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How To Excel

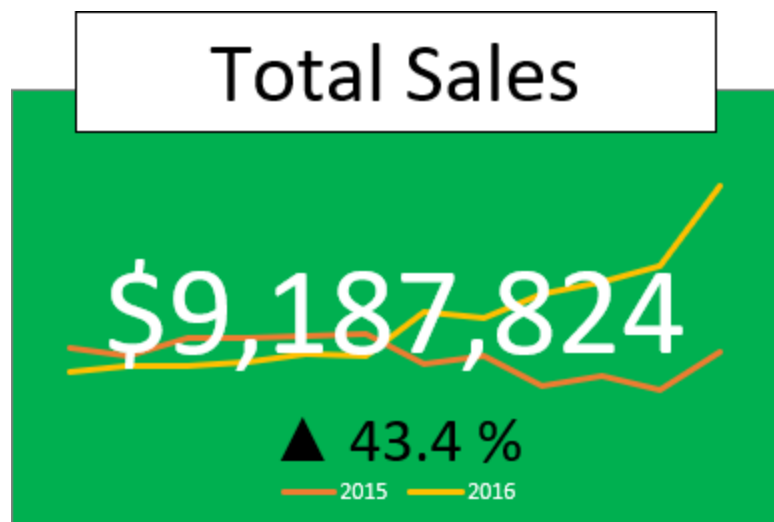
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Create Amazing Key Performance Indicator Data Cards In Excel

Posted by [John](#) | Dec 19, 2018 | [Charts](#), [Pivot Tables](#) | [0](#) |

In this post we're going to learn how to create some super cool key performance indicator (KPI) data cards in Excel.

These are great for drawing attention to a single metric like the total sales in your dashboards.



In this post we're going to get extra fancy and add some little additions to the cards like a percentage change over the previous year and a small line chart in the background.

To build these fancy KPI cards, we are going to pull out pivot tables, pivot charts, GetPivotData, shapes and custom number formatting from our toolbox of Excel tricks.

Table of Contents

Data Setup

OrderDate	ProductName	OrderQuantity	OrderTotal
2017-01-01	Road Tire Tube	2	\$7.98
2017-01-01	Sport-100 Helmet, Red	1	\$34.99
2017-01-01	HL Road Tire	1	\$32.60
2017-01-01	Road Tire Tube	2	\$3.99
2017-01-01	Road-250 Black, 52	1	\$2,181.56
2017-01-01	HL Road Tire	1	\$32.60
2017-01-01	Sport-100 Helmet, Black	1	\$33.64
2017-01-01	Long-Sleeve Logo Jersey, M	1	\$48.07
2017-01-01	Mountain Tire Tube	2	\$4.99
2017-01-01	ML Mountain Tire	2	\$7.98

In this example I'm going to be using the AdventureWorks data set which has order data for a fictitious bike shop.

This data contains the **Order Date** and **Order Total** which we will be using for the data cards.

Pivot Table Setup

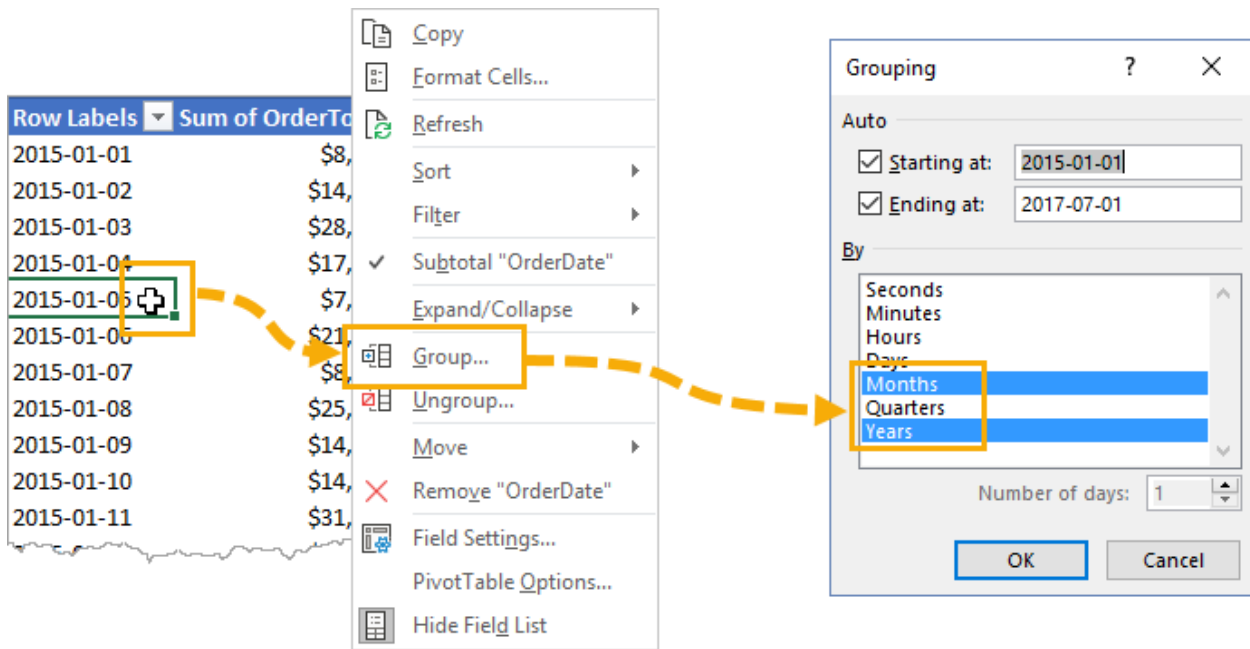
We will then need to create two pivot tables with this order data.

This can be done by selecting a cell inside the order data and going to the **Insert** tab of the ribbon and selecting the **PivotTable** command.

Row Labels	Sum of OrderTotal	Sum of OrderTotal2
2015	\$6,404,934	
Jan	\$585,313	
Feb	\$532,226	
Mar	\$643,436	
Apr	\$653,364	
May	\$659,326	
Jun	\$669,989	
Jul	\$486,115	
Aug	\$536,453	
Sep	\$344,063	
Oct	\$404,277	
Nov	\$326,611	
Dec	\$563,762	
2016	\$9,187,824	43.4%
Jan	\$432,426	-26.1%
Feb	\$474,163	-10.9%
Mar	\$471,962	-26.6%
Apr	\$494,957	-24.2%
May	\$545,535	-17.3%
Jun	\$533,825	-20.3%
Jul	\$809,384	66.5%
Aug	\$779,311	45.3%
Sep	\$928,315	169.8%
Oct	\$1,004,222	148.4%
Nov	\$1,109,128	239.6%
Dec	\$1,604,596	184.6%
Grand Total	\$15,592,758	

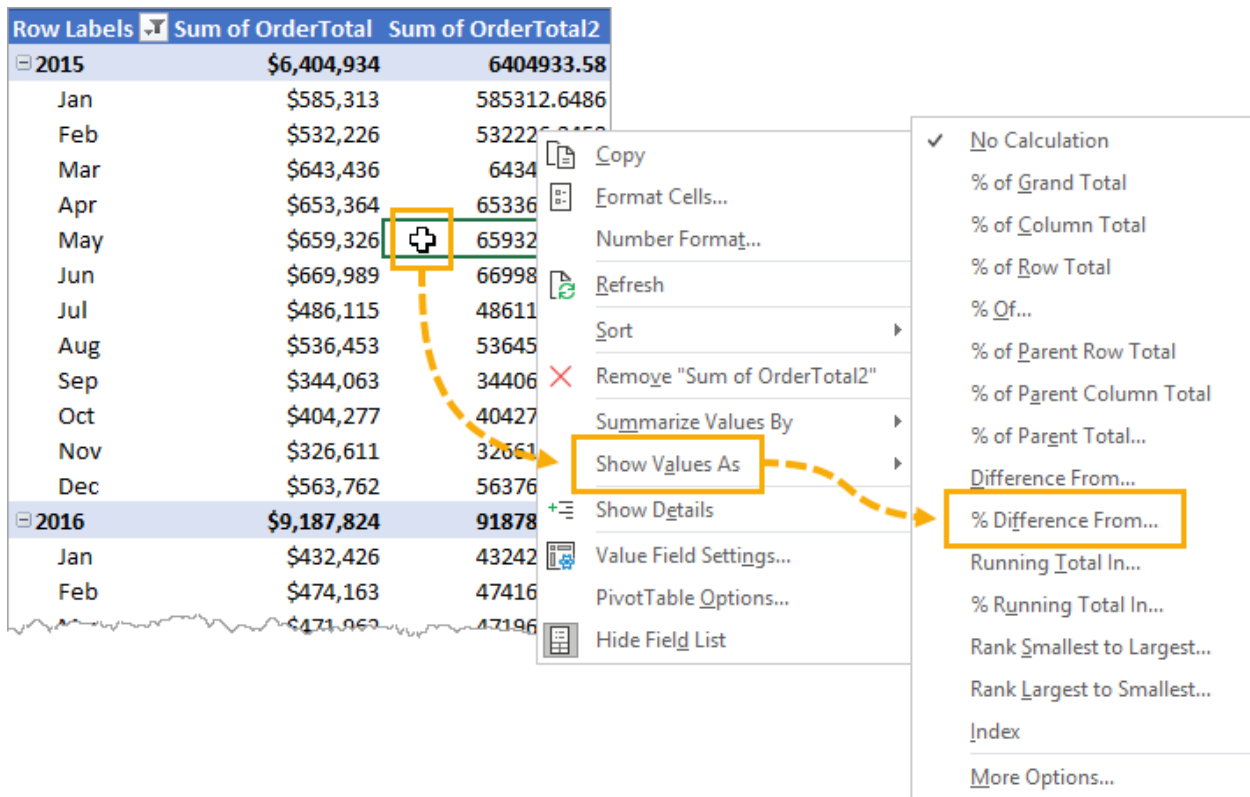
For the first pivot table, we need to add the **Order Date** field into the **Rows** area and two instances of the **Order Total** field into the **Values** area.

This should group the order date into years, quarters and months automatically. We will only need the year and month grouping, so we can remove the quarter grouping from the pivot table.

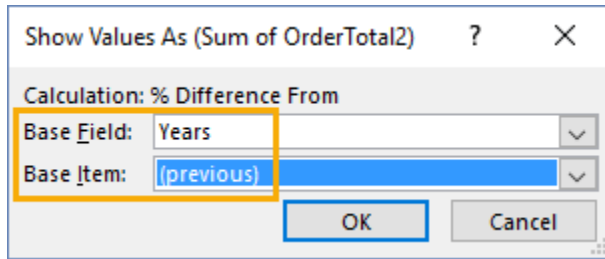


If Excel does not group our order dates automatically, the dates will be listed down the rows of the pivot table and we can **right click** on them and choose the **Group** command from the menu.

The first instance of the **Order Total** in the **Values** area of our pivot table will be a regular **SUM**. For the second instance we will create a percent difference calculation.



We can **right click** on the numbers in our second **Order Total** field and then choose **Show Values As** → **% Difference From**.

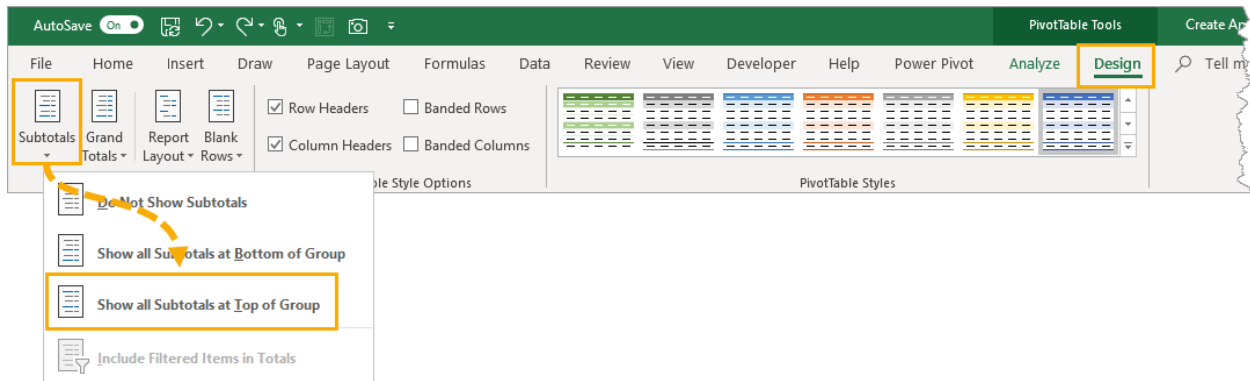


Then we can choose **Years** as our base field and **Previous** as our base item. This will calculate the percent difference from the current year to the previous year for each month.

Sum of OrderTotal	Column Labels		
Row Labels	2015	2016	Grand Total
Jan	\$585,313	\$432,426	\$1,017,738
Feb	\$532,226	\$474,163	\$1,006,389
Mar	\$643,436	\$471,962	\$1,115,398
Apr	\$653,364	\$494,957	\$1,148,321
May	\$659,326	\$545,535	\$1,204,861
Jun	\$669,989	\$533,825	\$1,203,814
Jul	\$486,115	\$809,384	\$1,295,499
Aug	\$536,453	\$779,311	\$1,315,764
Sep	\$344,063	\$928,315	\$1,272,378
Oct	\$404,277	\$1,004,222	\$1,408,499
Nov	\$326,611	\$1,109,128	\$1,435,740
Dec	\$563,762	\$1,604,596	\$2,168,358
Grand Total	\$6,404,934	\$9,187,824	\$15,592,758

For our second pivot table, we will add the Order Date **Month** grouping to the **Rows** area, the Order Date **Year** grouping to the **Columns** area and the **Order Total** field to the **Values** area.

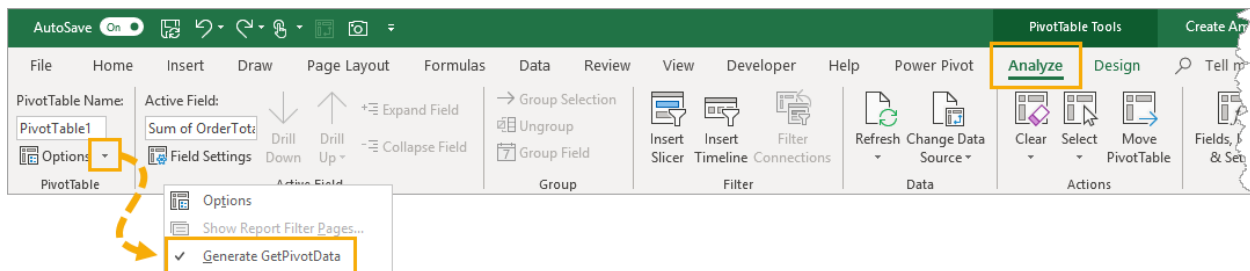
Both pivot tables can then be filtered on the years to show only the two years of data which we want to compare.



We will also need subtotals in the first pivot table. We can add these by selecting the pivot table and going to the **Analyze** tab → **Subtotals** → **Show all Subtotals at the Top of Group**.

Extract The KPI With GetPivotData

Now we can use the GetPivotData formula to extract the numbers from our pivot tables which will feature as the key performance indicator. In our case this will be the total orders for 2016 and the percent difference from 2016 to 2015.



First, we need to turn on the GetPivotData feature. This is the (sometimes annoying) feature that automatically creates a GetPivotData formula when trying to reference a cell inside a pivot table.

This should be enabled by default, but in case it is not, go to the **Analyze** tab and click on the small arrow next to the **Options** then select **Generate GetPivotData** (it should have a small check mark next to it when it's on).

	A	B	C	D	E	F	G	H	I	J
1										
2		Row Labels	Sum of OrderTotal	Sum of OrderTotal2		=GETPIVOTDATA("Sum of OrderTotal", \$B\$2, "Years", 2016)				
3		2015	\$6,404,934							
4		Jan	\$585,313							
5		Feb	\$532,226							
6		Mar	\$643,436							
7		Apr	\$653,364							
8		May	\$659,326							
9		Jun	\$669,989							
10		Jul	\$486,115							
11		Aug	\$536,453							
12		Sep	\$344,063							
13		Oct	\$404,277							
14		Nov	\$326,611							
15		Dec	\$563,762							
16		2016	\$9,187,824	43.4%						
17		Jan	\$432,426	-26.1%						
18		Feb	\$474,163	-10.9%						
19		Mar	\$471,962	-26.6%						
20		Apr	\$494,957	-24.2%						
21		May	\$545,535	-17.3%						
22		Jun	\$533,825	-20.3%						
23		Jul	\$809,384	66.5%						
24		Aug	\$779,311	45.3%						
25		Sep	\$928,315	169.8%						
26		Oct	\$1,004,222	148.4%						
27		Nov	\$1,109,128	239.6%						
28		Dec	\$1,604,596	184.6%						
29		Grand Total	\$15,592,758							
30										

	A	B	C	D	E	F	G	H	I	J
		Sum of OrderTotal	Column Labels							
		Row Labels	2015	2016	Grand Total					
		Jan	\$585,313	\$432,426	\$1,017,738					
		Feb	\$532,226	\$474,163	\$1,006,389					
		Mar	\$643,436	\$471,962	\$1,115,398					
		Apr	\$653,364	\$494,957	\$1,148,321					
		May	\$659,326	\$545,535	\$1,204,861					
		Jun	\$669,989	\$533,825	\$1,203,814					
		Jul	\$486,115	\$809,384	\$1,295,499					
		Aug	\$536,453	\$779,311	\$1,315,764					
		Sep	\$344,063	\$928,315	\$1,272,378					
		Oct	\$404,277	\$1,004,222	\$1,408,499					
		Nov	\$326,611	\$1,109,128	\$1,435,740					
		Dec	\$563,762	\$1,604,596	\$2,168,358					
		Grand Total	\$6,404,934	\$9,187,824	\$15,592,758					

In a cell outside of the pivot table, we can create a formula that references the 2016 subtotal in the pivot table. This will automatically create a GetPivotData formula to reference the value inside the pivot table.

	A	B	C	D	E	F	G	H	I	J
1										
2		Row Labels	Sum of OrderTotal	Sum of OrderTotal2		\$9,187,824				
3		2015	\$6,404,934			=GETPIVOTDATA("Sum of OrderTotal2",\$B\$2,"Years",2016)				
4		Jan	\$585,313							
5		Feb	\$532,226							
6		Mar	\$643,436							
7		Apr	\$653,364							
8		May	\$659,326							
9		Jun	\$669,989							
10		Jul	\$486,115							
11		Aug	\$536,453							
12		Sep	\$344,063							
13		Oct	\$404,277							
14		Nov	\$326,611							
15		Dec	\$563,762							
16		2016	\$9,187,824	43.4%		Sum of OrderTotal	Column Labels			
17		Jan	\$432,426	-26.1%		Row Labels	2015	2016	Grand Total	
18		Feb	\$474,163	-10.9%		Jan	\$585,313	\$432,426	\$1,017,738	
19		Mar	\$471,962	-26.6%		Feb	\$532,226	\$474,163	\$1,006,389	
20		Apr	\$494,957	-24.2%		Mar	\$643,436	\$471,962	\$1,115,398	
21		May	\$545,535	-17.3%		Apr	\$653,364	\$494,957	\$1,148,321	
22		Jun	\$533,825	-20.3%		May	\$659,326	\$545,535	\$1,204,861	
23		Jul	\$809,384	66.5%		Jun	\$669,989	\$533,825	\$1,203,814	
24		Aug	\$779,311	45.3%		Jul	\$486,115	\$809,384	\$1,295,499	
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26		Oct	\$1,004,222	148.4%		Sep	\$344,063	\$928,315	\$1,272,378	
27		Nov	\$1,109,128	239.6%		Oct	\$404,277	\$1,004,222	\$1,408,499	
28		Dec	\$1,604,596	184.6%		Nov	\$326,611	\$1,109,128	\$1,435,740	
29		Grand Total	\$15,592,758			Dec	\$563,762	\$1,604,596	\$2,168,358	
30						Grand Total	\$6,404,934	\$9,187,824	\$15,592,758	

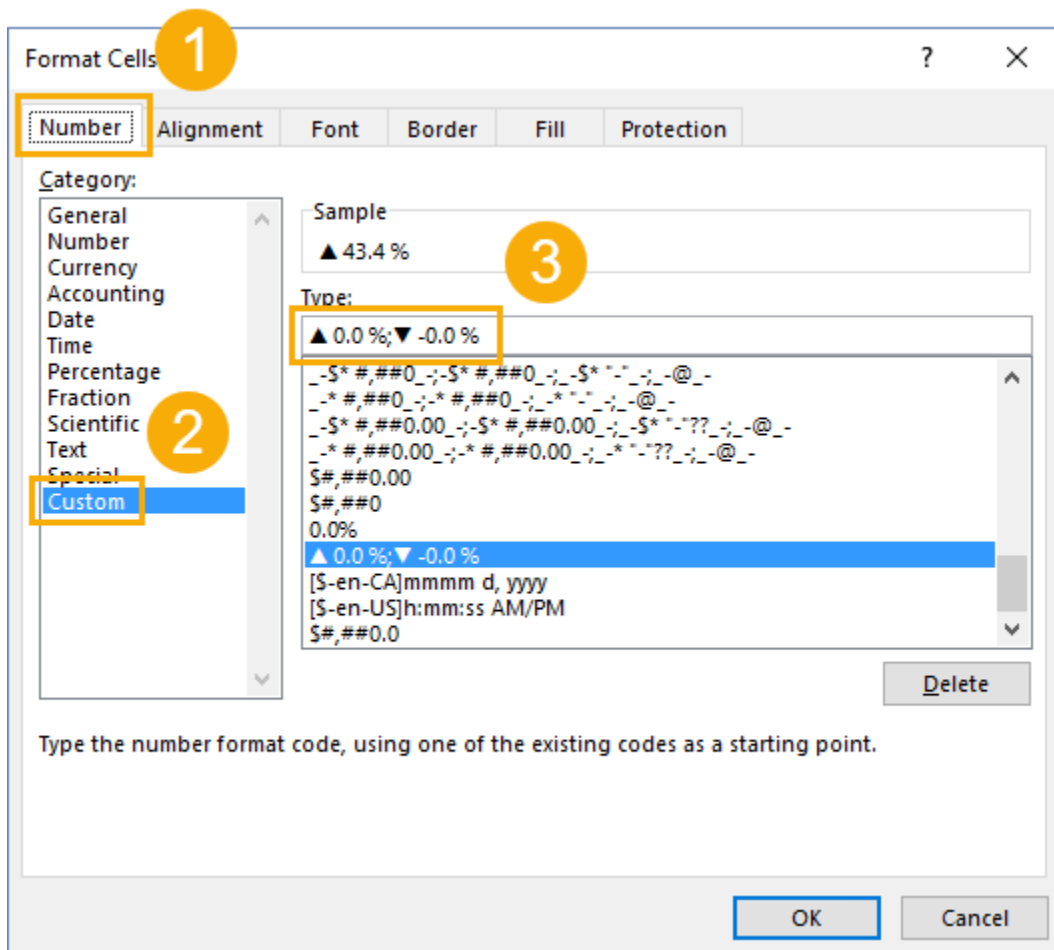
In another cell outside of the pivot table, we can create another GetPivotData reference to the 2016 percent difference subtotal.

	A	B	C	D	E	F	G
1							
2		Row Labels	Sum of OrderTotal	Sum of OrderTotal2		\$9,187,824	
3		2015	\$6,404,934			▲ 43.4%	
4		Jan	\$585,313				
5		Feb	\$532,226				
6		Mar	\$643,436				
7		Apr	\$653,364				
8		May	\$659,326				

Add formatting to the GetPivotData references.

We will need to format these two values as the formatting in the cells is how they will be formatted in our data cards.

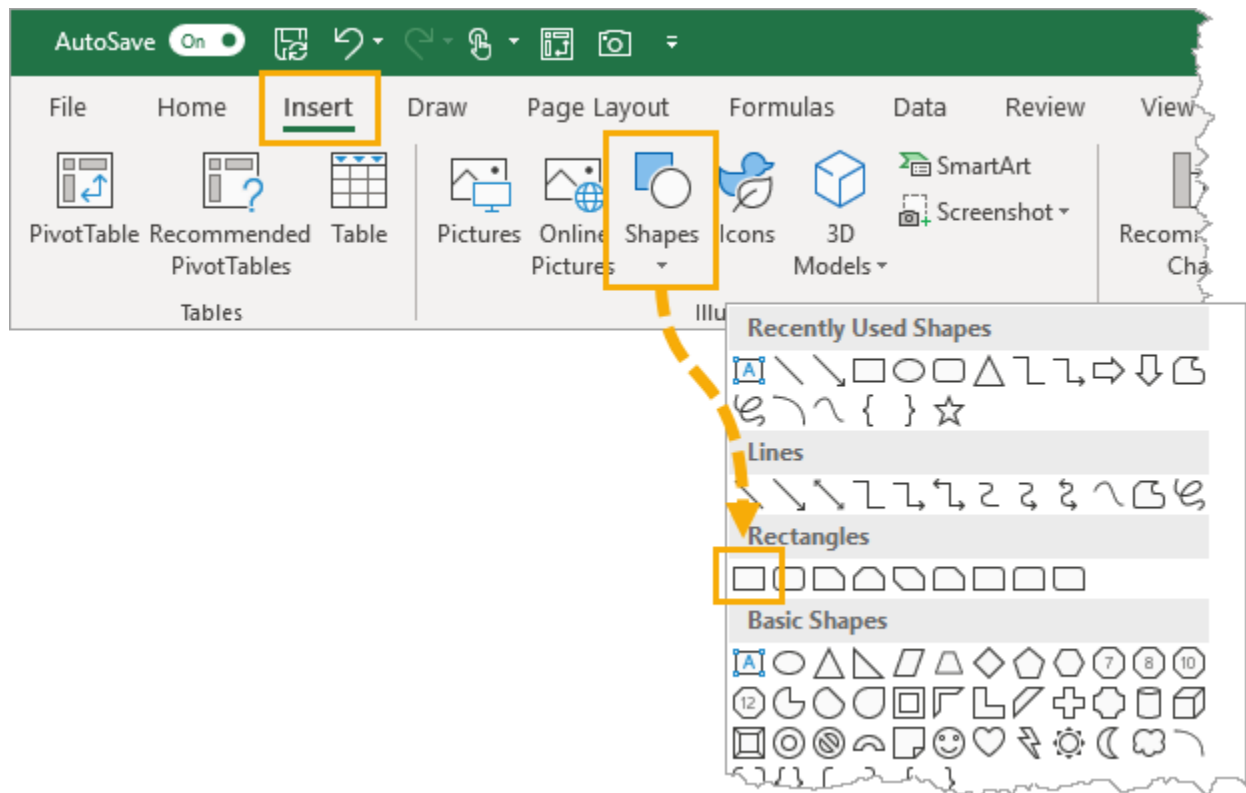
The order subtotal can be formatted as a currency with no decimal places. Go to the **Home** tab and select **Currency** from the **Number** section of the ribbon and adjust the decimal places to show none.



The percent difference subtotal we will add a custom format with up and down arrow symbols for positive and negative values. Press **Ctrl + 1** to open the Format Cells dialog box.

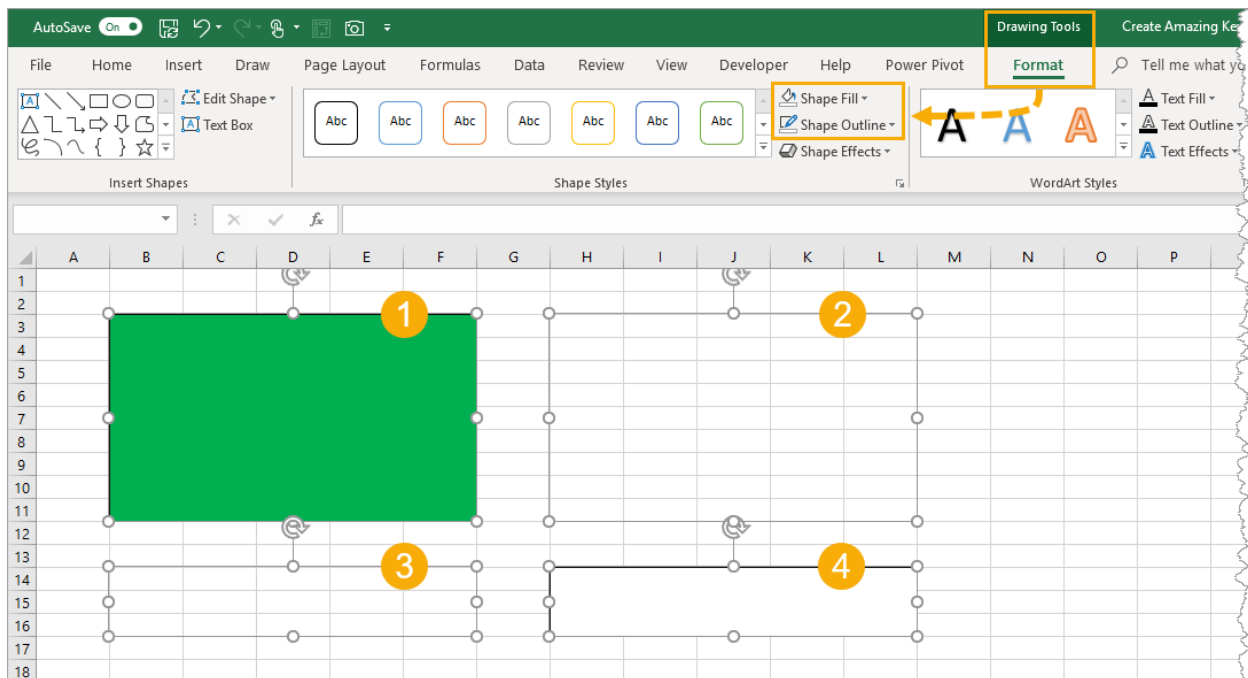
1. Go to the **Number** tab.
2. Select **Custom** from the list.
3. Add **▲ 0.0 %;▼ -0.0 %** into the **Type** field and press the **OK** button. This will display an up arrow for any positive numbers and a down arrow for any negative numbers.

Creating The Data Card



We will need to add in 4 rectangle shapes to our Excel worksheet. One is for the background, two will be to display the subtotals and one will be to display a title heading.

Go to the **Insert** tab and click on the **Shapes** button to select from all the various shapes. Select the **Rectangle** shape and then click and drag in the sheet to draw the shape.

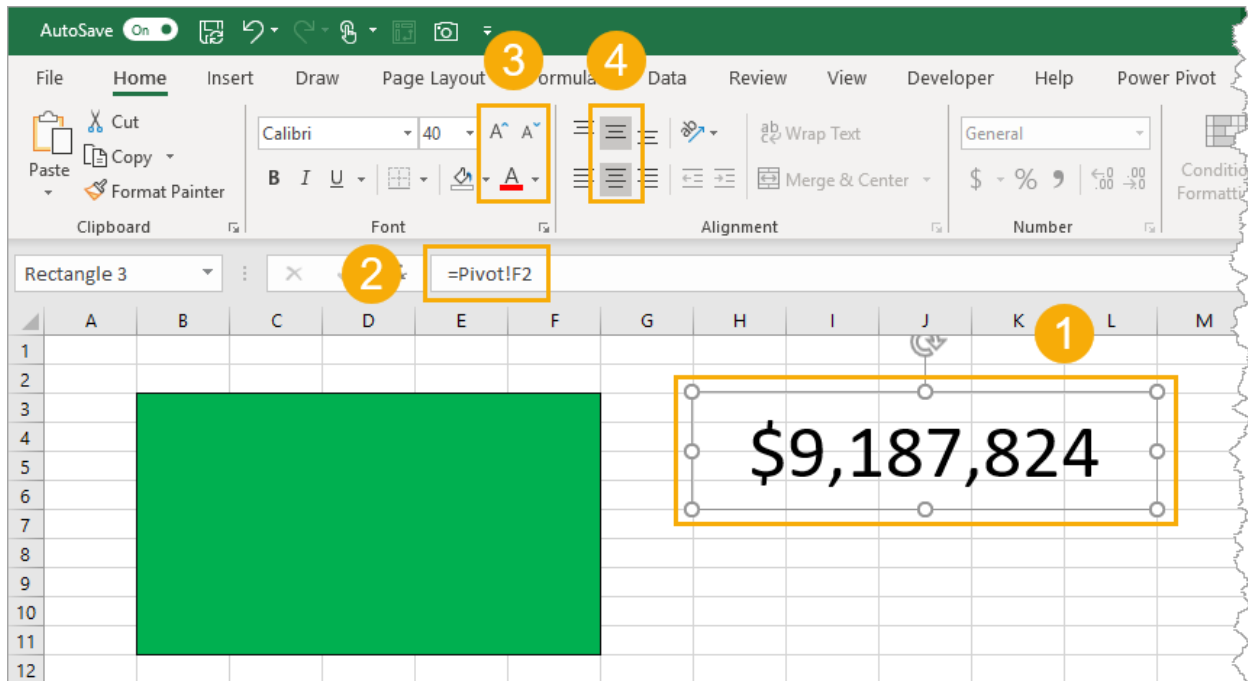


With the 4 shapes we will format the fill and outline based on its purpose.

1. For the background the **Shape Fill** and **Shape Outline** can be a solid colour. We will later be using both black and white for font colour so we should pick a colour for the fill that will contrast nicely with black and white. A black outline and green fill will work nicely.
2. For the subtotal we will choose **No Fill** and **No Outline**. This way the background will show through.
3. For the percent different subtotal we will also pick **No Fill** and **No Outline**.
4. For the title we will pick a white **Shape Fill** and a black **Shape Outline**.

If we create the shapes in this order then we won't need to adjust the layering order later on. The background shape will be underneath the other shapes.

Subtotal And Percent Difference Subtotal Data Cards



Now we can add the subtotal to our rectangle with no fill or outline.

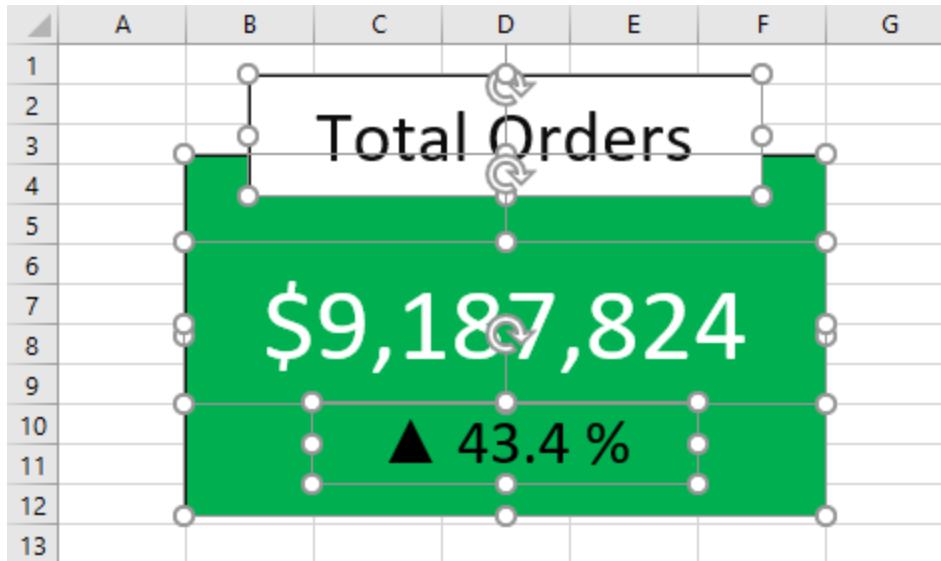
1. Select the shape.
2. In the formula bar type an = then select the cell that contains the GetPivotData reference to our subtotal value.
3. Go to the **Home** tab and increase the font size and change the font colour.
4. We can also **Middle** and **Center** align the text.

We need to do the same with our second rectangle with no fill or outline and our percent difference subtotal value.

Create A Data Card Title Heading

Our last rectangle shape will contain our data card title heading. We can simply select the shape and start typing our title. Then we can go to the **Home** tab to increase the font size, change the font colour, middle and center align the text.

Arrange Align And Group The Shapes

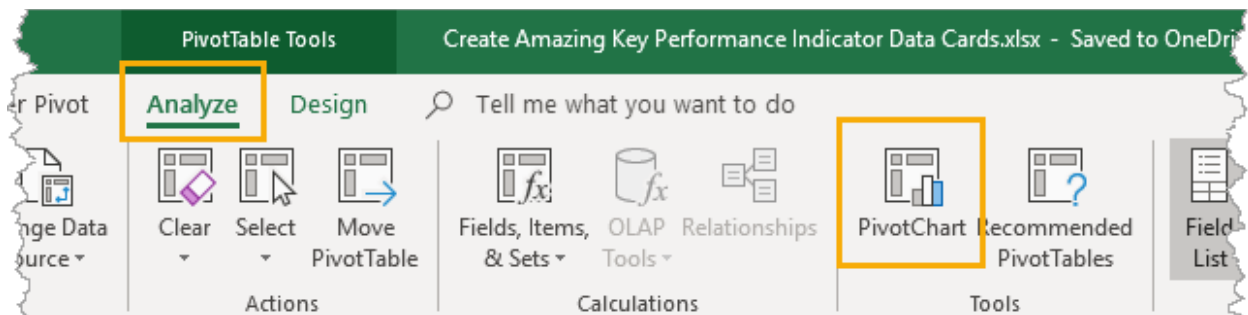


Now that we've got all the shapes, we can select and drag them around to arrange them like the above picture.

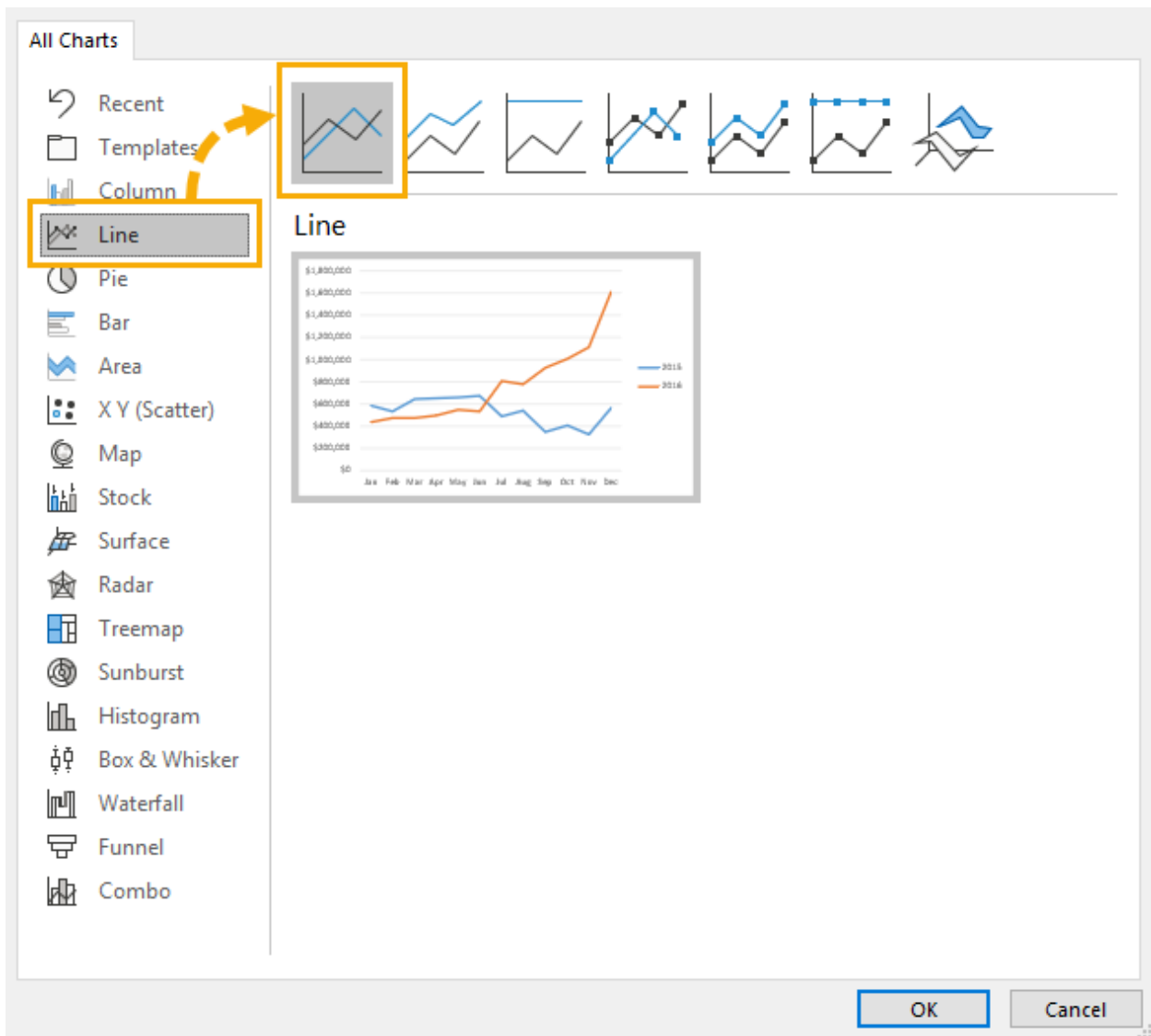
When we're satisfied with the approximate location, we can align them perfectly with the alignment tools. Select all the shapes (select one then press Ctrl + A), then go to **Drawing Tools Design tab** → **Arrange** section → **Align** → **Align Center**.

We can also group them together so we don't accidentally mess up the alignment. With all the shapes selected go to the **Drawing Tools Design tab** → **Arrange** section → **Group** → **Group**.

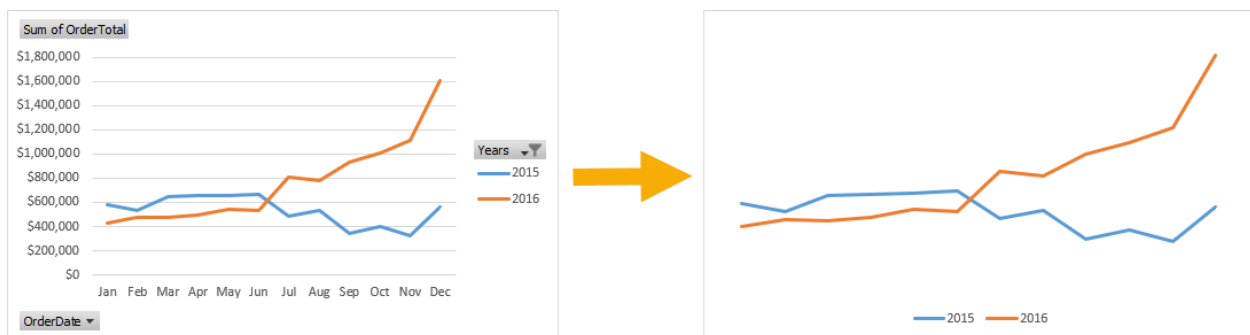
Adding A Line Chart



This is where we're going to use our second pivot table. Select it and go to the **Analyze** tab and press the **PivotChart** command.



Then choose a line chart from the options.



We also want to remove all the buttons, axis, grid lines, move the legend to the bottom, and remove the fill and outline.

1. **Right click** on any of the buttons and select **Hide All Field Buttons on Chart**.
2. Select both axis and press **Delete**.
3. Select the grid lines and press **Delete**.
4. Move the legend to the bottom. Select the chart and go to the **PivotChart Tools Design** tab → **Add chart Element** → **Legend** → **Bottom**.
5. Remove any fill. **PivotChart Tools Format** tab → **Shape Fill** → **No Fill**.
6. Remove any outline. **PivotChart Tools Format** tab → **Shape Outline** → **No Outline**.
7. We can also change the legend text to white for better visibility against our green background. Select the legend and go to the **Home** tab to change the font colour.
8. Change the chart colour palette to one that contrasts well with the background. **PivotChart Tools Design** tab → **Change Colors** → Pick from one of the colour palettes.

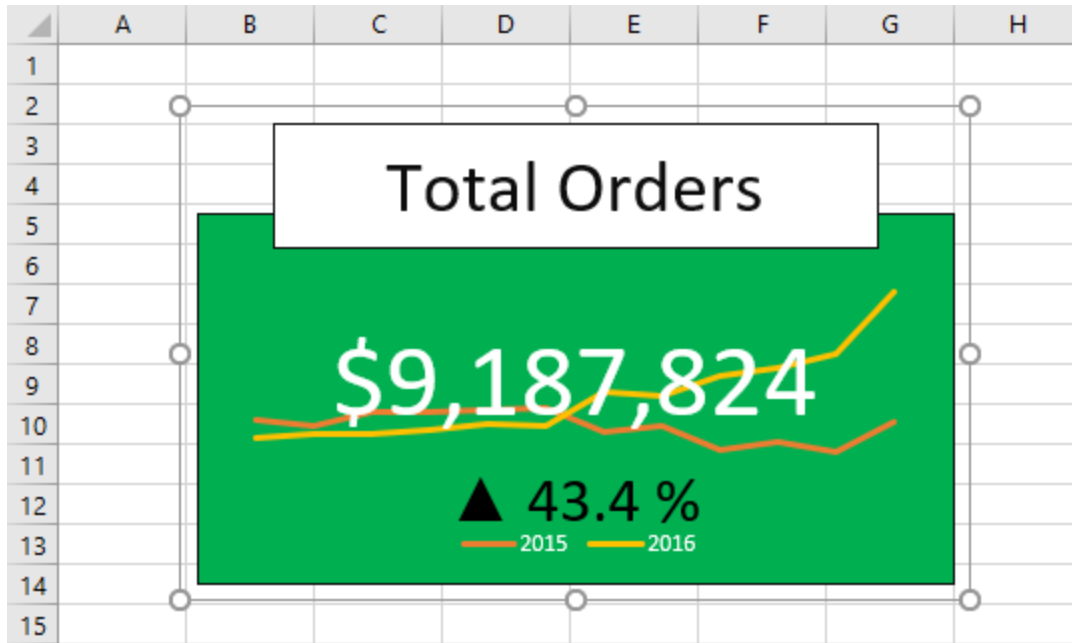
Arrange Line Chart Over The Data Card

Now, we can place the chart over the data card.

Select the chart and go to the **PivotChart Tools Format** tab → **Align** → **Snap to Shape**. This will make it easy to line up the edges of the chart to the edges of the data card background.

Now drag the chart edges so they are lined up with the background. The chart will be the top layered object since it was created last. We want this to be just underneath the large total order number. With only the chart selected go to the **PivotChart Tools Format** tab → **Send Backwards** → **Send Backwards** until it is behind the order total number.

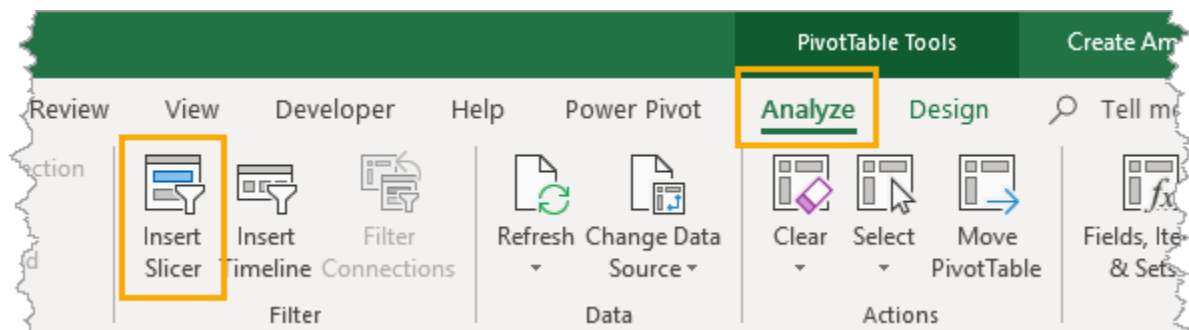
Now we can group everything together. Select every object and go to **Drawing Tools Format** tab → **Group** → **Group**.



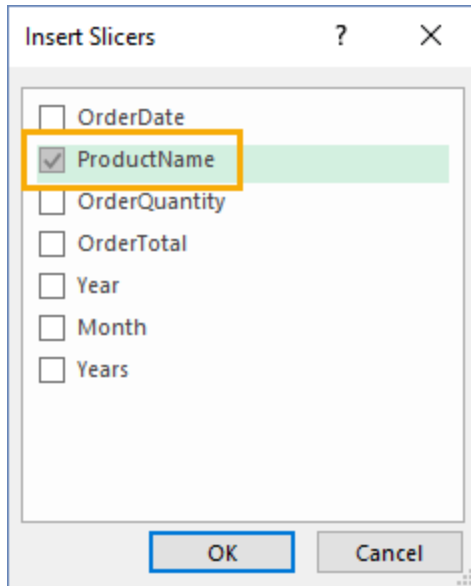
We now have a fancy data card which can be moved around and resized as one object.

Add Slicers To Control The Data Card

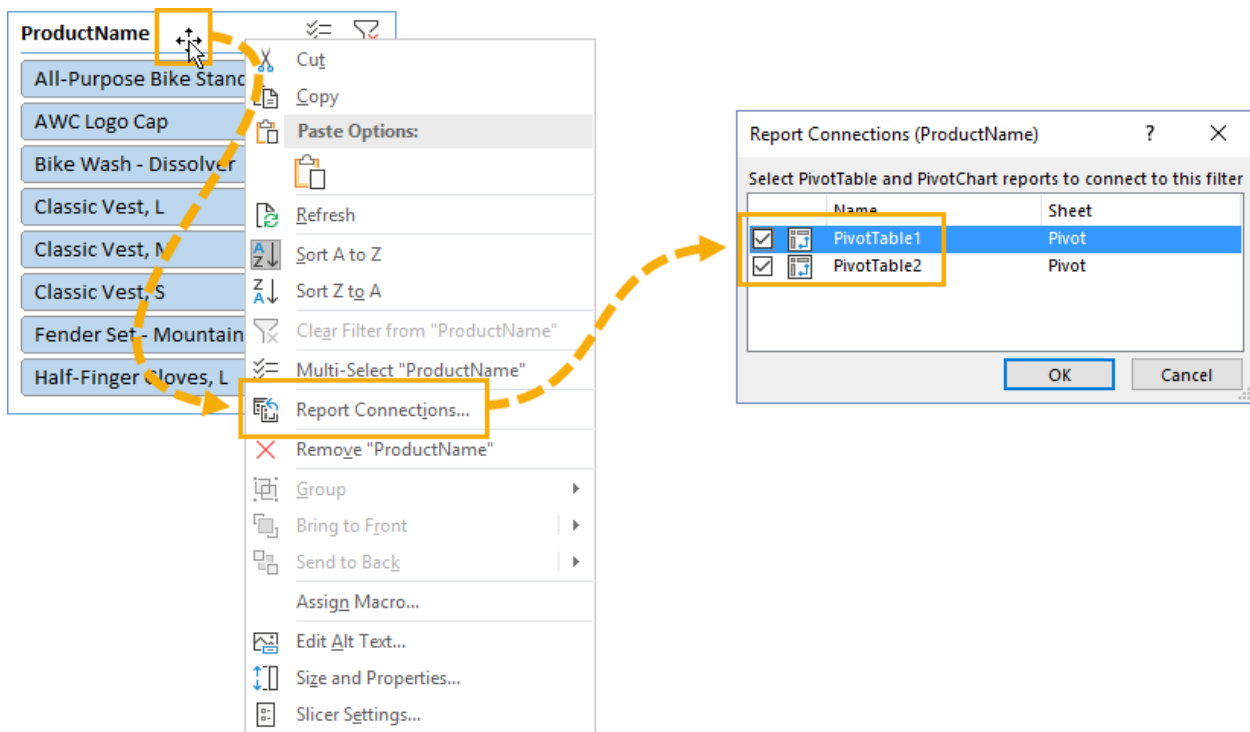
Since the data card is all based on pivot tables, we can now add slicers to control the data card!



Select either pivot table and go to the **Analyze** tab and select the **Insert Slicer** command.



We can select any field(s) in our data for a slicer. In this example we'll add a slicer for our products.



We also need to connect the new slicer(s) to the other pivot table. **Right click** on the slicer and select **Report Connections** from the menu, then check off both pivot tables in the Report Connections dialog box.

Now the data card will show the 2016 total orders for any set of products selected in the slicer as well as the percent change from 2015.

Conclusions

With a little work and creativity, we can make some pretty cool stuff for our Excel dashboards.

Setting up the pivot tables correctly to extract the metrics we want to display in the data cards is essential to the whole process. The pivot tables take care of summarizing the key metrics of our data.

The shapes can't directly reference the values in our pivot tables though, so it's necessary to use the GetPivotData formula as an intermediate step to reference the values.

I'd love to hear about what kind of cool dashboard visuals you've been able to make. Let me know in the comments!

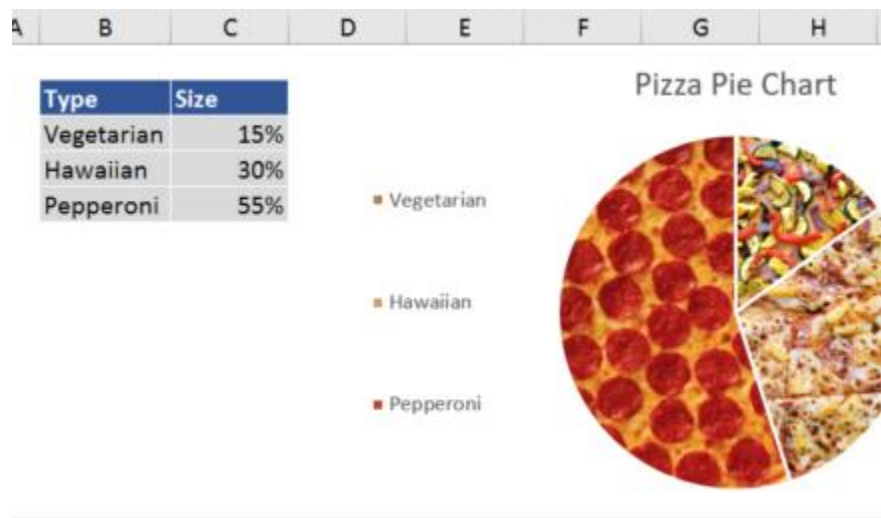
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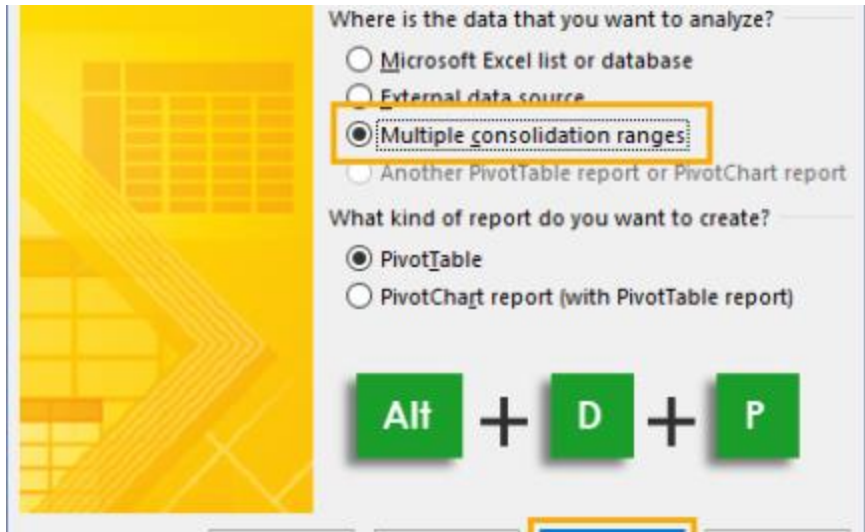
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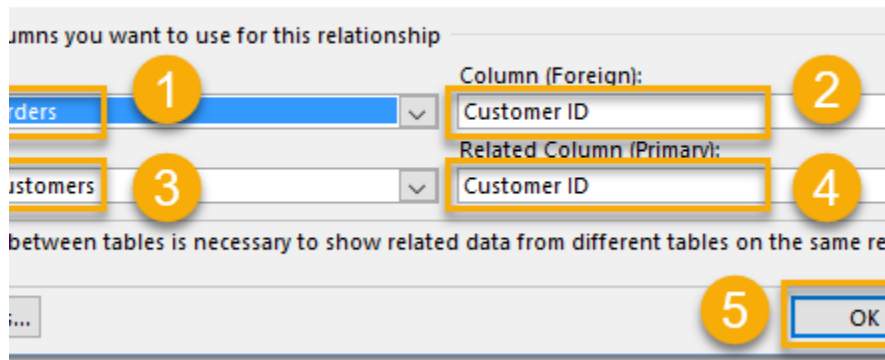
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The image displays three PivotTable screenshots side-by-side, illustrating different ways to sort and filter data. Each table has 'Row Labels' and 'Sum of Total' columns. The items listed are Chair, Desk, Eraser, Lamp, Notepad, Paperclips, Pencils, and Pens, with a Grand Total of \$1,063.82.

Row Labels	Sum of Total
Chair	\$270.00
Desk	\$562.50
Eraser	\$0.26
Lamp	\$121.50
Notepad	\$15.00
Paperclips	\$15.00
Pencils	\$45.00
Pens	\$34.56
Grand Total	\$1,063.82

Row Labels	Sum of Total
Chair	\$270.00
Desk	\$562.50
Eraser	\$0.26
Lamp	\$121.50
Notepad	\$15.00
Paperclips	\$15.00
Pencils	\$45.00
Pens	\$34.56
Grand Total	\$1,063.82

Row Labels	Sum of Total
Chair	\$270.00
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Pencils	\$45.00
Pens	\$34.56
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101 Advanced Pivot Table Tips You Need to Know

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2017-10-15