

Microsoft Excel 2010

Pivot Tables & Pivot Table Charts

A **pivot table report** allows you to analyze and summarize a million rows of data in Excel 2010 without entering a single formula. Pivot Tables let you select data fields to compare, or “pivot”, your information in ways that pare down large data tables into specific, useful summaries using filtering and sorting options. Pivot tables are incredibly flexible, and there are hundreds of different styles of reports you can create. Pivot Tables have **Report Zones** that control the page layout for the report.

Pivot Charts are a visual representation of Pivot Table results, displaying summaries in a variety of chart and graph formats. Pivot Charts make it easy to identify important trends and present this data to others. Like PivotTables, PivotCharts are much easier to create in the new user interface. All of the filtering improvements are also available for PivotCharts. When you create a PivotChart, specific PivotChart tools and context menus are available so that you can analyze the data in the chart. You can also change the layout, style, and format of the chart or its elements the same way that you can for a regular chart. In Office Excel 2010, the chart formatting that you apply is preserved when you make changes to the PivotChart, which is an improvement over the way it worked in earlier versions of Excel.

The screenshot displays an Excel spreadsheet with a PivotTable and a PivotChart. The PivotTable is located in the range A3:E14, with 'Sum of Total Income' as the value field, 'Central' as the column label, and 'North', 'South', and 'Grand Total' as the row labels. The PivotChart is a horizontal bar chart located in the range A17:F30, showing the distribution of 'Sum of Total Income' across 'North', 'South', and 'Central' regions for various products. The PivotTable Field List task pane is on the right, showing the available fields for the report. The Filter Pane task pane is also visible, showing the active fields on the PivotChart. The Report Zones task pane is at the bottom right, showing the layout of the report.

Row Labels	Central	North	South	Grand Total
Baseballs	3100	1100	700	4900
Basketballs	2400	3240	2040	7680
Exercise Machines	37200	24000	42800	104000
Footballs	6900	14250	8100	29250
Gloves	13560	6360	11640	31560
Golf Balls	22600	24400	25800	72800
Rowing Machines	12870	9555	15405	37830
Stepper Machines	9570	4950	7590	22110
Tennis Balls	5460	3360	4860	13680
Grand Total	113660	91215	118935	323810

PivotTable Field List

Choose fields to add to report:

- Region
- Product
- Inv Num
- Sales Rep
- Date Sold
- Price Each
- Qty Sold
- Total Income

Filter Pane

PivotChart Filter Pane

Active Fields on the PivotChart

Report Filter

Axis Fields (Categories)

Product

Legend Fields (Series)

Region

Values

Sum of Total Income

Report Zones

Drag fields:

- Report Filter
- Column Labels
- Row Labels
- Values

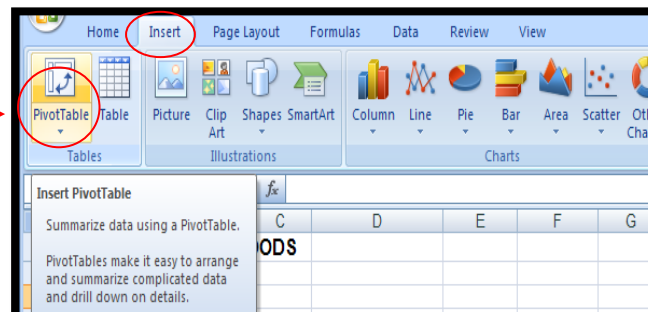
Defer Layout Update

Creating a Pivot Table

PivotTables and PivotCharts are most useful when applied to large tables of raw data. The requirement is that you have unique headings in the first row, and no blank rows or blank columns in the data. For best results, keep your numeric columns filled with numeric data and replace any blank cells with a zero. The column labels will be used by the PivotTable to identify and name data fields

Region	Product	Inv Num	Sales Rep	Date Sold	Price Each	Qty Sold	Total Income
South	Rowing Machines	101	Ernest Feldgus	9-Jan-07	195	4	780
North	Rowing Machines	102	Terry Caracio	16-Jan-07	195	4	780
Central	Rowing Machines	103	Terry Caracio	30-Jan-07	195	2	390
South	Rowing Machines	104	Fred Edwards	2-Feb-07	195	6	1170
Central	Golf Balls	105	Alice Abramas	2-Jan-07	20	20	400
South	Golf Balls	106	Ernest Feldgus	4-Jan-07	20	35	700
South	Golf Balls	107	Fred Edwards	11-Jan-07	20	15	300
North	Golf Balls	108	Terry Caracio	18-Jan-07	20	11	220
North	Golf Balls	109	Susan Edwards	19-Jan-07	20	20	400
North	Golf Balls	110	John Carpenter	26-Jan-07	20	1	20

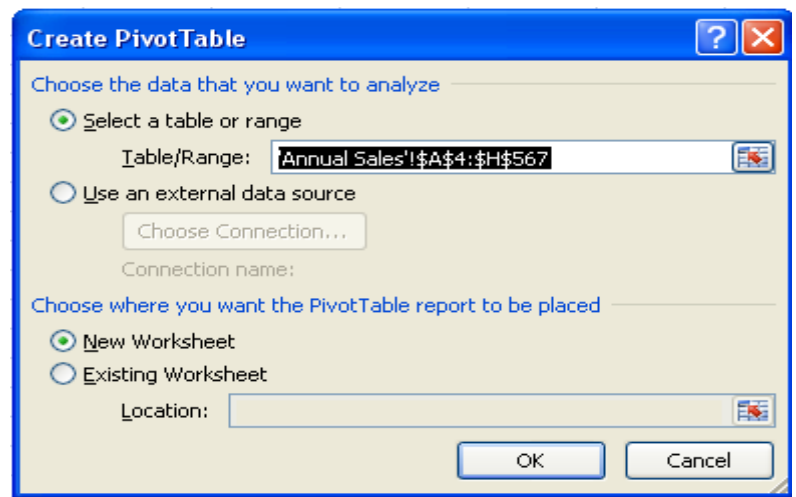
1. Select one cell in the dataset
2. From the **Insert ribbon**, choose the top half of the PivotTable icon.
3. Excel will predict that your data includes the current region around your selected cell. Make sure that this is what you want and then click OK.



The “create pivot table” window opens with the table showing the range of cells in the data set. By default the pivot table will be created on a new worksheet.

4. To include a field in the pivot table summary, simply checkmark the field in the Pivot Table Field List.
5. Text Fields will automatically be added to the **Row Label Zone**.

Numeric fields will be added to the **Values Zone**



This report shows the **Products** in the row labels zone, the **Region** in the column labels zone and the data is summarized using the **Sun Function** in the values zone. The **Sales Rep** field has been placed in the Report Filter zone. One could create a query to analyze the activity of one particular Sales Rep.

It is easy to change a pivot table report. Simply check or uncheck fields in the top half of the Pivot Table field list. You can always rearrange the order of fields by dragging the fields around the bottom half of the field list.

Row Labels	Central	North	South	Grand Total
Baseballs	310	120	70	500
Basketballs	240	320	204	764
Exercise Machines	36036	24000	42800	102836
Footballs	690	1425	1965	4080
Gloves	1356	636	1173	3165
Golf Balls	2260	2440	2556	7256
Rowing Machines	12870	9555	14880	37305
Stepper Machines	9570	4950	7590	22110
Tennis Balls	546	336	486	1368
Grand Total	63878	43782	71724	179384

Filtering or Sorting Data in a Pivot Table

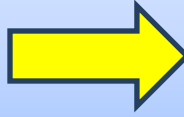
The Sales Rep field has been placed in the **Report Filter zone**. As you can see from the example on the right, all of the Sales Reps are represented in the report but if you wanted to analyze the performance of only “1” rep, you could uncheck all and select only those reps you want to see in the report. One of the new features to pivot tables is the option to select multiple items to query.

Row Labels	North	South	Grand Total
Baseballs	120	70	500
Basketballs	320	204	764
Exercise Machines	24000	42800	102836
Footballs	1425	1965	4080
Gloves	636	1173	3165
Golf Balls	2440	2556	7256
Rowing Machines	9555	14880	37305
Stepper Machines	4950	7590	22110
Tennis Balls	336	486	1368
Grand Total	43782	71724	179384

When you “hover” your mouse over a field in one of the zones, you’ll see a menu that offers choices where you can sort or filter the field. Use filters to narrow the range of information displayed in a PivotTable report. Filtering is a good way to emphasize or ‘get at’ important or relevant information within a larger set of data. Label filters will allow you to filter using comparative criteria.

New to Excel 2010 Pivot Tables

Slicers



Slicers are visual filters that can be attached to PivotTables, PivotCharts, and other data sources

	A	B	C	D	E	F	G	H
1	Sales Rep	(All)						
2								
3	Product	Region	Sum of Total Income					
4	Baseballs	Central	310					
5		North	120					
6		South	70					
7	Baseballs Total		500					
8	Basketballs	Central	240					
9		North	320					
10		South	204					
11	Basketballs Total		764					
12	Exercise Machines	Central	36036					
13		North	24000					
14		South	42800					
15	Exercise Machines Total		102836					
16	Footballs	Central	690					
17		North	1425					
18		South	1965					
19	Footballs Total		4080					
20	Gloves	Central	1356					
21		North	636					
22		South	1173					
23	Gloves Total		3165					
24	Golf Balls	Central	2260					
25		North	2440					
26		South	2556					
27	Golf Balls Total		7256					
28	Rowing Machines	Central	12870					

1. Click on the Insert Tab and click Slicer in the filter group.
2. In the Insert Slicers dialog box, check the box beside each field you want to create a slicer for. Click OK to place the slicer box(es) on your worksheet
3. In the slicer box, click a button to filter the data

	A	B	C	D	E	F	G	H
1	Sales Rep	(All)						
2								
3	Product	Region	Sum of Total Income					
4	Baseballs	Central	310					
5		North	120					
6		South	70					
7	Baseballs Total		500					
8	Basketballs	Central	240					
9		North	320					
10		South	204					
11	Basketballs Total		764					
12	Exercise Machines	Central	36036					
13		North	24000					
14		South	42800					
15	Exercise Machines total		102836					
16	Footballs	Central	690					
17		North	1425					

To remove a slicer filter: click the "remove filter" icon in the slicer box.

To edit slicer properties: right-click the slicer and choose Slicer Settings from the menu. Make changes and click OK.

Tip: More slicer options, including a style gallery, are available under the Options tab, which appears on the ribbon.

Designing PivotTables

Changing a PivotTable's visual elements can highlight areas of particular interest or make the table more presentation-ready. When the PivotTable is active there will be "2" additional PivotTable tools available: **Options and Design**. In the Options mode there are designated categories that allow you to display or remove field headers, or to group dates into months and years. In Options you can create filtered report pages based on fields in the report filter zone.

PivotTable Options Data Summary & Field Settings Grouping Sections of Data Additional Sort Options Refreshing Data Edit and Navigation Options PivotChart Functions Field Navigation

PivotTable Name: Active Field: Sum of Total Income

PivotTable1

Options

Field Settings

Group Selection

Ungroup

Group Field

Sort

Refresh

Change Data Source

Clear

Select

Move PivotTable

PivotChart

Formulas

OLAP tools

Field List

+/- Buttons

Field Headers

Show/Hide

C19 4080

Product	Region	Sum of Total Income
Baseballs	Central	310
	North	190
	South	70
Baseballs Total		500
Basketballs	Central	240
	North	320
	South	204
Basketballs Total		764
Exercise Machines	Central	36036
	North	24000
	South	42800
Exercise Machines Total		102836
Footballs	Central	690
	North	1425
	South	1965
Footballs Total		4080
Gloves	Central	1356
	North	636
	South	1173
Gloves Total		3165
Golf Balls	Central	2260
	North	2440
	South	2556
Golf Balls Total		7256
Rowing Machines	Central	12870
	North	9555
	South	14880
Rowing Machines Total		37305
Stenner Machines	Central	9670

PivotTable Field List

Choose fields to add to report:

Region

Product

Inv Num

Sales Rep

Date Sold

Price Each

Qty Sold

Total Income

Drag fields between areas below:

Report Filter: Sales Rep

Column Labels: Product, Sum of Total ...

Row Labels: Region

Values: Sum of Total ...

Defer Layout Update Update

The table to the right shows the date field as entered in the database. Select one of the cells with a date and choose Group Field from the PivotTable Tools Options ribbon.

You will see the **Grouping** window displayed. You can choose how to summarize your dates; you can select years, quarters, months AND you can group "days" in a range of dates. An example would be looking at invoices in a "7" day range. An added advantage is that you've created new fields that can enhance the report.

PivotTable Name: Active Field: Date Sold

PivotTable1

Options

Field Settings

Group Selection

Ungroup

Group Field

Sort

Refresh

Change Data Source

Clear

Sort

Data

C3 Date Sold

Product	Region	Date Sold	Sum of Total Income
Baseballs	Central	5-Jan-07	60
		22-Jan-07	20
		23-Jan-07	200
		15-Feb-07	30
Central Total			310
North		8-Feb-07	100
		16-Feb-07	20
North Total			120
South		4-Jan-07	50
		1-Feb-07	20
South Total			70
Baseballs Total			500
Basketballs	Central	4-Jan-07	96
		14-Feb-07	144
Central Total			240
North		2-Jan-07	180
		6-Feb-07	120

Grouping

Auto

Starting at: 1/2/2007

Ending at: 1/1/2008

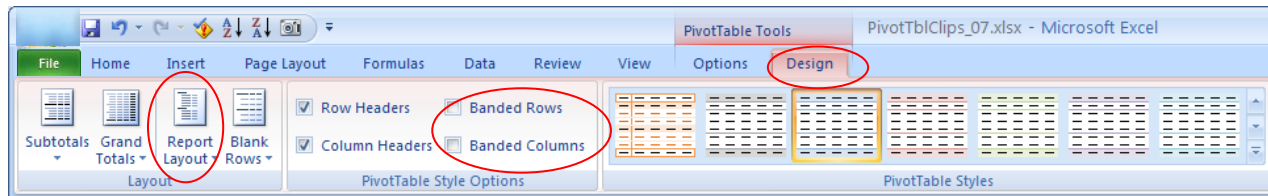
By: Months

Number of days: 1

OK Cancel

PivotTable Design Tools

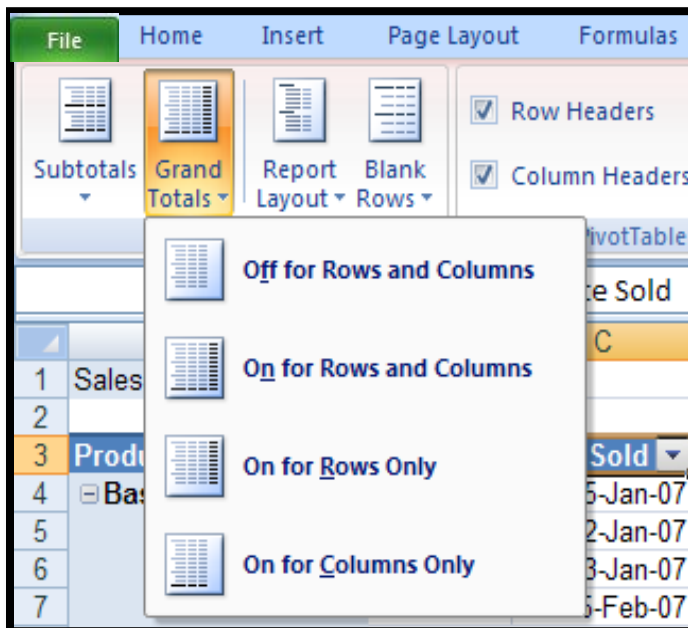
The Design ribbon offers a gallery where you can quickly apply a format to the pivot table. To change a PivotTable's visual style, click anywhere in the PivotTable to select it. In the Under the design tab, click on a thumbnail from the Pivot Table styles gallery to choose a new style. Click "here" to open a window with more options. In 2007 you get "live preview", where the format is applied to you report as a preview.



	A	B	C	D
1	Sales Rep	(All)		
2				
3	Product	Region	Date Sold	Sum of Total Income
4	Baseballs	Central	5-Jan-07	60
5			22-Jan-07	20
6			23-Jan-07	200
7			15-Feb-07	30
8		Central Total		310
9		North	8-Feb-07	100
10			16-Feb-07	20
11		North Total		120
12		South	4-Jan-07	50
13			1-Feb-07	20
14		South Total		70

To change a PivotTable's layout: click anywhere in the PivotTable to select it. Under the design tab click **Report Layout** in the report layout group.

To add **banded rows or columns** to a PivotTable: click anywhere in the PivotTable to select it. Under the design tab click **Banded Rows** and **Banded Columns** check box in the PivotTable style options group.



To display or remove grand totals in a PivotTable report: click anywhere in the PivotTable to select it. Under the design tab click **Grand Totals** in the Layout group and choose the desired option from the menu.

To add a blank line between groups: click anywhere in the PivotTable to select it. Under the design tab click **Blank Rows** in the layout group and choose **Insert Blank Line after Each Item** from the menu. To remove blank lines, choose **Remove Blank Line after Each Item** from the menu.

Creating a Basic PivotChart

PivotCharts provide a graphic representation of data relationships and trends, drawn from the way information is arranged in a PivotTable report.

To add a PivotChart: click anywhere in an existing PivotTable to select it. Under the options tab click **PivotChart** in the **Tools** group.

In the **Insert Chart** dialog box, select a desired chart type (**column, line, pie**). Click ok to insert the selected chart. When you select the PivotChart, the **PivotChart Filter Pane** will display by default. Once your chart is active, you will have “3” tabs in Chart Tools; Design, Layout, and Format, where you can format PivotCharts and add or remove PivotChart Elements.

The screenshot illustrates the process of creating a PivotChart in Excel. It shows a PivotTable with columns for Product, Region, Date Sold, and Sum of Total Income. The PivotTable is filtered by Sales Rep (All) and Product (Baseballs). The PivotChart is a 3D pie chart titled "Central" showing the distribution of products. The PivotChart Filter Pane is visible on the right, showing the active fields and filters.

Product	Region	Date Sold	Sum of Total Income
Baseballs	Central	5-Jan-07	
		22-Jan-07	
		23-Jan-07	
		15-Feb-07	
Central Total			
	North	8-Feb-07	
		16-Feb-07	
North Total			
	South	4-Jan-07	
		1-Feb-07	
South Total			
Baseballs Total			
Basketballs	Central	4-Jan-07	
		14-Feb-07	
Central Total			
	North	2-Jan-07	
		6-Feb-07	
		16-Feb-07	
North Total			

PivotChart Filter Pane

Active Fields on the PivotChart

Report Filter
Sales Rep

Axis Fields (Categories)
Product

Legend Fields (Series)
Region

Values
Sum of Total Income