

Analyzing Information with Excel PivotTables

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If you have lists of data in Excel and need to understand what the data are telling you, an Excel PivotTable may be what you are looking for. With pivot tables, you can easily summarize large amounts of data by date and other groupings, combine and compare data, and rotate its rows and columns to see different summaries in a flash. In this session, you'll learn to create Pivot tables using the PivotTable Wizard to analyze lists of data. You'll also learn how to present your analysis in both report and chart format and how to use a pivot table to answer critical questions about your business.

Most Excel users have heard of pivot tables, but don't understand how to create or use them. A pivot table summarizes the columns of information in a database in relationship to each other. A pivot chart is the graphical representation of a pivot table. When you need to present thousands of rows of data in a meaningful fashion, you need a pivot table.

Not all databases are good candidates for pivot table analysis. Databases contain many different types of information. Pivot tables focus on two broad types:

- Data fields that can be summarized like Quantity, Total Cost, Miles Driven.
- Text fields that describe the data such as Salesperson, Customer, City and Sales Territory.

Creating a Pivot Table Using the Wizard

Use the PivotTable and PivotChart Wizard to create an Excel pivot table. Select any cell in a database, and choose Data ➤ PivotTable and PivotChart Report to launch the wizard.

Step 1: Identifying the Data Source and the Type of Report

In the first step of the wizard, select the type of data you want to work with:

- data in an Excel database
- data from an external source like Microsoft Access
- data that you want to consolidate from several worksheets or sources
- an existing PivotTable

Basing a PivotTable on an existing PivotTable results in a leaner file. Specify whether you want a pivot table or a pivot table with a pivot chart.

Step 2: Verifying the Data Range

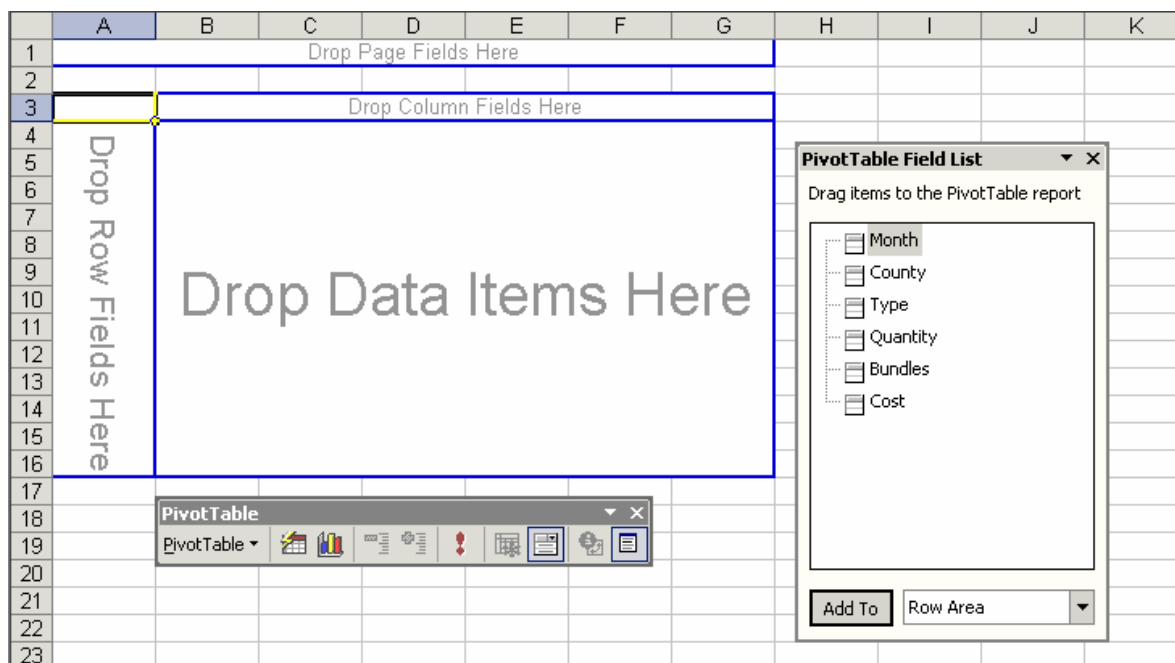
In the second step of the wizard, verify the range of the database. If there is no range selected, or if the range is incorrect, select the correct range before clicking the Next button.

Step 3: Layout and Destination

In the third step, specify the destination, layout, and options. The default destination is a new worksheet. To place the pivot table in an existing worksheet, click Existing Worksheet. Identify a cell address for the upper-left corner of the pivot table. Click Finish to create the Pivot Table.

Changing PivotTable Layout

When you complete the wizard, Excel displays the pivot table, the PivotTable toolbar, and the Pivot Table Field List.



A pivot table contains four areas which are clearly labeled: the Page area, the Column area, the Row area, and the Data area. You layout the table by dragging fields and dropping them into the areas. You can put more than one field in an area.

The Row and Column Areas

Place text fields you want to compare in the Row and Column areas. For example, you might want to compare sales regions by month, or classes by quarter. When you drop a field, Excel examines the data source. Each unique entry becomes a row or column heading—an item—in the pivot table.

The Page Area

While you can filter items in the Row area and Column area, the Page area is used specifically to filter the pivot table. If you need to create separate reports for values in a specific column, place it in the Page area.

The Data Area

Information in the Data area will be summarized, so numeric fields are generally placed there. If you place a text field in the Data area, you can only COUNT the number of entries for each column and row.

As you drop a field button into the Data area, Excel indicates the default summary type for the data. SUM is the default for values; COUNT is the default for columns that contain text entries, dates, or times.

TIP: If a column of numbers includes even one text entry, you're limited to COUNT. In Excel you should *not* use text values like None or NA to indicate the absence of a value. Use Replace (Edit > Replace) to replace text entries like NA with blanks; simply leave the Replace With textbox blank.

Removing and Adding Pivot Table Fields

You can change the layout of an existing pivot table by dragging a field button to another area. To remove a field from the pivot table, drag the field button out of the pivot table area. A large X appears on the button. Release the mouse button to drop and delete the field. To add a field to the pivot table, drag a button from the Field List.

TIP: You can rename fields in your pivot table. Click the field button, overtype the name in the formula bar, and press Enter. You can't use any name that's used as a field name in your database.

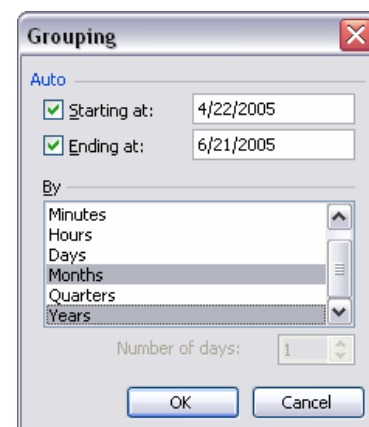
Filtering Items

To filter data displayed in the pivot table, click the filter drop-down arrow on the field button for the field you wish to filter. This opens a list of items in the field. Select the items you want to display, and then click OK to close the list and filter the pivot table. Do you want to include this filtered table in a report you're creating in Word? Select and copy the filtered pivot table. Open the Word document and place your insertion point where you want to place the pivot table. Click Paste to embed the pivot table in the Word document. Click anywhere in the pivot table to turn on the Excel toolbars so you can format the table.

Grouping Items

Grouping combines items, and is usually used for date fields to combine them into months or years. To group a field, right click the field and choose Group and Outline ➤ Group from the shortcut menu to open the Group and Outline dialog box.

The list box in the Group and Outline dialog box is a multi-pick list; choose Month if you want to group by month regardless of year (like employee hire dates or birthdays). Choose both Month and Year, as shown at right, if the same month in different years should be separate entries.



Drilling Down in a Pivot Table

Double-click any nonzero value in the Data area, and Excel opens a new worksheet to display the records that were used to create that cell of the summary. (If you can't drill down in a worksheet, the option is disabled in the Table Options dialog box. You can disable the drill down option when you want to present aggregate data — for example, employee attendance or student test scores —while keeping the details about individual employees or students confidential.)

Changing the Summary and Format for Data Fields

To change the type of summary, click the Field Settings button on the PivotTable toolbar or double-click the field button in the Data area to open the PivotTable Field dialog box. Choose the type of summary you want to use from the list box.

The default number format in a pivot table is General. Click the Number button in the Pivot Table Field dialog box to change formats, or use the Formatting toolbar and Format Cells dialog box to format the completed pivot table.

Setting Pivot Table Options

Pivot tables are constructed objects. Unlike a regular worksheet, pivot table rows and columns are created and populated based on settings. The PivotTable Options dialog box is anything but optional. Right-click anywhere in the pivot table and choose Table Options to open the dialog box. Two frequently changed options are the grand totals and the empty cells options. If you don't want grand totals in your pivot table, this is the place to turn them off. Enable the Empty Cells checkbox to suppress the automatic display of zeros for empty pivot table cells.

Applying a Format

There are twenty-two different AutoFormats designed specifically for pivot tables. The first ten AutoFormats (Report 1 - Report 10) are indented formats designed to resemble traditional printed database reports. These PivotTable Reports look very little like pivot tables, and a lot like reports you'd spend a fair amount of time creating and formatting in a reporting tool like Business Objects or Crystal Reports.

To apply an AutoFormat, right click on the pivot table and choose Format Report from the shortcut menu or click the Format Report button on the PivotTable toolbar to open the AutoFormat dialog box. Select a format and click OK to apply the format. If the results aren't what you intended, click Undo.

Keeping the Pivot Table Updated

A pivot table is dynamically linked to the database used to create the table. If you edit values within the database, simply choose Data ➤ Refresh Data or click the Refresh Data button on the PivotTable toolbar and Excel will update the pivot table to reflect the database changes.

However, if you add columns to the database or add rows of data at the bottom of the database, you cannot simply refresh the data. You must return to the Pivot Table and PivotChart Wizard and identify the new range of records that should be included in the table. If you don't, the pivot table values won't include the added data.

To update the range being used in the pivot table, choose Data ➤ PivotTable and PivotTable Chart Report from the menu or open the PivotTable menu in the toolbar and choose Wizard. Move to the second step of the wizard and reselect the database. Click the Finish button to close the wizard and return to the updated pivot table.

Etcetera

This is just the beginning of what you can do with Excel PivotTables. You can add calculated fields, create custom calculations, create a separate pivot table for each department or time period in three easy steps...the list is quite long. For more information look up Pivot Table in Excel help or visit the Microsoft Office web site.

For materials and links from this session, visit our web site
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