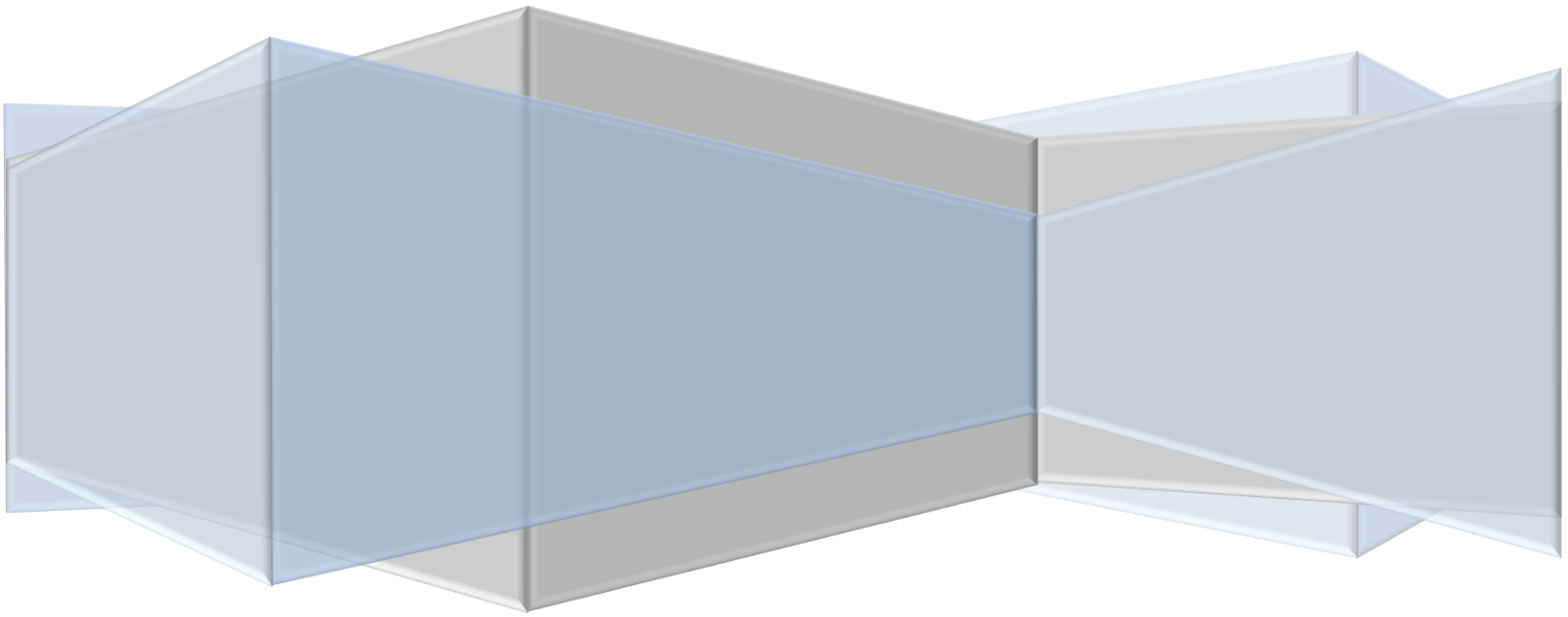
Cornerstone Training and Consulting

Excel Pivot Tables

Student Guide

Stephanie Johnson



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Sorting and Filtering

Sorting and Filtering allow you to manipulate data in a worksheet based on given set of criteria.

Basic Sorts

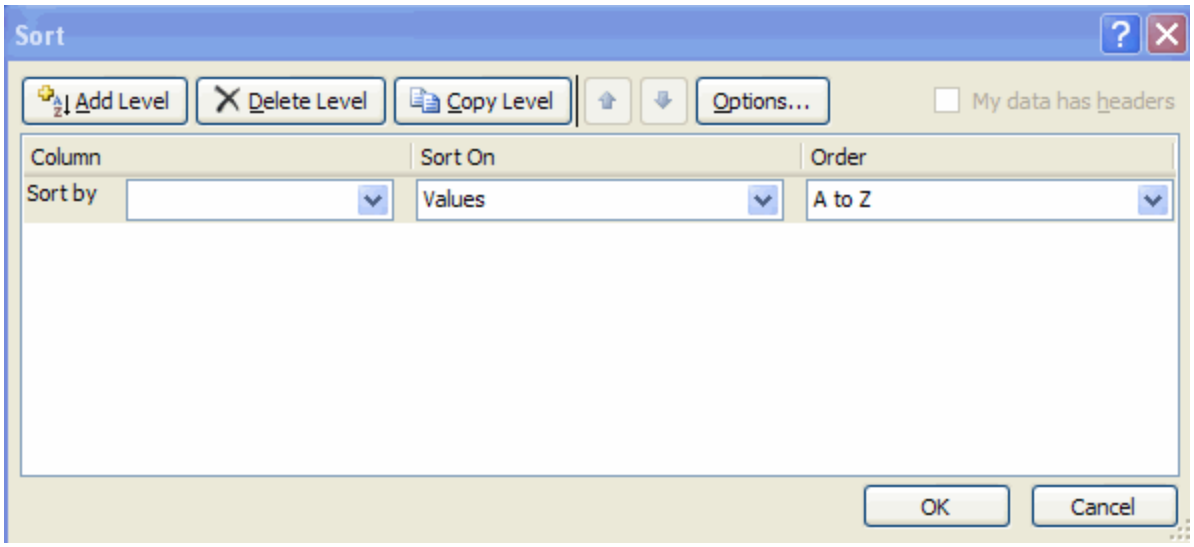
To execute a basic descending or ascending sort based on one column:

- Highlight the cells that will be sorted
- Click the **Sort & Filter** button on the **Home** tab
- Click the **Sort Ascending** (A-Z) button or **Sort Descending** (Z-A) button

Custom Sorts

To sort on the basis of more than one column:

- Click the **Sort & Filter** button on the **Home** tab
- Choose which column you want to sort by first
- Click **Add Level**
- Choose the next column you want to sort
- Click **OK**



Subtotals

Once you have a conventional range, sort the data according to your subtotaling needs. For instance, to subtotal the Total column by Salesperson, you must first sort the data by Salesperson, as follows:

1. Click in any Salesperson cell.
2. In Excel 2003 and earlier, click Sort Ascending or Sort Descending, accordingly. Excel 2010 users much select a specific sort by clicking Sort and Filter in the Editing group on the Home tab.

	A	B	C	D	E	F
1	Date	Salesperson	Product	Total		
2	2-Jan	Bill	Cruise	$4,355.00		
3	3-Feb	Bill	Sporting Event	$500.00		
4	15-Jan	Susan	Honeymoon	$2,900.00		
5	15-Feb	Susan	Honeymoon	$1,790.00		
6	9-Mar	Susan	Cruise	$6,090.00		
7						
8						
9						
10						

Now you're ready to add subtotals, as follows:

1. Click anywhere inside the spreadsheet.
2. In Excel 2003, choose Subtotals from the Data menu. Excel 2010 users should click Subtotal in the Outline group on the Data tab. In the Subtotal dialog box, you have a number of choices:
    - From the At Each Change In control, choose the column by which you're subtotaling (not the column that contains the values you're subtotaling). In this case, that's the Salesperson column.

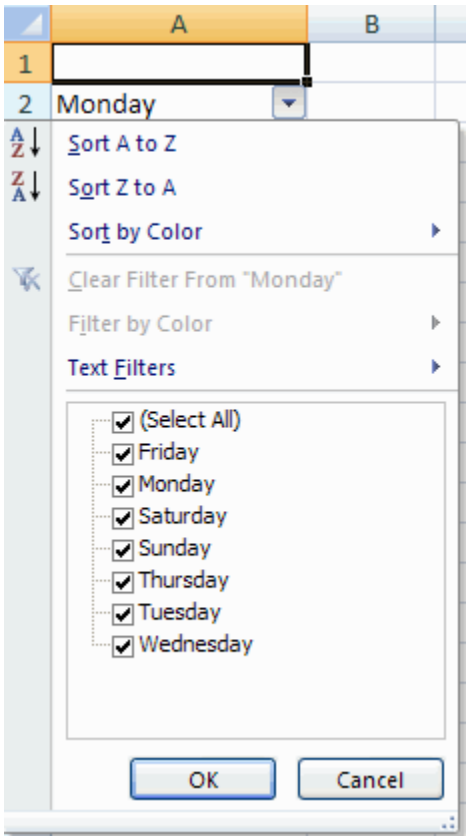
- From the Use Function control, select the appropriate function. Sum is the default, and in this case, the desired function.
- Check the appropriate columns in the Add Subtotal To section. In this case, check Total.

3. After specifying the right columns and functions, click OK.

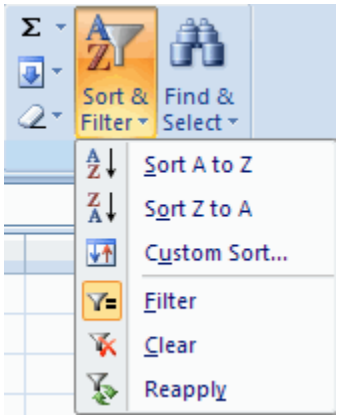
Filtering

Filtering allows you to display only data that meets certain criteria. To filter:

- Click the column or columns that contain the data you wish to filter
- On the **Home** tab, click on **Sort & Filter**
- Click **Filter** button
- Click the **Arrow** at the bottom of the first cell
- Click the **Text Filter**
- Click the **Words** you wish to Filter



- To clear the filter click the **Sort & Filter** button
- Click **Clear**



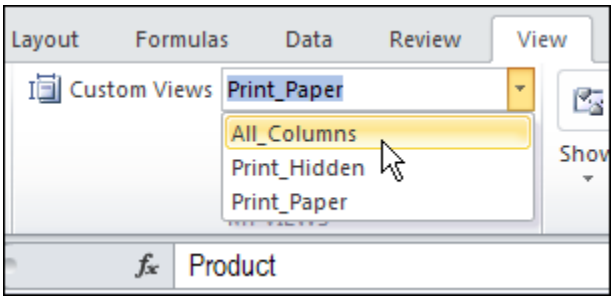
Custom Views

In an Excel file, you might need to change the layout, before you print a report. For example,

- in a customer report, the pricing columns are hidden.
- for a supplier report, you filter for a specific product, and hide some columns.
- for your internal reports, all the columns and rows are visible.

To quickly show the different layouts, without any programming, you can create Custom Views, and select one from a drop down list.

NOTE: In Excel 2010 and Excel 2010, the Custom View options are not available, if there is a **named Excel Table**, anywhere in the workbook.

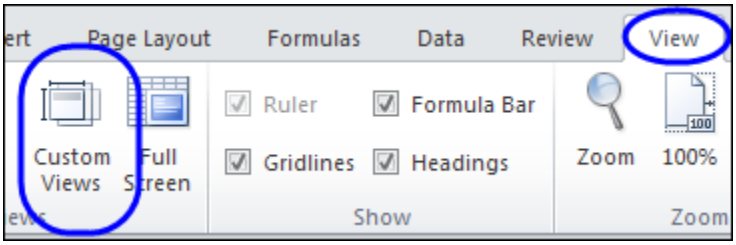


Set Up a Default Custom View

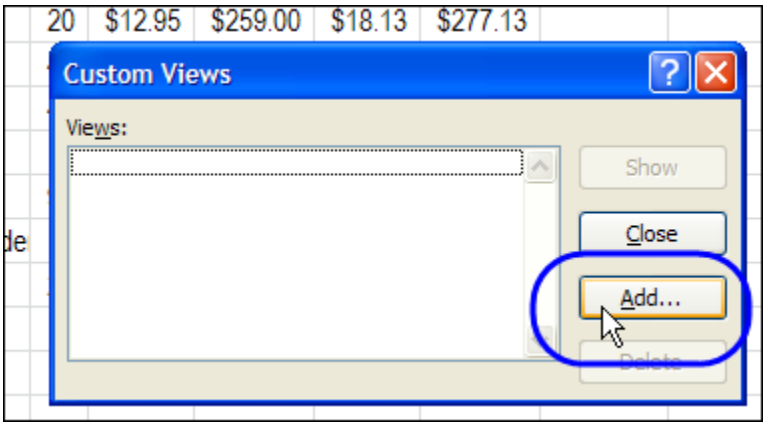
If you're creating Custom Views, you should create a default Custom View first, with the layout that you use most often. In this example, the default worksheet layout has all the columns and rows visible.

To create a Custom View

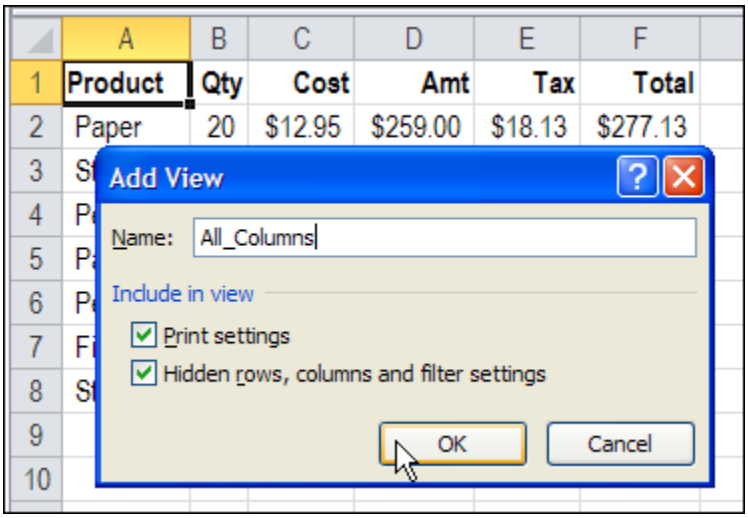
- On the Excel Ribbon, click the View tab
- Click Custom Views



- In the Custom Views dialog box click Add



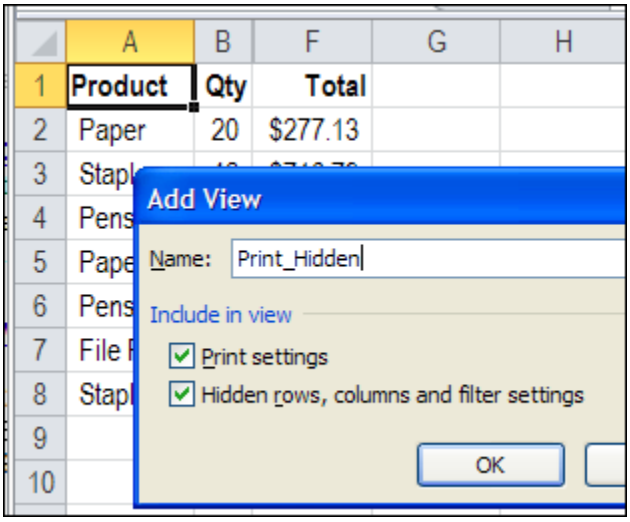
- Type a name for the Custom View, then click OK



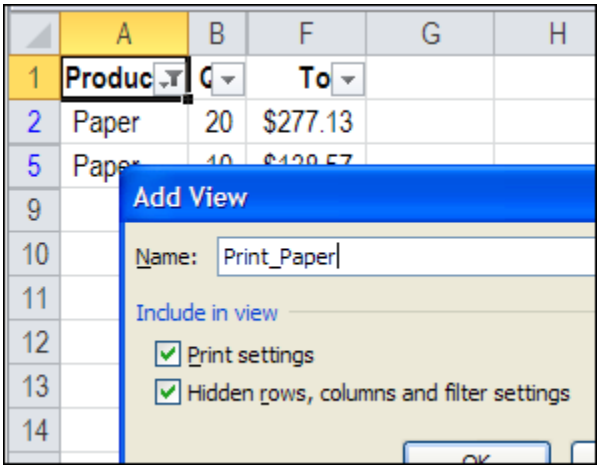
Set Up the Alternate Custom Views

After you set up the default worksheet Custom View, change the layout for the next Custom View. In this example columns C:E are hidden.

- Click the Custom Views command again, and add a Custom View for this layout – Print_Hidden.



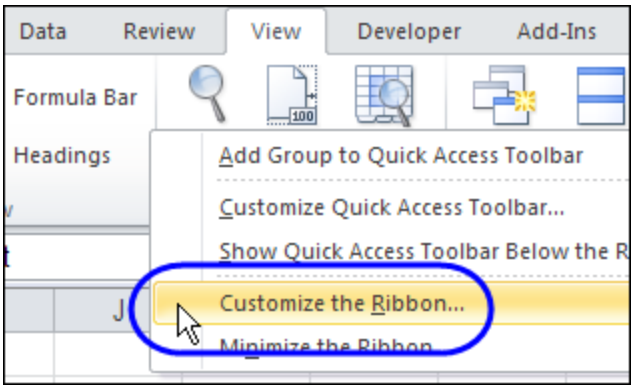
Create as many custom views as you need. This example has a filter applied for paper products, and the Custom View will include those filter settings.



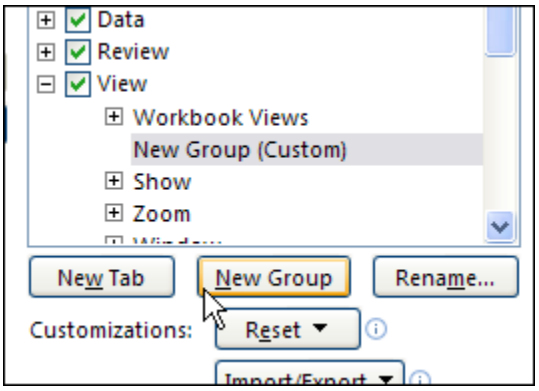
Add a Custom Views List to the Ribbon

To make it easy to switch between Custom Views, you can add a drop-down list of Custom Views to the Excel Ribbon. (If you're using Excel 2010, you can add this drop-down list to the Quick Access Toolbar, instead of the Ribbon.)

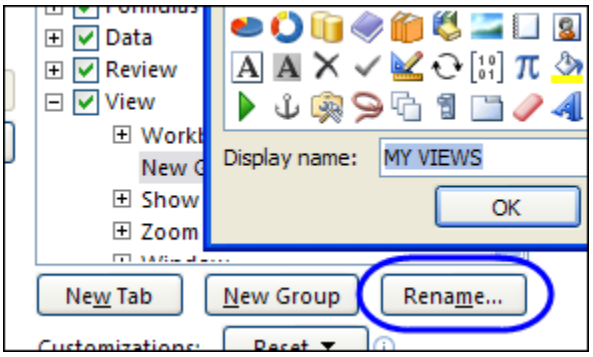
- In Excel 2010, right-click the Ribbon, and click Customize the Ribbon



- In the Excel Options window, at the right, click the + to the left of the View tab.
- Click Workbook Views, to select that Group, and click the New Group button. That will add a new Group below Workbook Views.

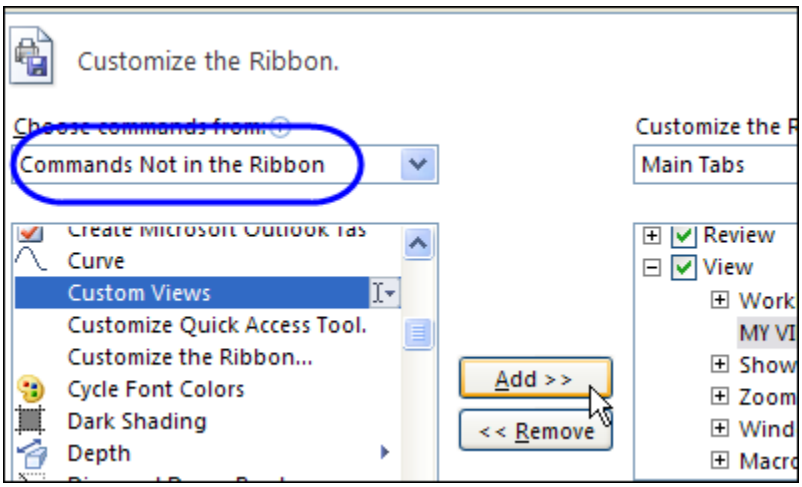


- With the new Group selected, click Rename
- Type a name For the new group, and click OK – in this example the new group is called MY VIEWS



- With the MY VIEWS group selected, click the drop down arrow for Choose Commands From
- Click on Commands Not in the Ribbon

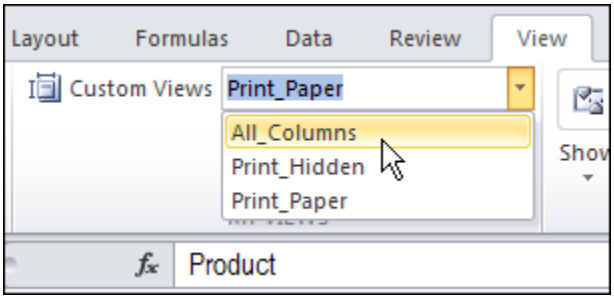
- Scroll down and click on Custom Views, then click Add, to move that command to the MY VIEWS group.



- Click OK, to close the Excel Options window.

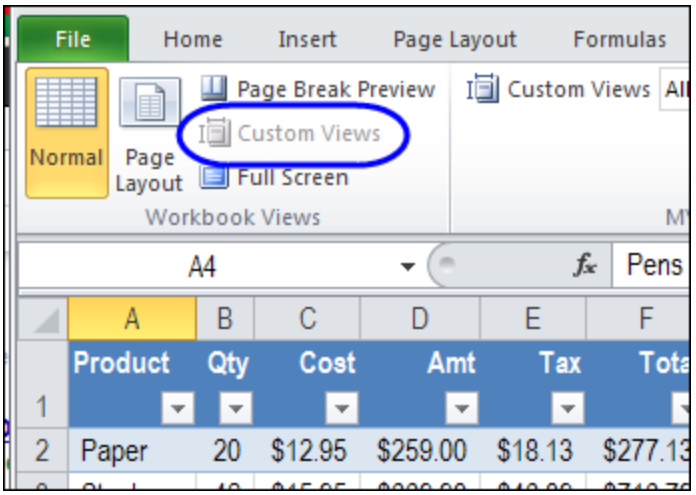
Test the Custom Views

On the Excel Ribbon's View tab, you'll see the Custom Views drop down list. Select one of the Custom Views to see that layout.



No Excel Tables With Custom Views

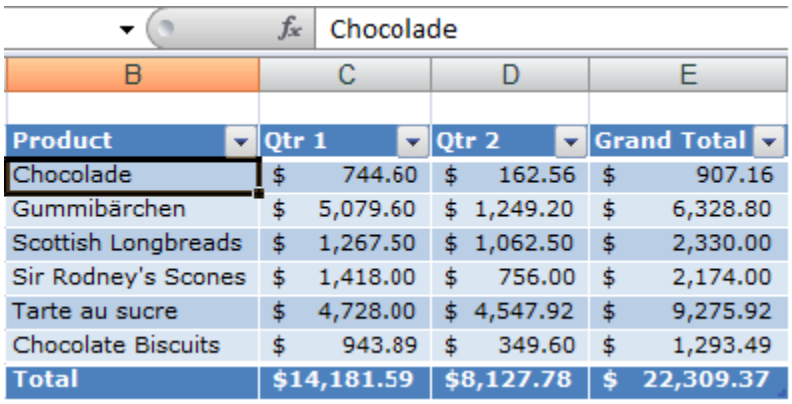
Remember though – if you have a named Excel table in your workbook – on any sheet – the Custom Views options will not be available. Strange, but true.



Tables

Create or delete an Excel table in a worksheet

When you create a table (previously known as list) in a Microsoft Office Excel worksheet (worksheet: The primary document that you use in Excel to store and work with data. Also called a spreadsheet. A worksheet consists of cells that are organized into columns and rows; a worksheet is always stored in a workbook.), you can manage and analyze the data in that table independently of data outside the table



Product	Qtr 1	Qtr 2	Grand Total
Chocolade	$ 744.60	$ 162.56	$ 907.16
Gummibärchen	$ 5,079.60	$ 1,249.20	$ 6,328.80
Scottish Longbreads	$ 1,267.50	$ 1,062.50	$ 2,330.00
Sir Rodney's Scones	$ 1,418.00	$ 756.00	$ 2,174.00
Tarte au sucre	$ 4,728.00	$ 4,547.92	$ 9,275.92
Chocolate Biscuits	$ 943.89	$ 349.60	$ 1,293.49
Total	$14,181.59	$8,127.78	$ 22,309.37

If you do not want to work with your data in a table, you can convert the table to a regular range while keeping any table style formatting that you applied. When you no longer need a table, you can delete it.

Note Excel tables should not be confused with the data tables (data table: A range of cells that shows the results of substituting different values in one or more formulas. There are two types of data tables: one-input tables and two-input tables.) that is part of a suite of what-if analysis commands. For more information about data tables, see Calculate multiple results with a data table.

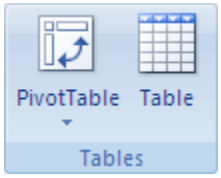
Create a table

You can use one of two ways to create a table. You can either insert a table in the default table style or you can format your data as a table in a style that you choose.

Insert a table

On a worksheet, select the range of cells that you want to include in the table. The cells can be empty or can contain data.

On the Insert tab, in the Tables group, click Table.



Keyboard shortcut You can also press CTRL+L or CTRL+T.

If the selected range contains data that you want to display as table headers, select the My table has headers check box.

Table headers display default names if you do not select the My table has headers check box. You can change the default names by typing the text that you want.

Note If you do not want to display table headers, you can turn them off later. For more information about how to turn table headers off, see Turn Excel table headers on or off.

Tips

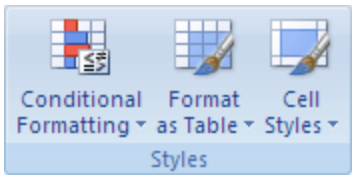
After you create a table, the Table Tools become available, and a Design tab is displayed. You can use the tools on the Design tab to customize or edit the table.

Unlike lists in Office Excel 2003, a table does not have a special row (marked with *) for quickly adding new rows. For more information about how to add or insert rows in a table, see Add or remove table rows and columns in an Excel table.

Format data as a table

On the worksheet, select a range of empty cells or cells that contain the data that you want to quickly format as a table.

On the Home tab, in the Styles group, click Format as Table.



Note When you use Format as Table, Office Excel automatically inserts a table.

Under Light, Medium, or Dark, click the table style that you want to use.

Note Custom table styles are available under Custom after you create one or more of them. For information about how to create a custom table style, see Format an Excel table.

Tips

After you create a table, the Table Tools become available, and a Design tab is displayed. You can use the tools on the Design tab to customize or edit the table.

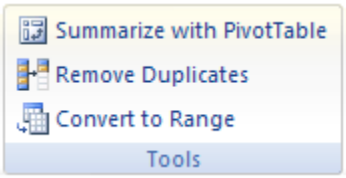
Unlike lists in Office Excel 2003, a table does not have a special row (marked with *) for quickly adding new rows. For more information about how to add or insert rows in a table, see Add or remove table rows and columns in an Excel table.

Convert a table to a range of data

Click anywhere in the table.

Tip This displays the Table Tools, adding the Design tab.

On the Design tab, in the Tools group, click Convert to Range.



Note Table features are no longer available after you convert the table back to a range. For example, the row headers no longer include the sort and filter arrows, and structured references (references that use table names) that were used in formulas turn into regular cell references.

Pivot Tables

Creating a PivotTable report

In the example that follows, a PivotTable report is created from the original Excel data list shown in the previous section. Begin by selecting any cell in the list from which you want to create your table. On the

toolbar, click **Data**, and then click **PivotTable and PivotChart Report**. This action displays the PivotTable and PivotChart Wizard, which prompts you to follow these steps:

Step 1: Specify the type of data source

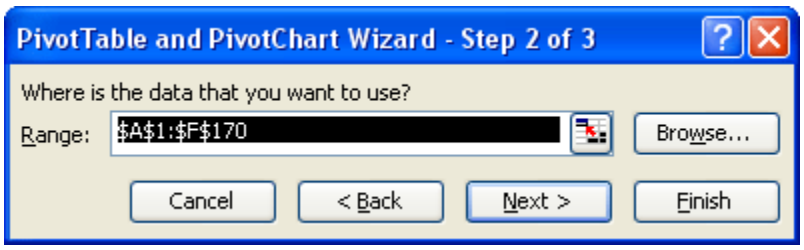
On the first page of the PivotTable and PivotChart Wizard, specify the type of data source on which the table will be based and whether you want to create a PivotTable report or a PivotChart report.

1. Under **Where is the data that you want to analyze?** select **Microsoft Excel list or database**.
2. Under **What kind of report do you want to create?** select **PivotTable**. Click **Next**.

Step 2: Indicate the location of your source data

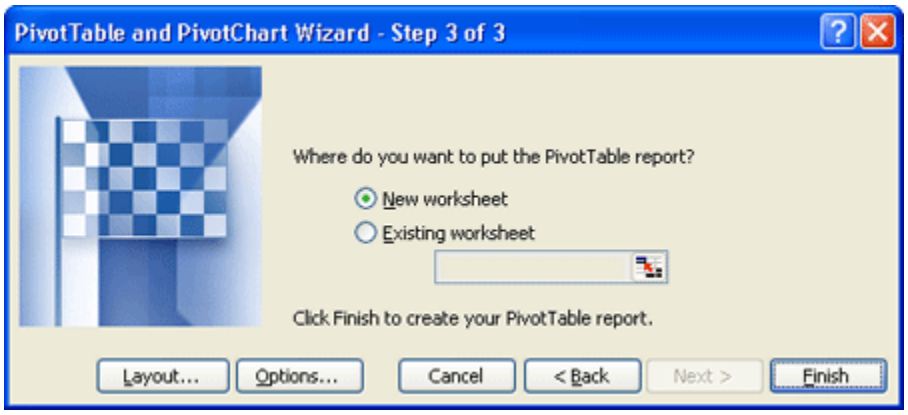
On the second page of the wizard, indicate the location of your source data. If you're basing your PivotTable report on an Excel data list and you selected a cell in that list before invoking the wizard, the wizard already has the location of your data but merely prompts you to confirm the location. If your data source is an Excel data list that isn't currently open, click **Browse** to find it.

Note Your Excel data list must include a unique field name at the top of each column.



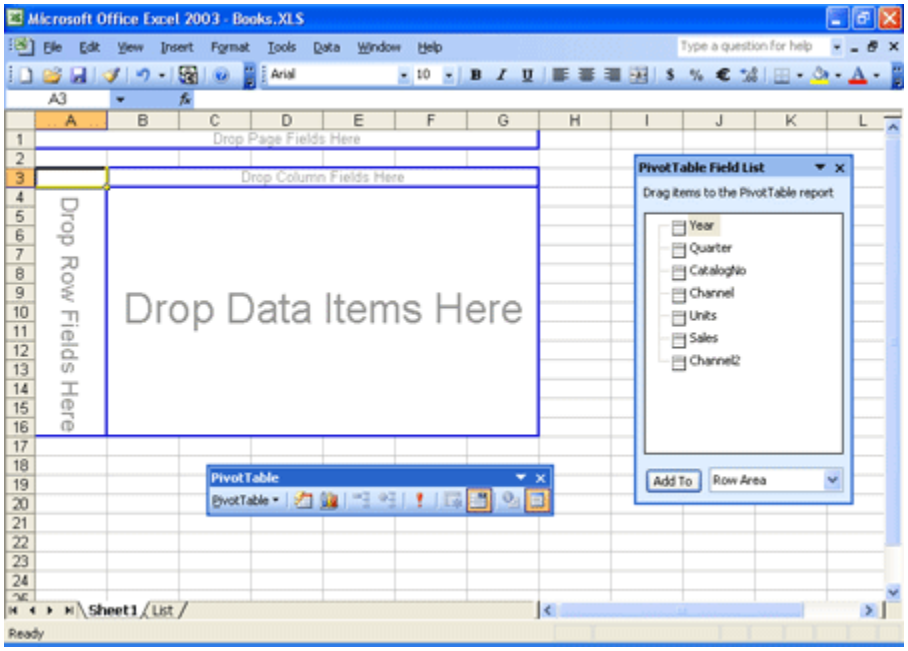
Step 3: Indicate where you want to put your PivotTable report

On the third page of the wizard, indicate where you want your PivotTable report to appear. To place the report on a new worksheet (always a safe choice), select **New Worksheet**. Otherwise, select **Existing Worksheet** and supply a range reference or name in the text box. Click **Finish** to exit the wizard.



Laying out the PivotTable report

When you have completed following the instructions in the PivotTable and PivotChart Wizard, Excel displays a blank table similar to the one that follows. The only remaining task is to drag field headings from the **Field List** dialog box to the appropriate places on the PivotTable report layout.

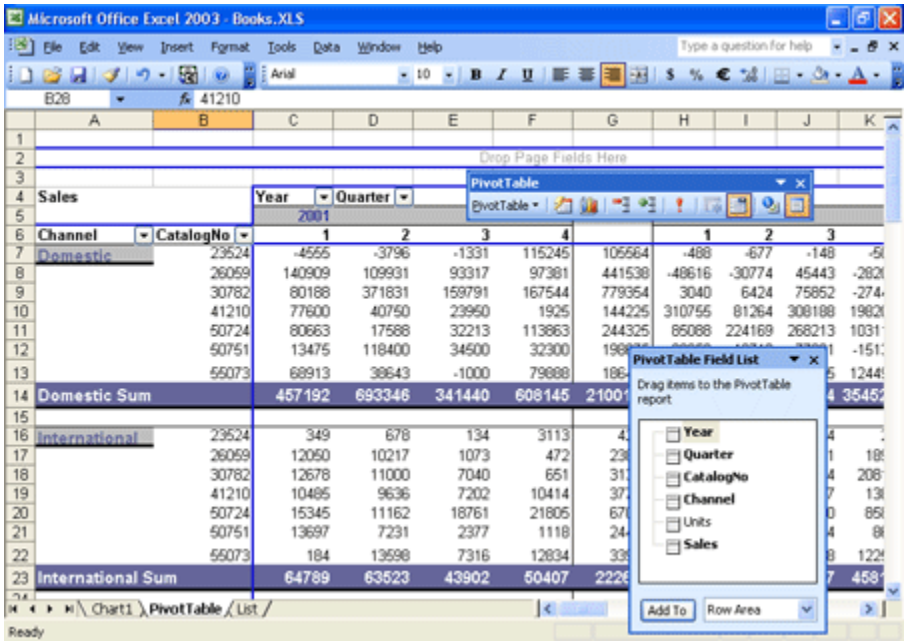


For this example, from the **Field List** dialog box, the **Channel** and **CatalogNo** fields was moved to the row axis, the **Quarter** and **Year** headings to the column axis, and the **Sales** heading to the data area. You can put as many fields as you like in any of the areas of the layout. To remove a field, drag its heading off the layout.

Note If you find the **Field List** dialog box distracting, you can hide it by clicking its **Close** button. With the field list hidden, you can rearrange your PivotTable report by dragging field headings from their row, column, and page positions. To redisplay the **Field List** dialog box, on the PivotTable report toolbar, click **Show Field List**.

Pivoting a PivotTable report

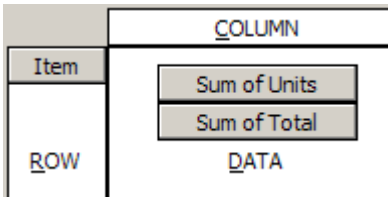
To pivot, or rearrange, a PivotTable report, drag one or more field headings. For example, to move a field from the column axis to the row axis, all you have to do is drag it's heading from the column area to the row area. In addition to transforming rows, you can change the order in which fields are displayed on the column or row axis. In this example, the **Channel** heading was dragged to the left of the **Catalog No** heading to produce the following PivotTable report.



Arrange Multiple Data Fields

If you place two fields in the Data area of a Pivot Table, they might appear vertically arranged.

In this pivot table, the Units and Total fields have been added to the data area in the Pivot Table Wizard.



In the pivot table, the two data fields, Sum of Units and Sum of Total, appear in a single column, stacked vertically in the pivot table.

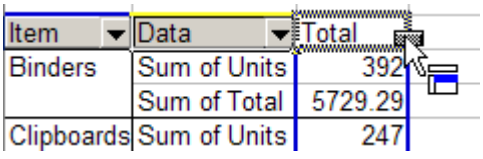
This layout makes it difficult to compare the Units sold for each product or to compare the total sales per product.

	Item	Data	Total
4	Binders	Sum of Units	392
5		Sum of Total	5729.29
6	Clipboards	Sum of Units	247
7		Sum of Total	1232.53
8	Pencils	Sum of Units	185
9		Sum of Total	368.15
10	Pens	Sum of Units	384
11		Sum of Total	1287.16
12	Total Sum of Units		1208
13	Total Sum of Total		8617.13

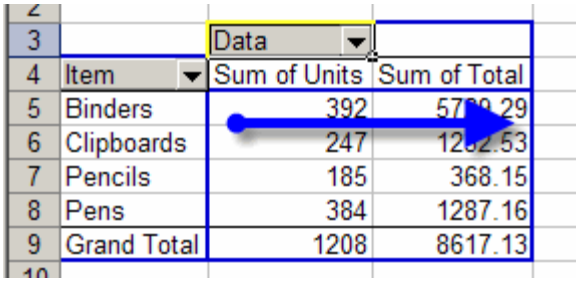
To make the data easier to read, you can rearrange the table layout. If you move the data fields into the pivot table's column area, each data field will appear in a single column.

To change the layout, follow these steps:

1. In the pivot table, point to the grey button for the Data field
2. Hold the left mouse button, and drag the Data button onto the cell which contains the word 'Total'
3. Release the mouse button



The Data fields will now be arranged horizontally, with each data field in a single column.



3		Data	
4	Item	Sum of Units	Sum of Total
5	Binders	392	5[illegible].29
6	Clipboards	247	1[illegible].53
7	Pencils	185	368.15
8	Pens	384	1287.16
9	Grand Total	1208	8617.13

Rename Data Fields

When you add fields to the Data area, they are renamed, e.g. 'Units' becomes 'Sum of Units'. Instead of using these default names, you can change the field names to something shorter, or more descriptive.

There are several ways to change the names, but the following is probably the easiest.

1. Select the heading cell in the Pivot Table.
2. Type a new heading.
3. Press the Enter key.

Note: The typed name can't be the same as the original field name. For example, if the original field name is Units, you can't change 'Sum of Units' to 'Units'. However, you can type the original field name, and add a space character at the end, e.g. 'Units ' or at the beginning -- ' Units'

Set up the Pivot Table

At the right is a pivot table which contains monthly sales figures for several products. In the pivot table, Date is in the row area, grouped by month. Product is in the column area, and Units sold, shown as Sum of Units, is in the data area.

We can see the Grand Total for each month, and for each product code.

Currently, there are only Normal calculations in the pivot table, no custom calculations.

No Custom Calculation

Sum of Unit	odu		
Date	A703	B306	Grand Total
Jan	295	398	693
Feb	326	19	345
Mar	120	197	317
Grand Total	741	614	1355

Add a Custom Calculation

To calculate a running total of units sold, for each Product, over the three months, we'll change the Units to a custom calculation.

1. Right-click one of the cells in the Data area, and select *Field Settings...*
2. In the Field Settings dialog box, type a name for the field, e.g. Sales
3. Click the *Options* button, to expand the dialog box
4. From the *Show data as* dropdown list, select *Running Total in*
5. From the *Base field* list, choose *Date*
6. Click the OK button

Running Total in Date

Sum of Unodı			
Date	A703	B306	Grand Total
Jan	295	398	693
Feb	621	417	1038
Mar	741	614	1355
Grand Total			

Note: If you select a base field that isn't in the row or column area, all the results will show a #N/A error. Also, if there's an error in any month's results, it will carry down through the remaining months.

You can now see that there were 621 units of the A703 product sold by the end of February. The Grand Total column shows that 1355 units, of all products, were sold by the end of March.

Change the Base Field

Because you chose Date as the base field, each Product column shows a running total for the year, by month.

If you select Product as the base field, the running total accumulates across the pivot table, in each month row, as shown in the pivot table at the right.

In the February row, you can see that 326 units of the first product were sold. In the next column, you can

Running Total in Product

Sum of Unodı			
Date	A703	B306	Grand Total
Jan	295	693	
Feb	326	345	
Mar	120	317	
Grand Tota	741	1355	

see that 345 units were sold, which includes the B306 units.

Running Totals with Multiple Row Fields

For pivot tables with multiple fields in the row area, the running totals work the same way, but may be harder to follow as the layout becomes more complex.

For example, in the original pivot table in this pivot table tutorial, we could move the Product field to the row area, as you can see in the pivot table at the right. All the original amounts are still shown, but they're all in the same column.

At right is the pivot table as it looks before we add the running totals.

No Custom Calculation

Sum of Units		
Date	Prod	Total
Jan	A703	295
	B306	398
Jan Total		693
Feb	A703	326
	B306	19
Feb Total		345
Mar	A703	120
	B306	197
Mar Total		317
Grand Total		1355

When we add the Running Total custom calculation, with Product moved to the row area, the running total amounts are the same but are arranged vertically, as shown at the right.

In the February section you can see that 621 units of the A703 product sold by the end of that month.

The February total shows the running total for all products, at the end of that month.

Running Total in Date

Sum of Units		
Date	Prod	Total
Jan	A703	295
	B306	398
Jan Total		693
Feb	A703	621
	B306	417
Feb Total		1038
Mar	A703	741
	B306	614
Mar Total		1355
Grand Total		

When we add the Running Total custom calculation, with Product moved to the row area, the running total amounts are the same but are arranged vertically, as shown at the right.

In the February section, you can see that 326 units of the first product were sold. In the next row, you can see that 345 units were sold, which includes the B306 units.

Because the Running Total is by Product, the month totals are blank. The last product in each month shows that month's total units sold.

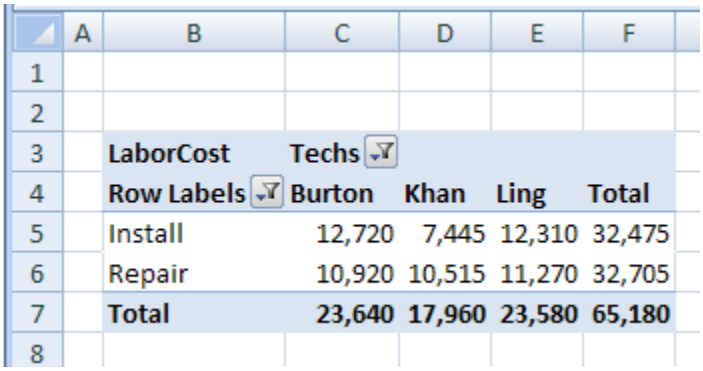
Running Total in Product

Sum of Units		
Date	Prod	Total
Jan	A703	295
	B306	693
Jan Total		
Feb	A703	326
	B306	345
Feb Total		
Mar	A703	120
	B306	317
Mar Total		
Grand Total		

Creating Excel Pivot Table Subtotals

If your pivot table has only one field in the Row Labels area, you won't see any Row subtotals.

In the pivot table shown below, Service is in the Row Labels area, Lead Tech is in the Column Labels area, and Labor Cost is in the Values area. Because Service is the only field in the Row Labels area, it has no subtotal.

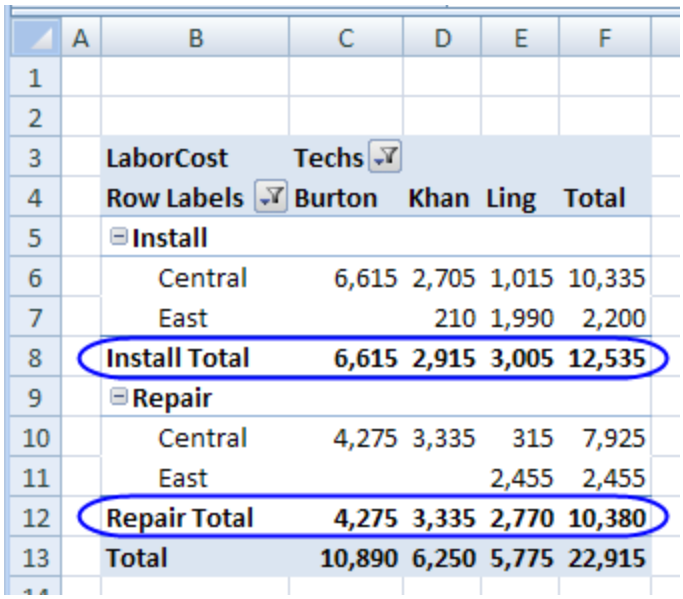


	A	B	C	D	E	F
1						
2						
3		LaborCost	Techs			
4		Row Labels	Burton	Khan	Ling	Total
5		Install	12,720	7,445	12,310	32,475
6		Repair	10,920	10,515	11,270	32,705
7		**Total**	**23,640**	**17,960**	**23,580**	**65,180**
8						

When you add another field to the Row Labels area, a subtotal is automatically created for the first field. In this example, the District field is added to the Row Labels area, below the Service field.

> The Service field is an Outer Field, because there is a field below it (District).
>
> The District field is an Inner Field, because there is NO field below it.

Because Service is now an Outer Field, it automatically has a subtotal after each Service type. Each subtotal shows the name of the Service type, and "Total", such as Install Total.

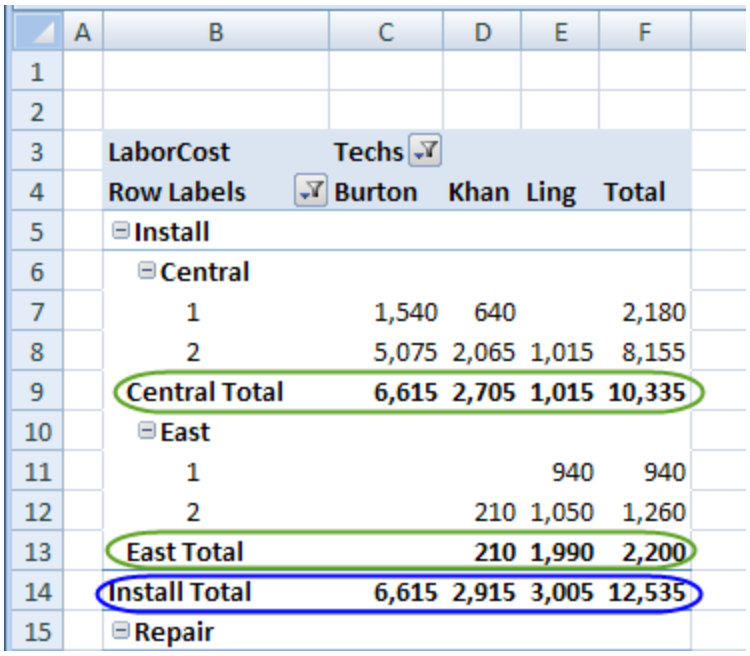


	A	B	C	D	E	F
1						
2						
3		LaborCost	Techs			
4		Row Labels	Burton	Khan	Ling	Total
5		Install				
6		Central	6,615	2,705	1,015	10,335
7		East		210	1,990	2,200
8		Install Total	6,615	2,915	3,005	12,535
9		Repair				
10		Central	4,275	3,335	315	7,925
11		East			2,455	2,455
12		Repair Total	4,275	3,335	2,770	10,380
13		Total	10,890	6,250	5,775	22,915

Add Another Subtotal

If you add another field to the Row Labels area, below the District field, the new field becomes the Inner Field, and District changes to an Outer Field.

In the pivot table below, the Technician Count field was added below District, and the District field now has a subtotal after each District name.



	A	B	C	D	E	F
1						
2						
3		LaborCost	Techs			
4		Row Labels	Burton	Khan	Ling	Total
5		Install				
6		Central				
7		1	1,540	640		2,180
8		2	5,075	2,065	1,015	8,155
9		Central Total	6,615	2,705	1,015	10,335
10		East				
11		1			940	940
12		2		210	1,050	1,260
13		East Total		210	1,990	2,200
14		Install Total	6,615	2,915	3,005	12,535
15		Repair				

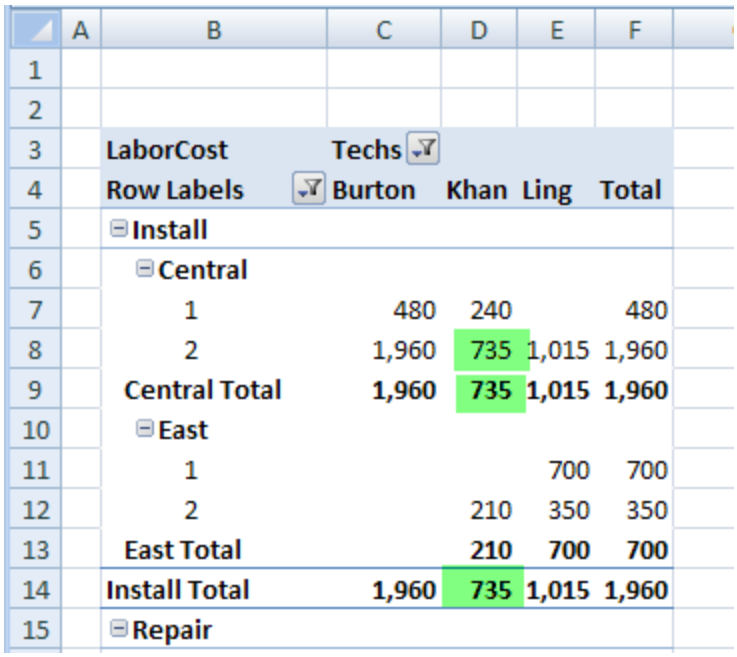
Automatic Subtotal Summary Function

When a subtotal is added to a pivot table, its Summary Function is set to Automatic. With that setting, the subtotal automatically uses the same Summary Function as the Value fields in each column.

In the pivot table shown above, the Value fields are using the SUM function, so the subtotals also show the SUM of the values.

In the pivot table shown below, the Value fields have been changed to the MAX function, so the subtotals also show the MAX of the values. A few of the MAX values are highlighted in green, to show that the values and both subtotals are the same.

Even though the Summary Function has been changed to MAX, each subtotal still shows the name of the item, and "Total", such as Central Total.

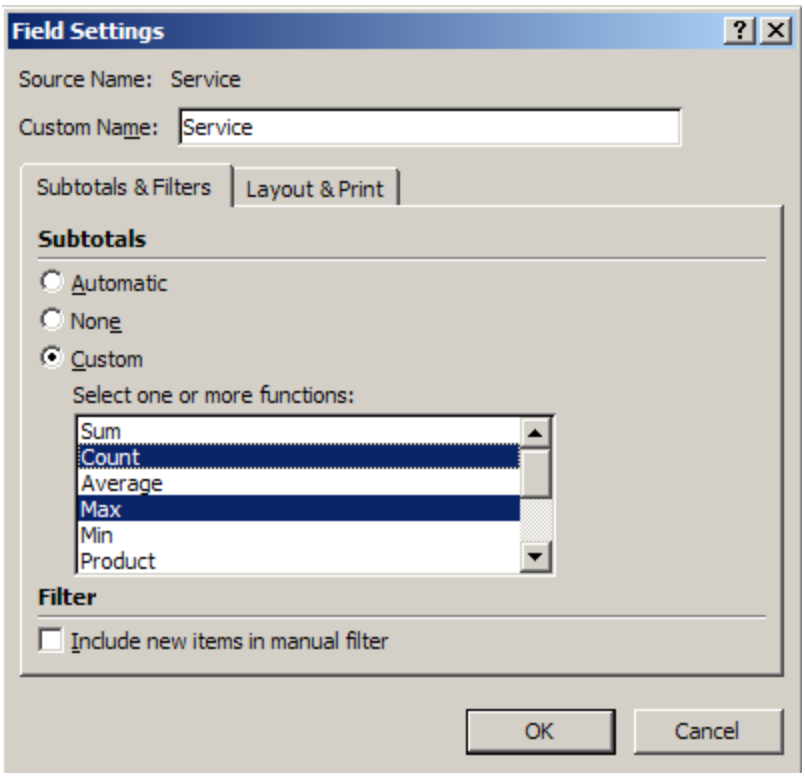


	A	B	C	D	E	F
1						
2						
3		LaborCost	Techs			
4		Row Labels	Burton	Khan	Ling	Total
5		Install				
6		Central				
7		1	480	240		480
8		2	1,960	735	1,015	1,960
9		Central Total	1,960	735	1,015	1,960
10		East				
11		1			700	700
12		2		210	350	350
13		East Total		210	700	700
14		Install Total	1,960	735	1,015	1,960
15		Repair				

Change the Subtotal Summary Function

Instead of using the Automatic setting for subtotals, you can select a Custom setting. To change the setting:

1. Right-click a label for the field in which you want to change the subtotal. In this example, right-click cell B5, which has the Install label.
2. In the pop-up menu, click Field Settings
3. In the Field Settings dialog box, click the Subtotals & Filters tab
4. Under Subtotals, click Custom
5. In the list of Summary Functions, click one or more function names
6. Click OK to close the dialog box.



Show Multiple Subtotals

In the Field Settings dialog box shown above, there are two functions, Count and Max, selected in the list of Summary Functions for the Service field.

After selecting these functions, the pivot table shows two subtotals for each Service type. When you use Custom functions, the subtotal row shows the item name, and the name of the Function, such as Install Count.

The subtotals for District are not changed, nor are the other values in the pivot table.

	A	B	C	D	E	F
1						
2						
3		LaborCost	Techs			
4		Row Labels	Burton	Khan	Ling	Total
5		Install				
6		Central				
7		1	1,540	640		2,180
8		2	5,075	2,065	1,015	8,155
9		Central Total	6,615	2,705	1,015	10,335
10		East				
11		1			940	940
12		2		210	1,050	1,260
13		East Total		210	1,990	2,200
14		Install Count	16	12	10	38
15		Install Max	1,960	735	1,015	1,960

Slicers

Create a slicer in an existing PivotTable

1. Click anywhere in the PivotTable report for which you want to create a slicer.

This displays the **PivotTable** Tools, adding an **Options** and a **Design** tab.

2. On the **Options** tab, in the **Sort & Filter** group, click **Insert Slicer**.

3. In the **Insert Slicers** dialog box, select the check box of the PivotTable fields for which you want to create a slicer.

4. Click **OK**.

A slicer is displayed for every field that you selected.

5. In each slicer, click the items on which you want to filter.

To select more than one item, hold down CTRL, and then click the items on which you want to filter.

Create a standalone slicer

1. On the **Insert** tab, in the **Filter** group, click **Slicer**.

2. In the **Existing Connections** dialog box, in the **Show** box, do one of the following:

- To display all connections, click **All Connections**. This is selected by default.
- To display only the recently used list of connections, click **Connections in this Workbook**.

This list is created from connections that you have already defined, that you have created by using the **Select Data Source** dialog box of the Data Connection Wizard, or that you have previously selected as a connection from this dialog box.

- To display only the connections that are available on your computer, click **Connection files on this computer**.

This list is created from the **My Data Sources** folder that is usually stored in the **My Documents** folder.

- To display only the connections that are available from a connection file that is accessed from the network, click **Connection files on the Network**.

This list is created from a Data Connection Library (DCL) on a Microsoft Office SharePoint Server 2010 or Microsoft SharePoint Server 2010 site. A DCL is a document library in a SharePoint Foundation site that contains a collection of Office Data Connection (ODC) files (.odc). Typically, a DCL is set up by a site administrator, who can also configure the SharePoint site to display ODC files from this DCL in the **External Connections** dialog box.

Tip If you do not see the connection that you want, you can create a connection. Click **Browse for More**, and then in the **Select Data Source** dialog box, click **New Source** to start the Data Connection Wizard so that you can select the data source that you want to connect to.

Note If you select a connection from the **Connection files on the network** or **Connection files on these computer categories**, the connection file is copied into the workbook as a new workbook connection, and is then used as the new connection information.

3. Under **Select a Connection**, click the connection that you want, and then click **Open**.
4. In the **Insert Slicer** dialog box, click the check box of the fields for which you want to create a slicer.
5. Click **OK**.

A slicer is created for every field that you selected.

Format a slicer

1. Click the slicer that you want to format.

This displays the **Slicer Tools**, adding an **Options** tab.

2. On the **Options** tab, in the **Slicer Styles** group, click the style that you want.

To see all available styles, click the **More** button .

Share a slicer by connecting to another PivotTable

You can share a slicer with another PivotTable by connecting it to that PivotTable. You can also insert a slicer from another PivotTable by connecting to that PivotTable.

Make a slicer available for use in another PivotTable

1. Click the slicer that you want to share in another PivotTable.

This displays the **Slicer Tools**, adding an **Options** tab.

2. On the **Options** tab, in the **Slicer** group, click **PivotTable Connections**.

3. In the **PivotTable Connections** dialog box, select the check box of the PivotTables in which you want the slicer to be available.

Use a slicer from another PivotTable

1. Create a connection to the PivotTable that contains the slicer that you want to share by doing the following:

1. On the **Data** tab, in the **Get External Data** group, click **Existing Connections**

2. In the **Existing Connections** dialog box, in the **Show** box, make sure that **All Connections** is selected.

Tip If you do not see the connection that you want, you can create a connection. Click **Browse for More**, and then in the **Select Data Source** dialog box, click **New Source** to start the Data Connection Wizard so that you can select the data source that you want to connect to.

3. Select the connection that you want, and then click **Open**.

4. In the **Import Data** dialog box, under **Select how you want to view this data in your workbook**, click **PivotTable Report**.

2. Click anywhere in the PivotTable report for which you want to insert a slicer from another PivotTable.

This displays the **PivotTable** Tools, adding an **Options** and a **Design** tab.

3. On the **Options** tab, in the **Sort & Filter** group, click the **Insert Slicer** arrow, and then click **Slicer Connections**.

4. In the **Slicer Connections** dialog box, select the check box of the slicers that you want to use.

5. Click **OK**.

6. In each slicer, click the items on which you want to filter.

To select more than one item, hold down CTRL, and then click the items that you want to filter.

Note All PivotTables that share the slicer will instantly display the same filtering state.

Disconnect or delete a slicer

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

Disconnect a slicer

1. Click anywhere in the PivotTable report for which you want to disconnect a slicer.

This displays the **PivotTable** Tools, adding an **Options** and a **Design** tab.

2. On the **Options** tab, in the **Sort & Filter** group, click the **Insert Slicer** arrow, and then click **Slicer Connections**.

3. In the **Slicer Connections** dialog box, clear the check box of any PivotTable fields for which you want to disconnect a slicer.

Delete a slicer

Do one of the following:

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

Calculated Fields

Create formulas in a PivotTable report

Important You cannot create formulas in a PivotTable report that is connected to an Online Analytical Processing (OLAP) (OLAP: A database technology that has been optimized for querying and reporting, instead of processing transactions. OLAP data is organized hierarchically and stored in cubes instead of tables.) data source.

Before you start, decide whether you want a calculated field or a calculated item within a field. Use a calculated field when you want to use the data from another field in your formula. Use a calculated item when you want your formula to use data from one or more specific items (item: A subcategory of a field in PivotTable and PivotChart reports. For instance, the field "Month" could have items such as "January," "February," and so on.) within a field.

For calculated items, you can enter different formulas cell by cell. For example, if a calculated item named **OrangeCounty** has a formula of **=Oranges * .25** across all months, you can change the formula to **=Oranges *.5** for June, July, and August.

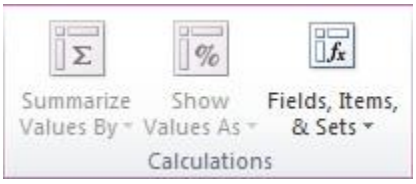
If you have multiple calculated items or formulas, you can adjust the order of calculation.

Add a calculated field

1. Click the PivotTable report.

This displays the PivotTable Tools, adding the **Options** and **Design** tabs.

2. On the **Options** tab, in the **Calculations** group, click **Fields, Items, & Sets**, and then click **Calculated Field**.



3. In the **Name** box, type a name for the field.

4. In the **Formula** box, enter the formula for the field.

To use the data from another field in the formula, click the field in the **Fields** box, and then click **Insert Field**. For example, to calculate a 15% commission on each value in the Sales field, you could enter **= Sales * 15%**.

5. Click **Add**.

Add a calculated item to a field

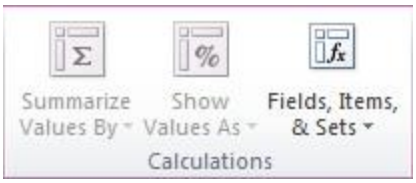
1. Click the PivotTable report.

This displays the PivotTable Tools, adding the **Options** and **Design** tabs.

2. If items in the field are grouped, on the **Options** tab, in the **Group** group, click **Ungroup**.

3. Click the field where you want to add the calculated item.

4. On the **Options** tab, in the **Calculations** group, click **Fields, Items, & Sets**, and then click **Calculated Item**.



5. In the **Name** box, type a name for the calculated item.

6. In the **Formula** box, enter the formula for the item.

To use the data from an item in the formula, click the item in the **Items** list, and then click **Insert Item** (the item must be from the same field as the calculated item).

7. Click **Add**.

Enter different formulas cell by cell for calculated items

1. Click a cell for which you want to change the formula.

To change the formula for several cells, hold down CTRL and click the additional cells.

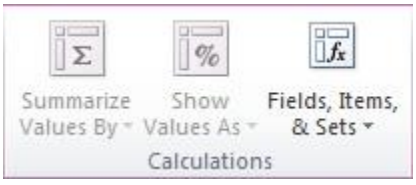
2. In the formula bar (formula bar: A bar at the top of the Excel window that you use to enter or edit values or formulas in cells or charts. Displays the constant value or formula stored in the active cell.), type the changes to the formula.

Adjust the order of calculation for multiple calculated items or formulas

1. Click the PivotTable report.

This displays the PivotTable Tools, adding the **Options** and **Design** tabs.

2. On the **Options** tab, in the **Calculations** group, click **Fields, Items, & Sets**, and then click **Solve Order**.



3. Click a formula, and then click **Move Up** or **Move Down**.

4. Continue until the formulas are in the order that you want them to be calculated.

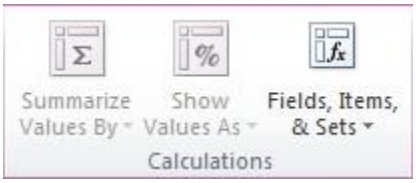
View all formulas that are used in a PivotTable report

You can display a list of all the formulas that are used in the current PivotTable report.

1. Click the PivotTable report.

This displays the PivotTable Tools, adding the **Options** and **Design** tabs.

2. On the **Options** tab, in the **Calculations** group, click **Fields, Items, & Sets**, and then click **List Formulas**.



Edit a PivotTable formula

Before you edit a formula, determine whether that formula is in a calculated field or a calculated item. If the formula is in a calculated item, also determine whether the formula is the only one for the calculated item.

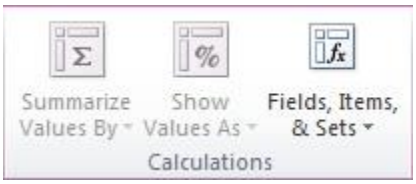
For calculated items, you can edit individual formulas for specific cells of a calculated item. For example, if a calculated item named **OrangeCalc** has a formula of **=Oranges * .25** across all months, you can change the formula to **=Oranges *.5** for June, July, and August.

Determine whether a formula is in a calculated field or a calculated item

1. Click the PivotTable report.

This displays the PivotTable Tools, adding the **Options** and **Design** tabs.

2. On the **Options** tab, in the **Calculations** group, click **Fields, Items, & Sets**, and then click **List Formulas**.



3. In the list of formulas, find the formula that you want to change listed under Calculated Field or Calculated Item.

   When there are multiple formulas for a calculated item, the default formula that was entered when the item (item: A subcategory of a field in PivotTable and PivotChart reports. For instance, the field "Month" could have items such as "January," "February," and so on.) was created has the calculated item name in column B. For additional formulas for a calculated item, column B contains both the calculated item name and the names of intersecting items.

For example, you might have a default formula for a calculated item named **MyItem**, and another formula for this item identified as **MyItem January Sales**. In the PivotTable report, you would find this formula in the Sales cell for the MyItem row and January column.

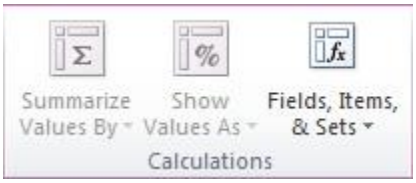
4. Continue by using one of the following editing methods.

Edit a calculated field formula

1. Click the PivotTable report.

This displays the PivotTable Tools, adding the **Options** and **Design** tabs.

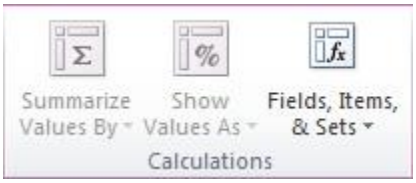
2. On the **Options** tab, in the **Calculations** group, click **Fields, Items, & Sets**, and then click **Calculated Field**.



3. In the **Name** box, select the calculated field for which you want to change the formula.
4. In the **Formula** box, edit the formula.
5. Click **Modify**.

Edit a single formula for a calculated item

1. Click the field that contains the calculated item.
2. On the **Options** tab, in the **Calculations** group, click **Fields, Items, & Sets**, and then click **Calculated Item**.



3. In the **Name** box, select the calculated item.
4. In the **Formula** box, edit the formula.
5. Click **Modify**.

Edit an individual formula for a specific cell of a calculated item

1. Click a cell for which you want to change the formula.

To change the formula for several cells, hold down CTRL and click the additional cells.

2. In the formula bar, type the changes to the formula.

Tip If you have multiple calculated items or formulas, you can adjust the order of calculation. For more information, see Adjust the order of calculation for multiple calculated items or formulas.

Delete a PivotTable formula

Note Deleting a PivotTable formula removes it permanently. If you do not want to remove a formula permanently, you can hide the field or item instead by dragging it out of the PivotTable report.

1. Determine whether the formula is in a calculated field or a calculated item.

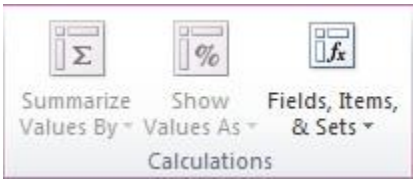
Calculated fields appear in the PivotTable Field List. Calculated items appear as items within other fields.

2. Do one of the following:

   - To delete a calculated field, click anywhere in the PivotTable report.
   - To delete a calculated item, in the PivotTable, click the field that contains the item that you want to delete.

This displays the PivotTable Tools, adding the **Options** and **Design** tabs.

3. On the **Options** tab, in the **Calculations** group, click **Fields, Items, & Sets**, and then click **Calculated Field** or **Calculated Item**.



4. In the **Name** box, select the field or item that you want to delete.

5. Click **Delete**.

Reverse a pivot table

Alt D + P

Pivot table chart wizard

How to Create a Reverse PivotTable

There comes a time when you are presented with data in a cross-tabular format but your analysis requires that the data be formatted into a traditional table (or normalized) structure.

Your report is in this format…

Sum of Tons					
	Anthracite	Bituminous	Lignite	Subbituminous	Grand Total
Belle Ayr		779,923			779,923
Cucumber	785,923		358,989	2,817,032	3,961,944
Eagle Butte	376,095	890,985		201,640	1,468,720
Emerald	801,398		621,013	188,436	1,610,847
Enterprise	218,721	878,975	593,225		1,690,921
Kingston	350,245	1,212,852	752,903	493,931	2,809,931
Seven Pines		1,731,600	908,512	1,213,401	3,853,513
Grand Total	**2,532,382**	**5,494,335**	**3,234,642**	**4,914,440**	**16,175,799**

… but you need it to be in THIS format.

Mine Site	Coal Type	Tons
Belle Ayr	Bituminous	779,923
Cucumber	Anthracite	785,923
Cucumber	Subbituminous	996,786
Cucumber	Lignite	358,989
Cucumber	Subbituminous	909,104
Cucumber	Subbituminous	911,142
Eagle Butte	Subbituminous	201,640
Eagle Butte	Anthracite	376,095
Eagle Butte	Bituminous	890,985
Emerald	Anthracite	299,775
Emerald	Subbituminous	188,436
Emerald	Anthracite	501,623
Emerald	Lignite	621,013
Enterprise	Lignite	593,225
Enterprise	Bituminous	754,311
Enterprise	Bituminous	124,664
Enterprise	Anthracite	218,721
Kingston	Bituminous	524,299
Kingston	Lignite	752,903
Kingston	Subbituminous	493,931
Kingston	Bituminous	688,553
Kingston	Anthracite	144,102
Kingston	Anthracite	206,143
Seven Pines	Bituminous	123,584
Seven Pines	Subbituminous	634,315
Seven Pines	Bituminous	884,582
Seven Pines	Bituminous	723,434
Seven Pines	Lignite	908,512

How can this be achieved?

The answer is simpler than you may think.

The first thing you need to do is access a tool that, prior to Excel 2010, was fairly easy to reach.

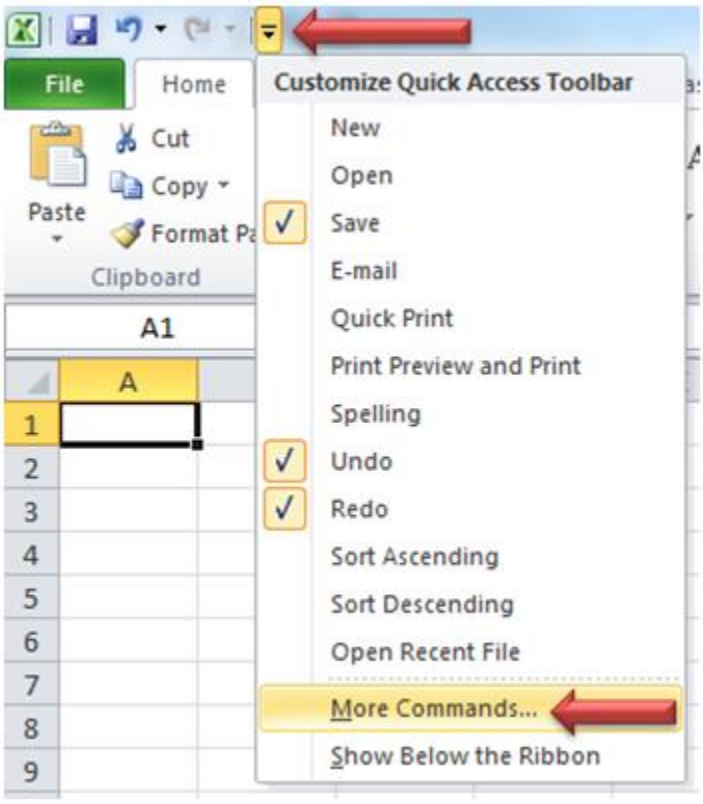
It has now been pushed into the background of Excel 2010 and Excel 2010; **that tool is the Pivot Table and Pivot Chart Wizard**.

This used to be the de facto standard tool for building Pivot Tables and Pivot Charts prior to the 2010 redesign.

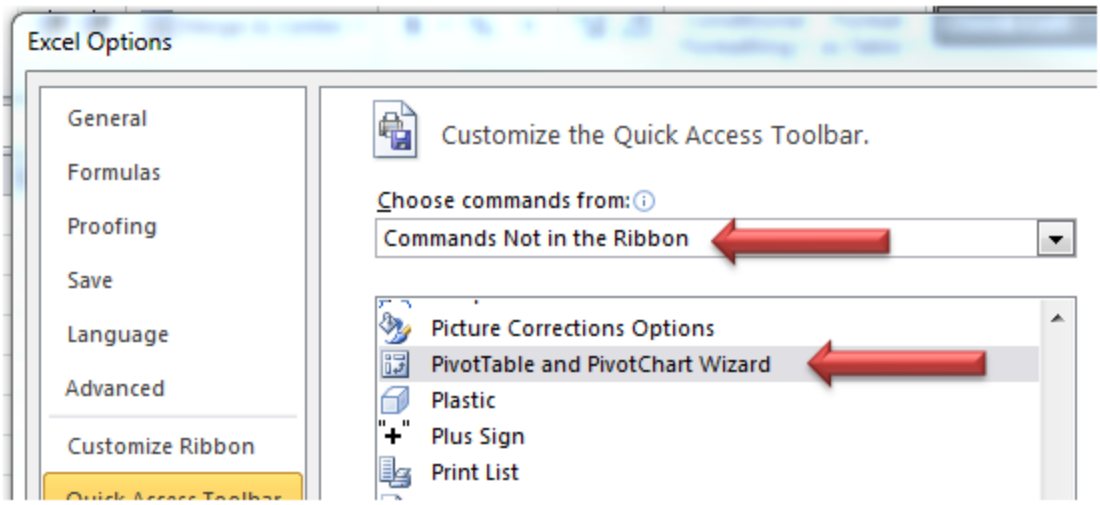
The tool still exists within Excel, you just have to dig a bit to find its hiding place.

Part A: Load the Pivot Table and Pivot Chart Wizard into your Quick Access Toolbar

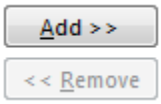
1. Click the small down arrow to the right of the Quick Access Toolbar (top left corner of Excel) and select **More Commands…**



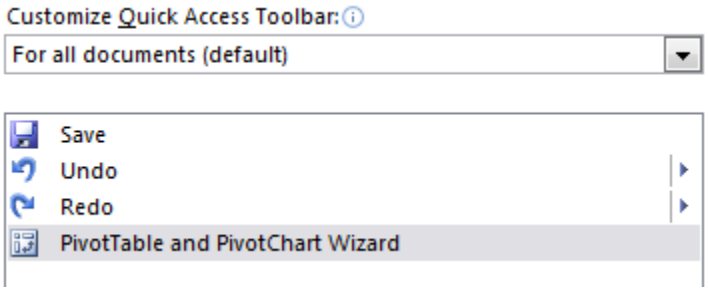
2. Click the dropdown arrow next to **Choose commands from:** and select **Commands Not in the Ribbon**. This will produce a list of Excel features not located on the Ribbon. Scroll down and select **PivotTable and PivotChart Wizard**.



3. Click the **Add >>** button in the middle of the Excel Options dialog box.



This will place the **PivotTable and PivotChart Wizard** feature in the right column of selected Quick Access Toolbar features.

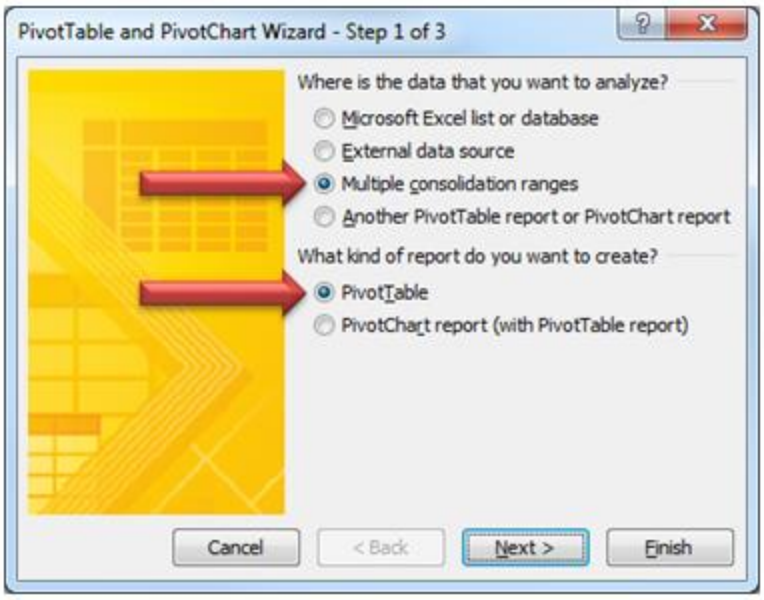


4. Click **OK** to continue.

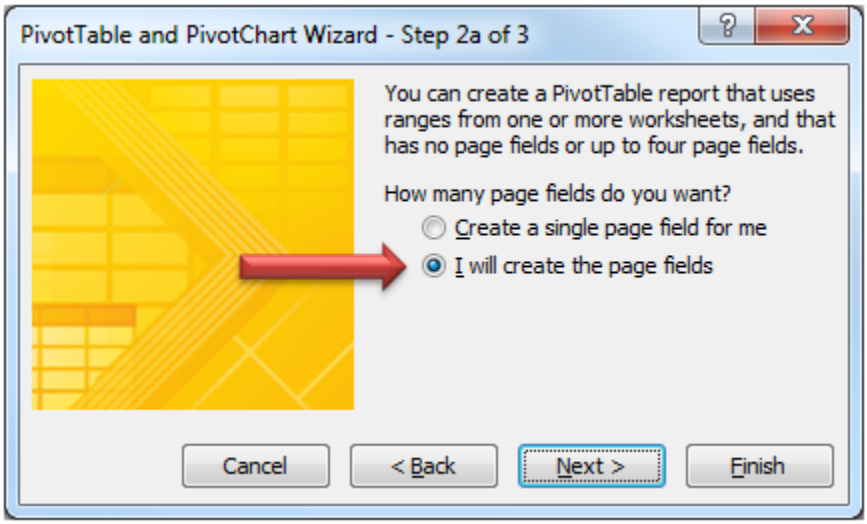
Part B: Reverse the Pivot

1. Click the PivotTable and PivotChart Wizard button on the Quick Access Toolbar

2. In Step 1 of the wizard, select **Multiple Consolidated Ranges** from the top question and **PivotTable** from the bottom question then click **Next >**.

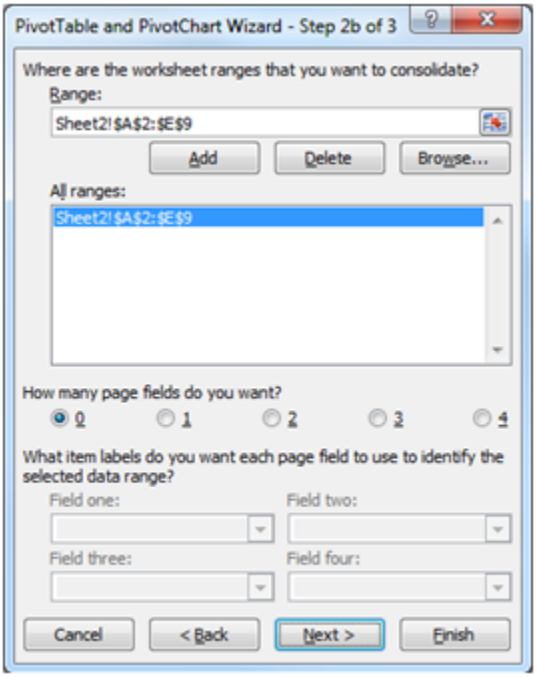


3. In Step 2 of the wizard, select **I will create the page fields** and then click **Next >**.

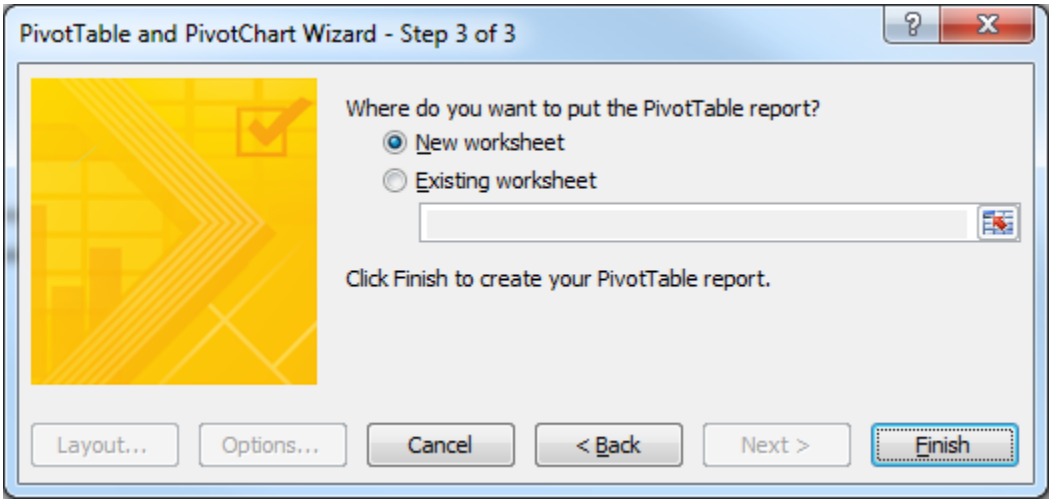


4. With your cursor in the **Range:** field, highlight the area of data you are wishing to convert to a table and then click the **Add** button. **IMPORTANT: DO NOT highlight any total columns or rows that may be to the right or below the data. In this example, the selected data would start in cell A2 and end in cell E9.** Finish this step by clicking **Next >**.

	A	B	C	D	E	F
1	Sum of Tons					
2		Anthracite	Bituminous	Lignite	Subbituminous	Grand Total
3	Belle Ayr		779,923			779,923
4	Cucumber	785,923		358,989	2,817,032	3,961,944
5	Eagle Butte	376,095	890,985		201,640	1,468,720
6	Emerald	801,398		621,013	188,436	1,610,847
7	Enterprise	218,721	878,975	593,225		1,690,921
8	Kingston	350,245	1,212,852	752,903	493,931	2,809,931
9	Seven Pines		1,731,600	908,512	1,213,401	3,853,513
10	Grand Total	2,532,382	5,494,335	3,234,642	4,914,440	16,175,799



5. In step 3 of the wizard, select **New Worksheet** and then click **Finish**.



This will produce a new pivot table similar to the one below. Do not worry about any of the numbers or layout; this is an intermediate step that will be discarded in the end.

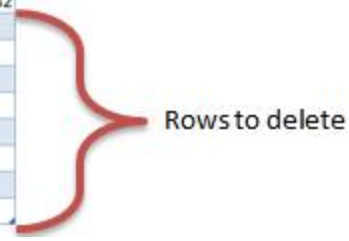
Count of Value	Column Labels				
Row Labels	Anthracite	Bituminous	Lignite	Subbituminous	Grand Total
Belle Ayr		1			1
Cucumber	1		1	1	3
Eagle Butte	1	1		1	3
Emerald	1		1	1	3
Enterprise	1	1	1		3
Kingston	1	1	1	1	4
Seven Pines		1	1	1	3
Grand Total	**5**	**5**	**5**	**5**	**20**

6. Double click on the Grand Total number (in this example, the number 20 in the lower right). This will generate your normalized table as seen below.

Row	Column	Value
Belle Ayr	Anthracite	
Belle Ayr	Bituminous	779923
Belle Ayr	Lignite	
Belle Ayr	Subbituminous	
Cucumber	Anthracite	785923
Cucumber	Bituminous	
Cucumber	Lignite	358989
Cucumber	Subbituminous	2817032
Eagle Butte	Anthracite	376095
Eagle Butte	Bituminous	890985
Eagle Butte	Lignite	
Eagle Butte	Subbituminous	201640
Emerald	Anthracite	801398
Emerald	Bituminous	
Emerald	Lignite	621013
Emerald	Subbituminous	188436
Enterprise	Anthracite	218721
Enterprise	Bituminous	878975
Enterprise	Lignite	593225
Enterprise	Subbituminous	
Kingston	Anthracite	350245
Kingston	Bituminous	1212852
Kingston	Lignite	752903
Kingston	Subbituminous	493931
Seven Pines	Anthracite	
Seven Pines	Bituminous	1731600
Seven Pines	Lignite	908512
Seven Pines	Subbituminous	1213401

Because not every row category contains a corresponding column category entry, those entries have no values. You can either filter out the “Blanks” or sort the list by value and then delete the rows with no values.

Row	Column	Value
Emerald	Subbituminous	188436
Eagle Butte	Subbituminous	201640
Enterprise	Anthracite	218721
Kingston	Anthracite	350245
Cucumber	Lignite	358989
Eagle Butte	Anthracite	376095
Kingston	Subbituminous	493931
Enterprise	Lignite	593225
Emerald	Lignite	621013
Kingston	Lignite	752903
Belle Ayr	Bituminous	779923
Cucumber	Anthracite	785923
Emerald	Anthracite	801398
Enterprise	Bituminous	878975
Eagle Butte	Bituminous	890985
Seven Pines	Lignite	908512
Kingston	Bituminous	1212852
Seven Pines	Subbituminous	1213401
Seven Pines	Bituminous	1731600
Cucumber	Subbituminous	2817032
Belle Ayr	Anthracite	
Belle Ayr	Lignite	
Belle Ayr	Subbituminous	
Cucumber	Bituminous	
Eagle Butte	Lignite	
Emerald	Bituminous	
Enterprise	Subbituminous	
Seven Pines	Anthracite	



Notes: