Quick Access Toolbar** drop-down arrow.

3. Select the **More Commands** option.

4. The **Excel Options** window will appear.
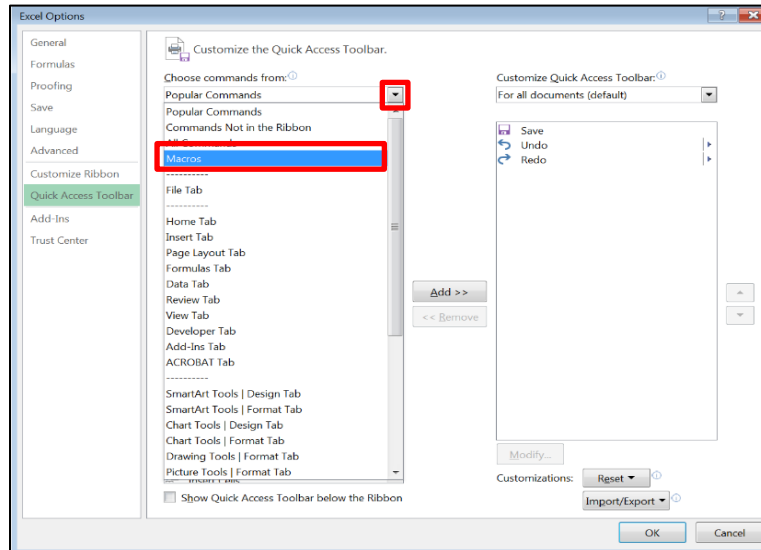
5. On the **Choose command from** options panel, click on the **drop-down arrow**.

6. Select the **Macros** option.

7. All Macros that you have created will appear in the **Separator** window.

8. Select your desired **Macro** (CampusBookstoreSales).
9. Click on the **Add** button.

10. Your **Macro** selection will appear in the **Customize Quick Access Toolbar** options panel on the left-side.

11. Click on the **OK** button.

12. The **Macro Icon** will appear on the **Quick Access Toolbar**.

13. Click on the **Macro Icon** to run your Macro.

Note: If you create more than one **Quick Access Macro**, you have the option of selecting multiple icons styles that will represent your different Macros.
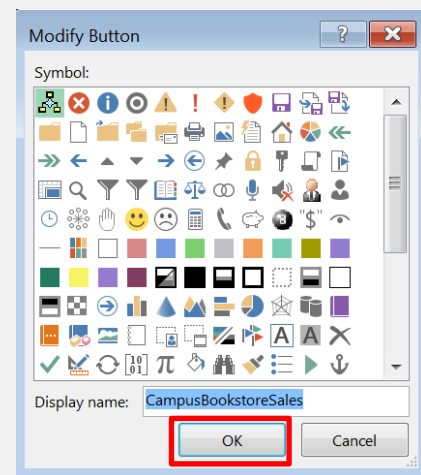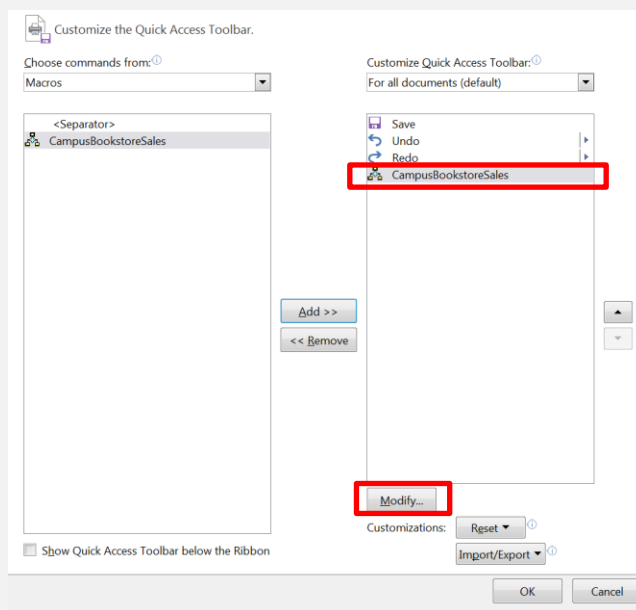
1. Once your **Macro name** is added to the **Customize Quick Access Toolbar** option panel, select your **Macro name**.
2. Click on the **Modify** button.
3. The **Modify Button** window will appear.
4. Select your desired **Symbol**.
5. Click on the **OK** button, and then your **Macro Icon** will change to your selected symbol in **the Customize Quick Access Toolbar** option panel.
6. Click on the **OK** button, and then your **Macro Icon** symbol will appear on the **Quick Access Toolbar**.

XV. Practice

The earlier exercises produced a **PivotTable** and **PivotChart** that represented the **Total sales** during **Terms** by each **Salesperson**. With the added **Slicer**, you were then able to view desired Salesperson's totals. You were also able to view desired **Branch** campuses by using the **Column Labels Filter**.
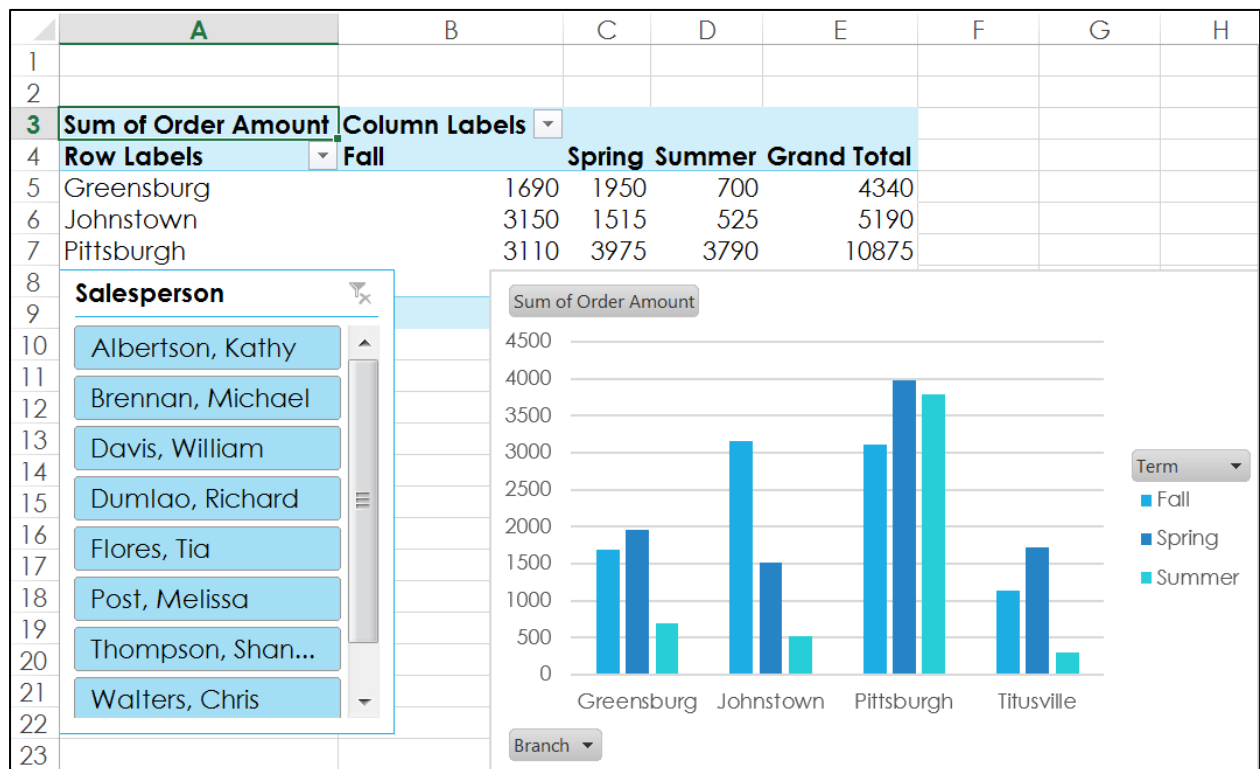
1. Create a **PivotTable** using the existing practice worksheet (Excel2016_Pivot_Practice.xlsx).

2. Use the **PivotTable** to answer the question: **Which salesperson sold the lowest amount during the Fall, Spring, and Summer Term?** Hint: First decide which **fields** you need to answer the question.

3. Experiment by placing different fields in the **rows** and **columns** sections.

4. Add a Slicer and filter the report with the **Slicer**.

5. Create a **PivotChart**.