



University Information
Technology Services

Microsoft Office

Excel 2016 for Windows

PivotTables & PivotCharts

University Information Technology Services

Learning Technologies, Training & Audiovisual Outreach

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University Information Technology Services

Microsoft Office: Excel 2016 for Windows

PivotTables & PivotCharts

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Introduction

This booklet is the companion document to the Excel 2016: PivotTables and Pivot Charts workshop. The booklet will explain PivotTables and Pivot Charts, how to create them, and how to use them to quickly analyze large quantities of data.

Learning Objectives

After completing the instructions in this booklet, you will be able to:

- Define PivotTables and Pivot Charts
- Insert PivotTables
- Insert Pivot Charts
- Filter information in your PivotTable and Pivot Chart
- Use Slicers

PivotTables

PivotTables are a powerful tool in Excel that will allow you to quickly summarize, sort, filter, and analyze data. They can handle large amounts of data in lists and tables by organizing data, on the fly, by different rows and columns. This is faster, and more flexible for analyzing your data, as you don't need to rely on formulas.

For example, you could have a spreadsheet that contains information on salespeople, products sold, regions, items sold, etc. Using a PivotTable, you can quickly organize the data so different relationships are visible (e.g. Who is the top salesperson? What product has sold the most?).

Salesperson	Product	Region	Customer	Date	Item Cost	No.Items	Total Cost
Vaughn, Harlon	Captain Recliner	NE	B&B Spaces	01/03/11	\$ 340.95	9	\$ 3,068.55
Norman, Rita	Media Armoire	SE	Home USA	01/03/11	\$ 340.95	2	\$ 681.90
Christensen, Jill	Bamboo End Table	NW	Ellington Designs	01/04/11	\$ 79.99	7	\$ 559.93
Norman, Rita	Bamboo Coffee Table	SE	Ellington Designs	01/05/11	\$ 168.95	3	\$ 506.85
Byrd, Asa	Bamboo End Table	SE	B&B Spaces	01/05/11	\$ 79.99	12	\$ 959.88
Owen, Robert	Chameleon Couch	SW	Ellington Designs	01/07/11	\$ 799.95	13	\$ 10,399.35
Maynard, Susan	Bamboo End Table	NE	Home USA	01/08/11	\$ 79.99	10	\$ 799.90
Norman, Rita	Chameleon Couch	SE	Home USA	01/08/11	\$ 799.95	2	\$ 1,599.90
Norman, Rita	Media Armoire	SE	Home USA	01/08/11	\$ 340.95	6	\$ 2,045.70
Norman, Rita	Media Armoire	SE	B&B Spaces	01/11/11	\$ 340.95	13	\$ 4,432.35

Figure 1 - Sample Sales Spreadsheet

Note: When working with PivotTables, the data should contain your titles in a single row, and the table should not contain any empty cells.

Creating PivotTables

The following will show you how to create a PivotTable using the sample sales spreadsheet as an example:

1. In the *Ribbon*, Click the **Insert** tab.

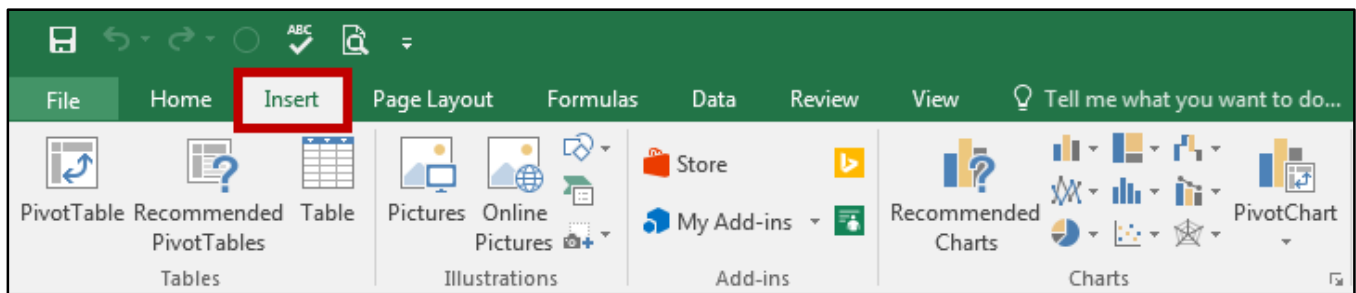


Figure 2 - Insert Tab

2. Under the *Tables* grouping, Click **PivotTable**.



Figure 3 - PivotTable

3. The *Create PivotTable* window will appear. Excel will automatically select the data it thinks you want to use to create your *PivotTable*.

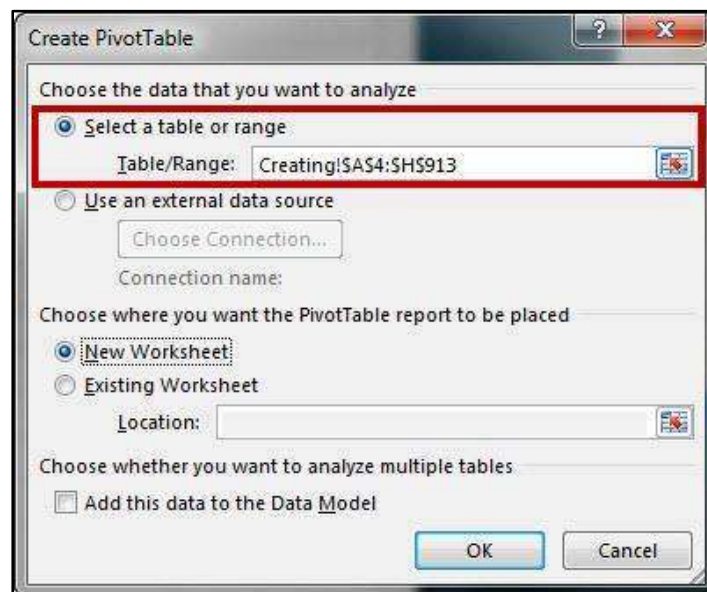


Figure 4 - Create PivotTable Window

Note: To select a different range from what Excel has suggested, Click the **cell selection** box and use the mouse to select a new range.

4. Under *Choose where you want the PivotTable report to be placed*, select **New Worksheet**.



Figure 5 - Create PivotTable on a New Worksheet

5. Click **OK**.

6. The *PivotTable* will be created in a new worksheet.

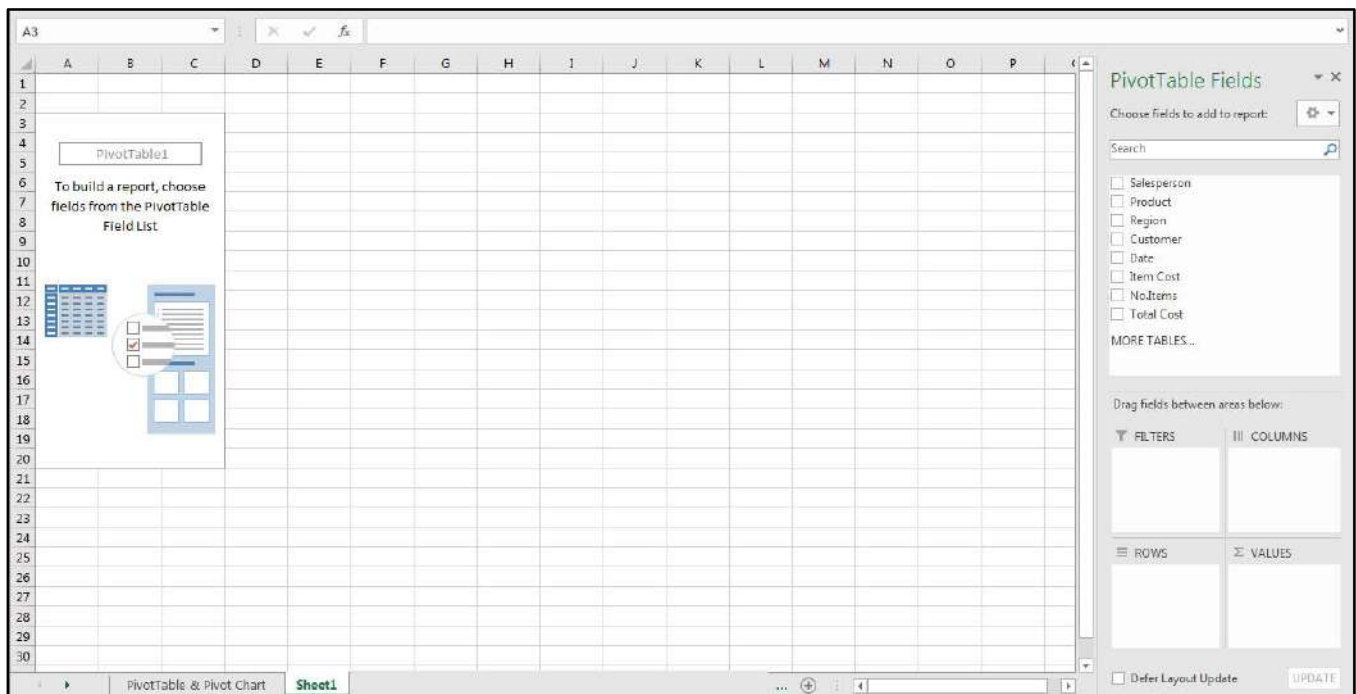


Figure 6 - New PivotTable Worksheet

7. The *PivotTable Fields* will appear on the right side of the screen.

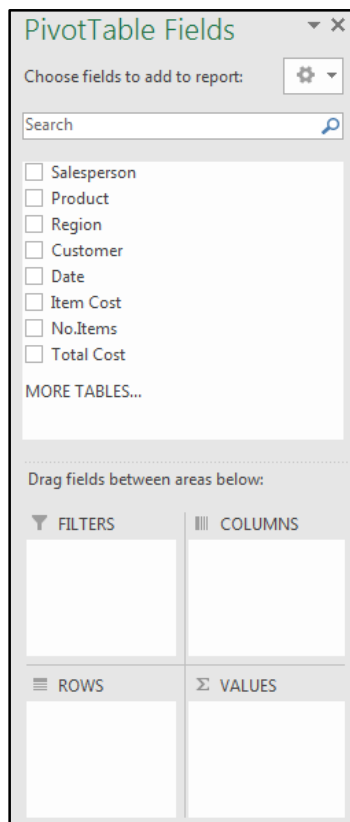


Figure 7 - PivotTable Fields

Analyzing Data with PivotTables

After creating your PivotTable, the *PivotTable Fields* list will display the data ranges that you selected, and four areas that will make up your PivotTable (Filters, Columns, Rows, and Values). You can quickly move fields in and out of these areas to view your data in different ways.

For example, we want to use the PivotTable to analyze the data and determine how many sales a salesperson has made of each product.

1. Drag-and-drop your **fields** into the *filter, column, rows, and values* boxes.
 - a. **Filters** area fields are shown as top-level report filters above the *PivotTable* (See **Error! Reference source not found.**).
 - b. **Columns** area fields are shown as *Column Labels* at the top of the *PivotTable* (See **Error! Reference source not found.**).
 - c. **Rows** area fields are shown as *Row Labels* on the left side of the *PivotTable* (See **Error! Reference source not found.**).
 - d. **Values** area fields are shown as summarized numeric values in the *PivotTable* (See **Error! Reference source not found.**).

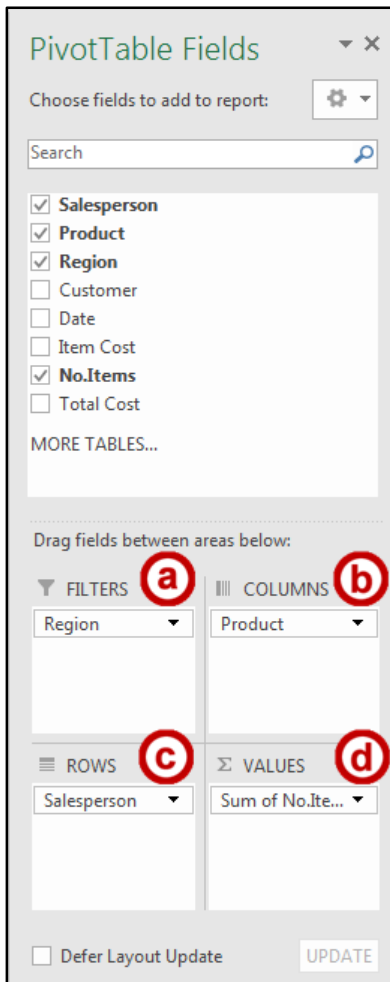


Figure 8 - Select PivotTable Fields

- The PivotTable will change to show the fields in their respective locations, showing total sales for each sales person by product.

Region	(All)					
Sum of No. Items	Column Labels					
Row Labels	Bamboo Coffee Table	Bamboo End Table	Captain Recliner	Chameleon Couch	Media Armoire	Grand Total
Arnold, Cole	154	104	138	121	91	608
Byrd, Asa	150	69	155	101	110	585
Christensen, Jill	209	118	151	117	183	778
Kelly, Icelita	19	150	90	174	166	599
Leon, Emily	154	124	80	105	169	632
Livingston, Lynette	79	122	74	107	142	524
Lucas, John	77	130	75	172	62	516
Maynard, Susan	147	145	125	116	212	745
McCullough, Scott	93	62	72	90	121	438
Norman, Rita	134	145	79	128	172	658
Owen, Robert	157	120	150	249	170	846
Vaughn, Harlon	239	199	214	199	217	1068
Grand Total	1612	1488	1403	1679	1815	7997

Figure 9 - PivotTable Results

Filtering the PivotTable

The following shows how to filter information within a *PivotTable*:

- Next to a *Field Header*, click the **drop-down** arrow.

Region	(All)			
Sum of No. Items	Column Labels			
Row Labels	Bamboo Coffee Table	Bamboo End Table	Captain Recliner	Chameleon Couch
Arnold, Cole	154	104	138	121
Byrd, Asa	150	69	155	101
Grand Total	304	173	293	222

Figure 10 - Drop-Down Button

2. A *Drop-down* menu will appear with values for the field listed below.

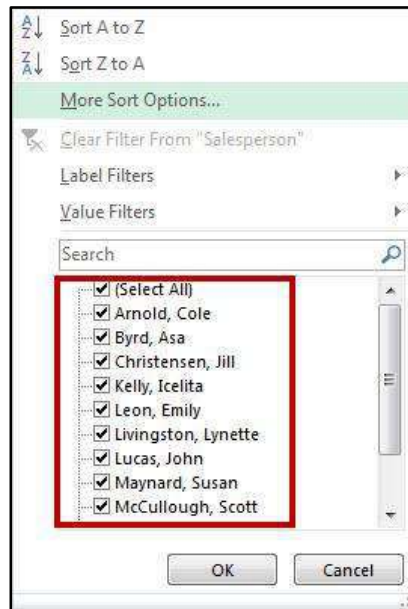


Figure 11 - Filter Values

3. Click the **checkboxes** to select/deselect values that you want to filter for.
4. Click **OK** to apply your filter.
5. A *filter* icon will appear next to the *drop-down* arrow to indicate a filter has been applied to the field.

Region	(All)			
Sum of No. Items	Column Labels			
Row Labels	▼	Bamboo Coffee Table	Bamboo End Table	Captain Recliner
		Chameleon Couch		
Arnold, Cole		154	104	138
Byrd, Asa		150	69	155
Grand Total		304	173	293
				222

Figure 12 - Filter Applied

6. To remove the filter, click the **drop-down** arrow.

7. The *drop-down* menu will appear. Click **Clear Filter From** to remove the filter.

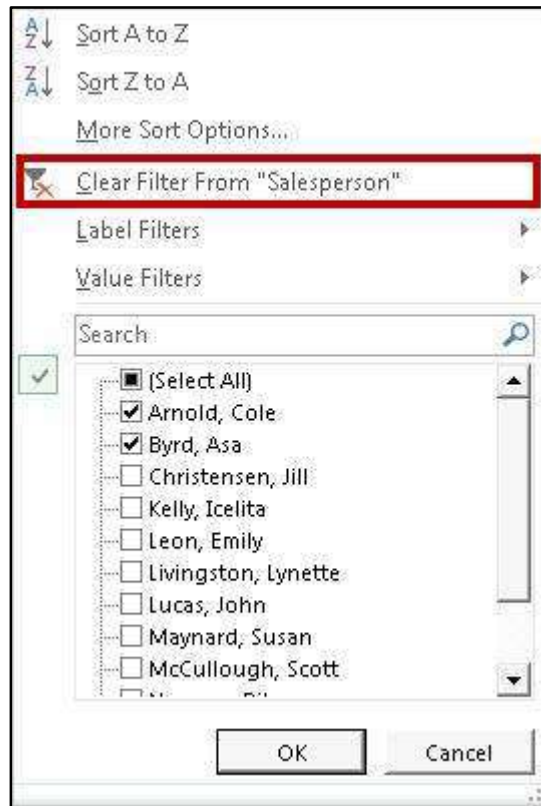


Figure 13 - Clear Filter From

PivotCharts

Similar to *PivotTables*, PivotCharts can be used to quickly summarize, sort, filter, and analyze large amounts of data, and display that data as a visual representation. After creating your PivotTable, you can create a PivotChart using a variety of available charts (e.g. Pie, Line, Bar) that uses the same field settings.

Creating PivotCharts

The following will show you how to create a PivotChart from an existing PivotTable:

1. Highlight the **data** you want to use for your PivotChart.
2. In the *Ribbon*, Click the **Insert** tab.

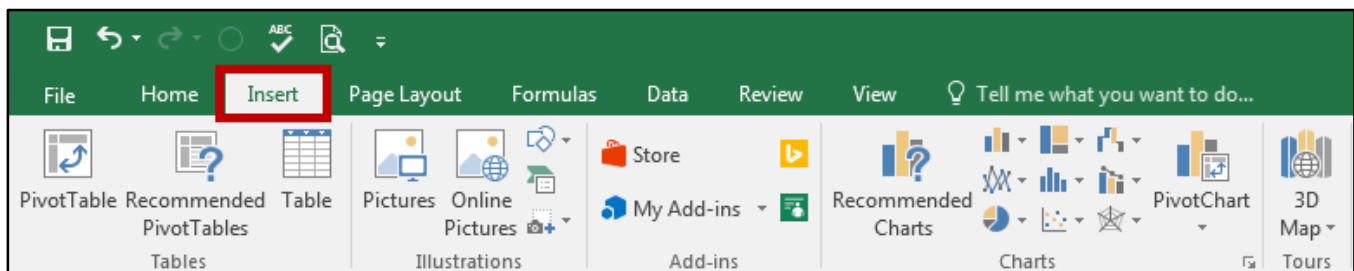


Figure 14 - Insert Tab

- Under the *Charts* grouping, click **PivotChart**.

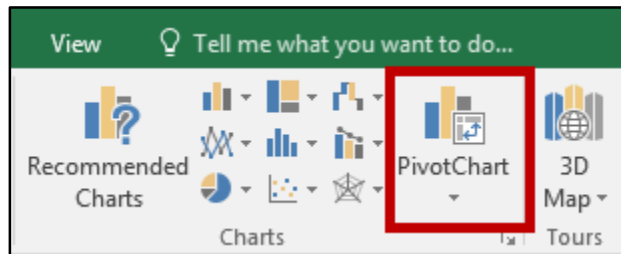


Figure 15 - PivotChart

- The *Create PivotChart* window appears to allow you to change the data range, choose where you want the PivotChart to be placed, and choose whether or not you want to analyze multiple tables. Make your selections and click **OK**. In this example, a new worksheet will be created.

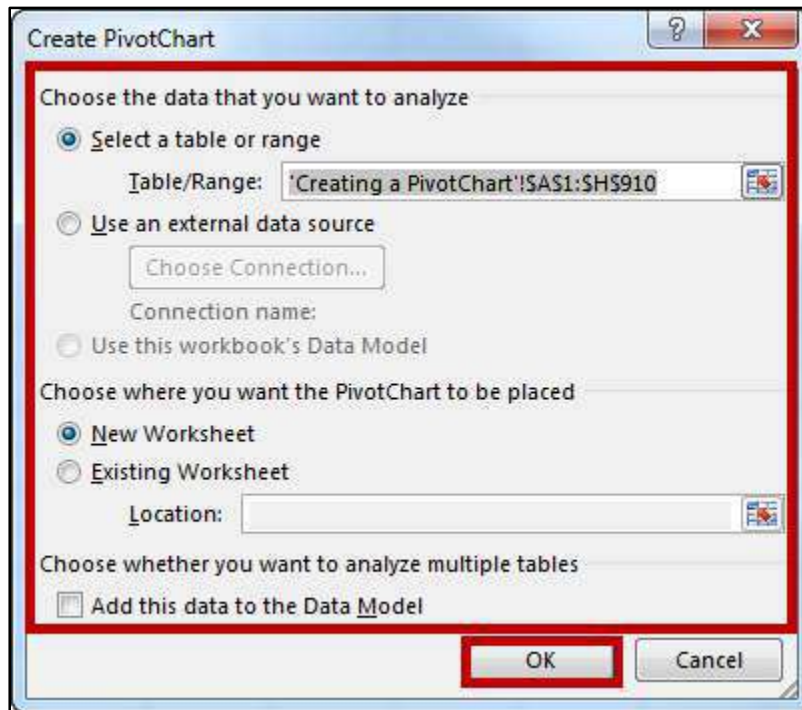


Figure 16 - Create PivotChart Options

5. The *PivotChart* will be placed into your workbook on a new worksheet.

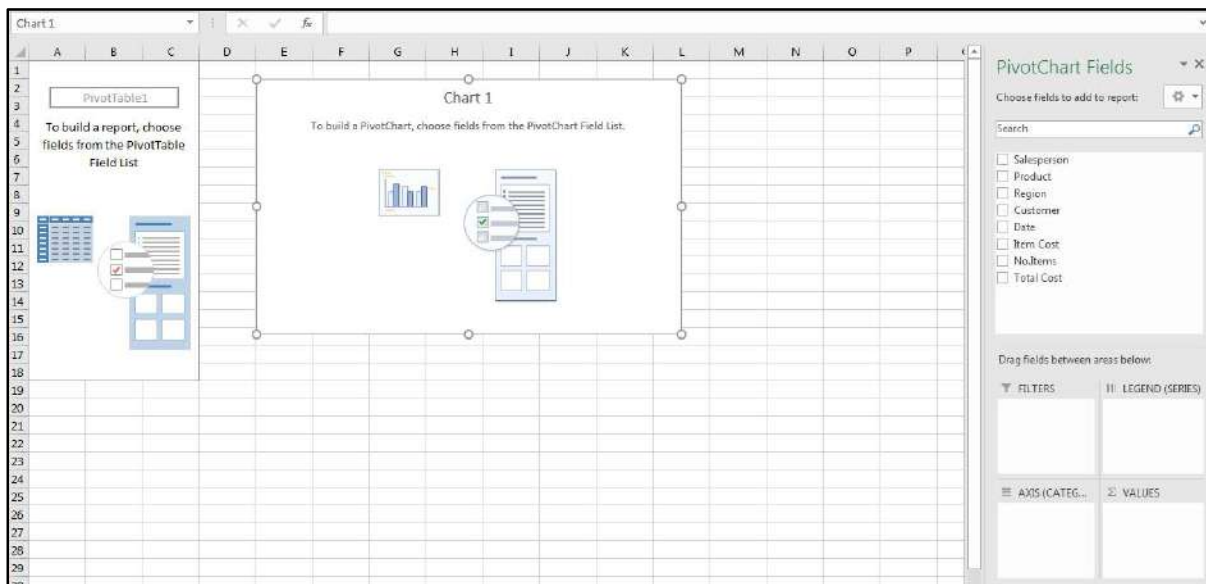


Figure 17 - New PivotChart Worksheet

6. The *PivotChart Fields* will appear on the right side of the screen.

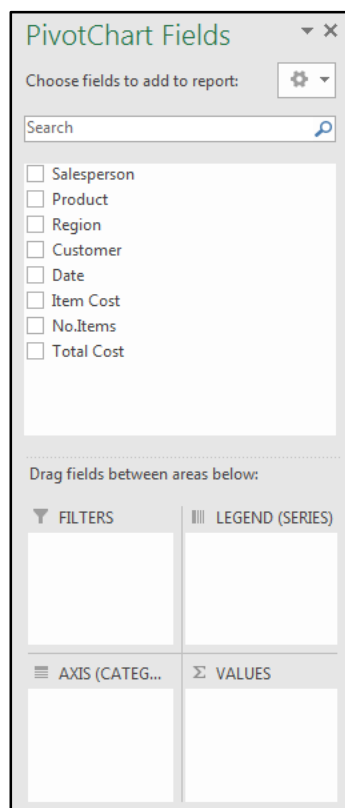


Figure 18 - PivotChart Fields

Note: You can alter the information that is displayed the same way as with PivotTables. See *Analyzing Data with PivotTables* for more information.

- To change the chart type, click the **chart** and click the **Change Chart Type** in the Data grouping on the Design tab.

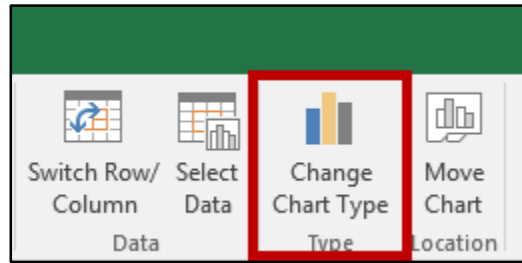


Figure 19 - Change Chart Type

- Click a **Chart Type** (see Figure 20).
- Click the **Chart Style** you want to use (see Figure 20).
- Click **OK** to save the selection (see Figure 20).

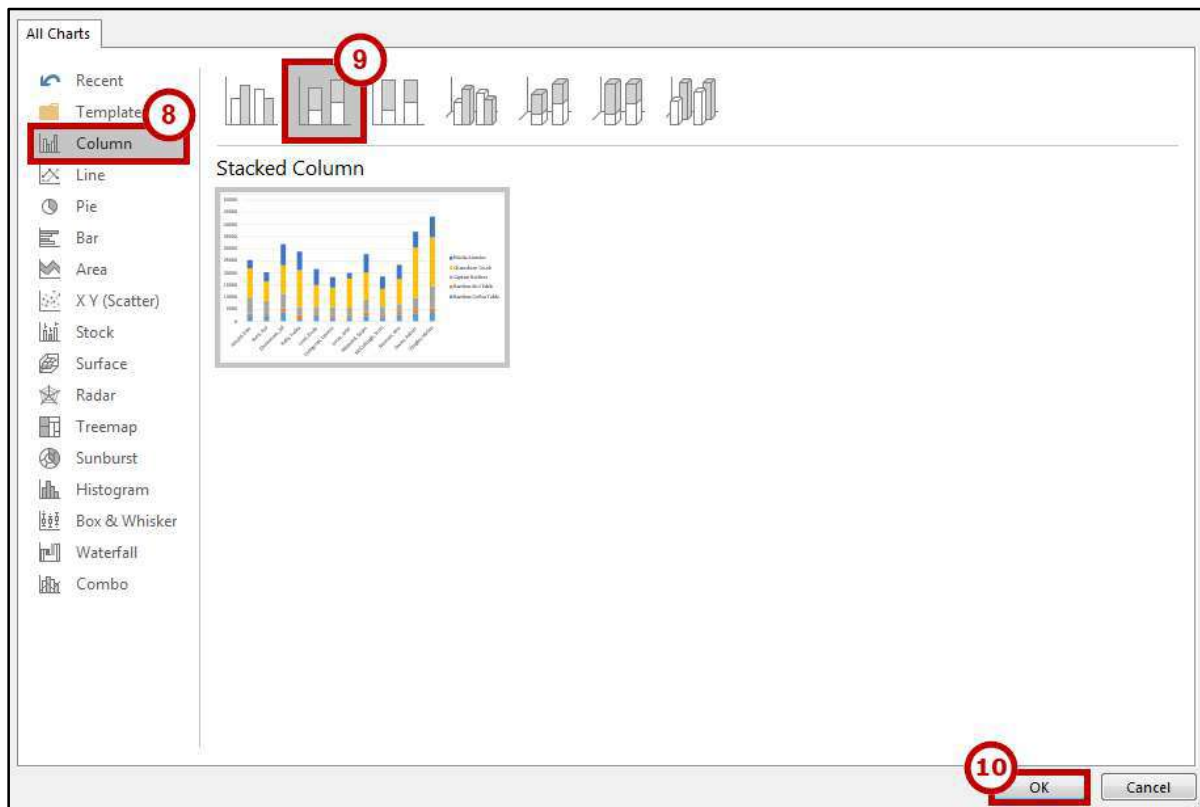


Figure 20 - New Chart Selection

Filtering the PivotChart

The following shows how to filter information within a *PivotChart*:

1. Next to a *Field Header*, click the **drop-down** arrow.

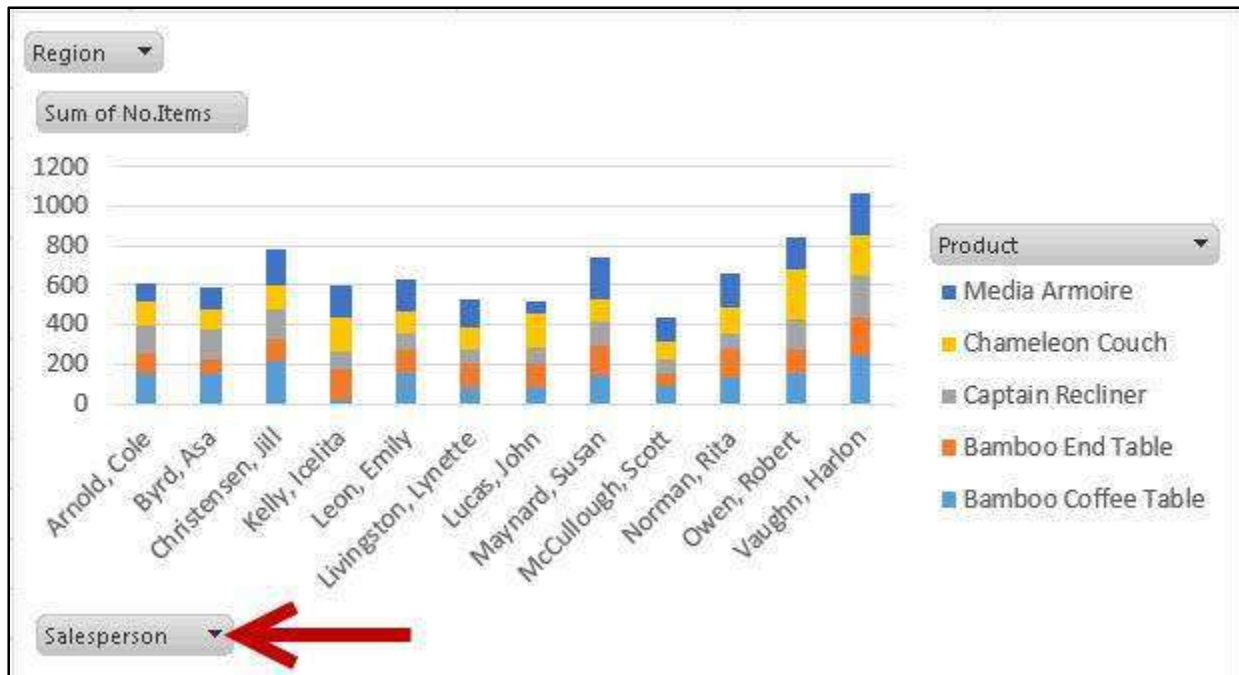


Figure 21 - Drop-Down Button

2. A *Drop-down* menu will appear with values for the field listed below.

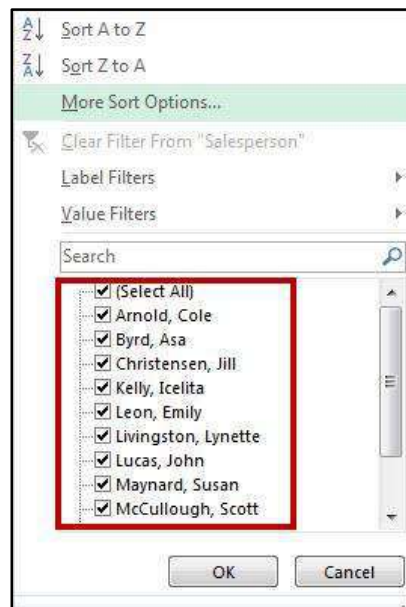


Figure 22 - Filter Values

3. Click the **checkboxes** to select/deselect values that you want to filter for.
4. Click **OK** to apply your filter.

5. A *filter* icon will appear next to the *drop-down* arrow to indicate a filter has been applied to the field.

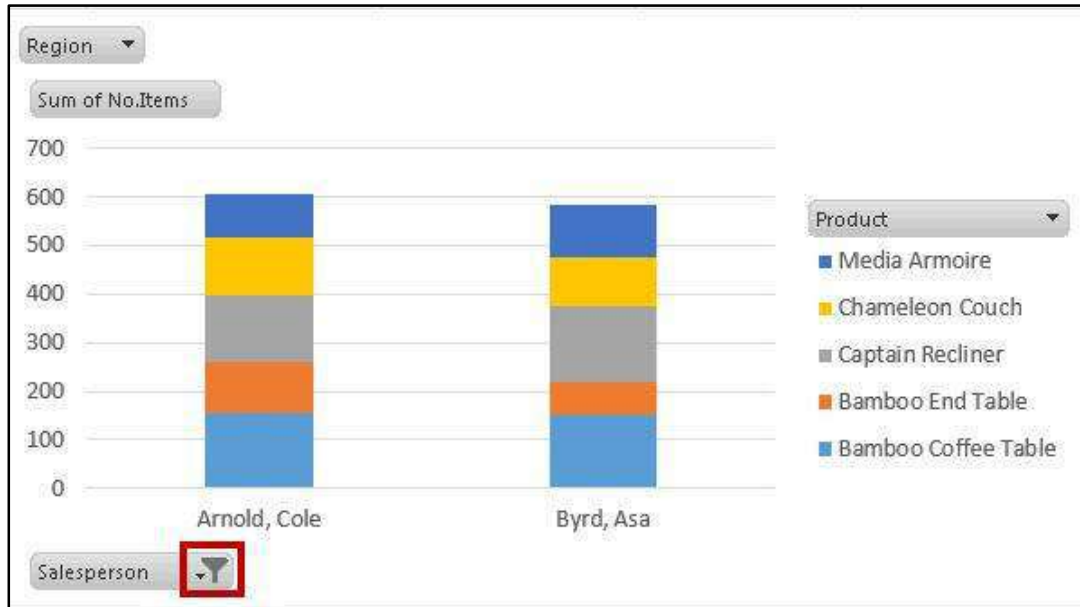


Figure 23 - Filter Applied

6. To remove the filter, Click the **drop-down** arrow.
7. The *drop-down* menu will appear. click **Clear Filter From** to remove the filter.

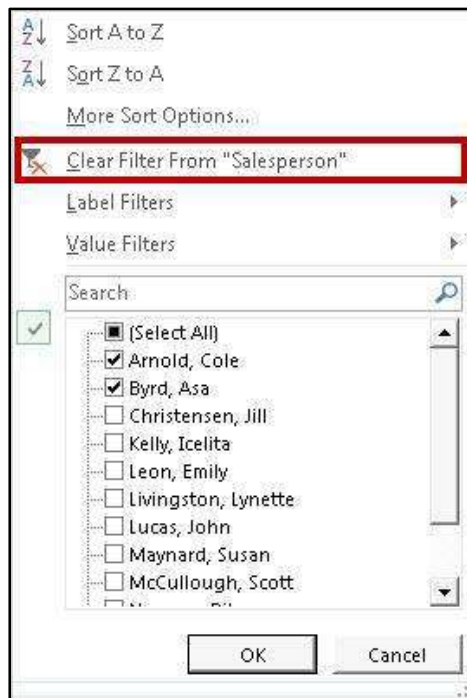


Figure 24 - Clear Filter From

Using Slicers to Filter Data

Slicers can provide greater control over your PivotTable or PivotChart when you are analyzing your data. Slicers work similar to filtering your information, but allows you to insert tables that you can use to quickly select values to filter/unfilter. They will show what is currently shown/not shown at a glance. Slicers can also be adjusted to change their size and color to make them more presentable.

Inserting Slicers into your PivotTable or PivotChart

The following explains how to insert Slicers into your *PivotTable*:

1. Click within your **PivotTable** to select it.
2. In the *Ribbon*, Click the **Insert** tab.

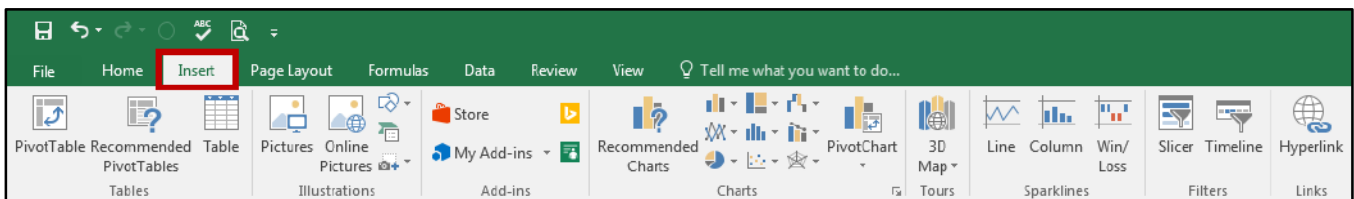


Figure 25 - Insert Tab

3. Under the *Filters* grouping, click **Slicer**.



Figure 26 – Slicer

4. The *Insert Slicers* window will appear with a list of your available fields.

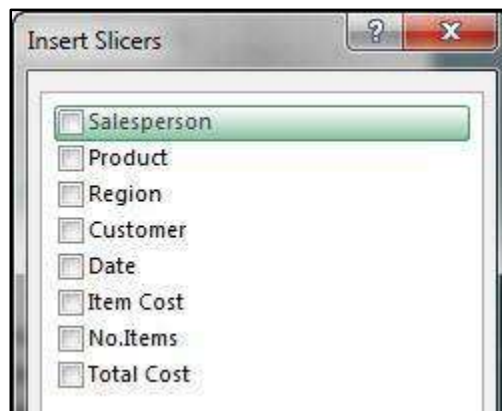


Figure 27 - Insert Slicers Window

5. Click the **checkboxes** next to the field(s) you want to create slicers for.
6. Click **OK**.

7. The **slicers** will be inserted into your spreadsheet.



Figure 28 - Slicers Inserted

- 8. Click and drag the **slicers** to reposition them as necessary.
- 9. To apply a filter from one of the slicers, click one of the **values**.



Figure 29 - Using a Slicer

Note: To select multiple values, hold down the **shift** key while clicking your values.

- 10. To remove values from your slicer, click the **Clear Filter** icon in the upper-right hand corner of the slicer.



Figure 30 - Clear Filter from Slicer

Additional Slicer Options

When a Slicer is selected, the *Slicer Tools – Options* tab will be available in the *Ribbon*. From this tab, you can change the Slicer caption, style, and size of the buttons and window. The following explains how to access the *Slicer Tools – Options* tab:

1. Click the **Slicer**.
2. In the *Ribbon*, click the **Slicer Tools – Options** tab.

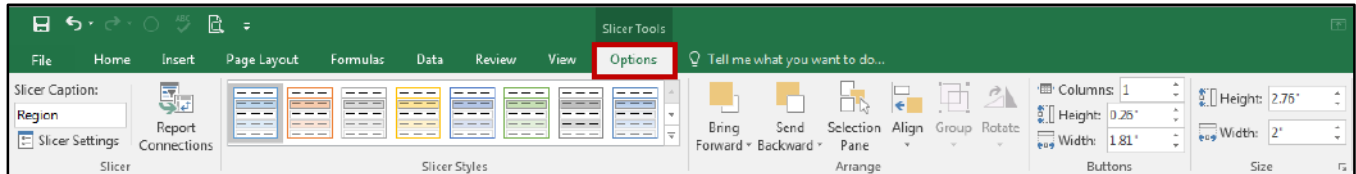


Figure 31 - Slicer Tools - Options Tab

3. Additional Slicer tools will be displayed. From here you can alter the slicer captions, styles, button, and window size.



Figure 32 - Additional Slicer Tools

Additional Help

For additional support, please contact the KSU Service Desk:

KSU Service Desk for Faculty & Staff

- Phone: 470-578-6999
- Email: service@kennesaw.edu
- Website: <http://uits.kennesaw.edu>

KSU Student Helpdesk

- Phone: 470-578-3555
- Email: studenthelpdesk@kennesaw.edu
- Website: <http://uits.kennesaw.edu>