

Creating Charts

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Basically, a chart is a way to present a table of numbers visually. Displaying data in a well-conceived chart can make it more understandable, and often you can make your point more quickly. Charts are particularly useful for getting a visual picture of a lengthy series of numbers and their relationships. Making a quick chart helps you spot trends and patterns that would be nearly impossible to identify in a range of numbers. Charts are based on numbers that appear in a worksheet. Before you can create a chart, you have to enter some numbers. Normally, the data used by a chart resides in a single worksheet within one file - but that's not a strict requirement. A single chart can use data from any number of worksheets or even from different workbooks.

When you create a chart in Excel, you have two options for placing

- Insert the chart directly into a worksheet as an object. This is *embedded* chart.
- Create the chart as a new chart sheet in your workbook.

Each method has its advantages, as you'll see later in this chapter. Regardless of which chart-making option you choose, you have complete control over the chart's appearance. You can change the colors, move the legend, format the numbers on the scales, add gridlines, and so on.

Converting a range of numbers into a chart is quite easy, and many people find this aspect of Excel to be rather fun. You can experiment with different chart types to determine the best way to make your case. If that isn't enough, you can make a variety of adjustments to your charts, such as adding annotations, clip art, and other bells and whistles. The real beauty of Excel's charts, however, is that they are linked to worksheet data. So if your numbers change, the charts reflect those changes instantly.

Chart Types

You're probably aware that there are many chart types: bar charts, line charts, pie charts, and so on. Excel lets you create all the basic chart types and even some esoteric chart types such as radar charts and doughnut charts.

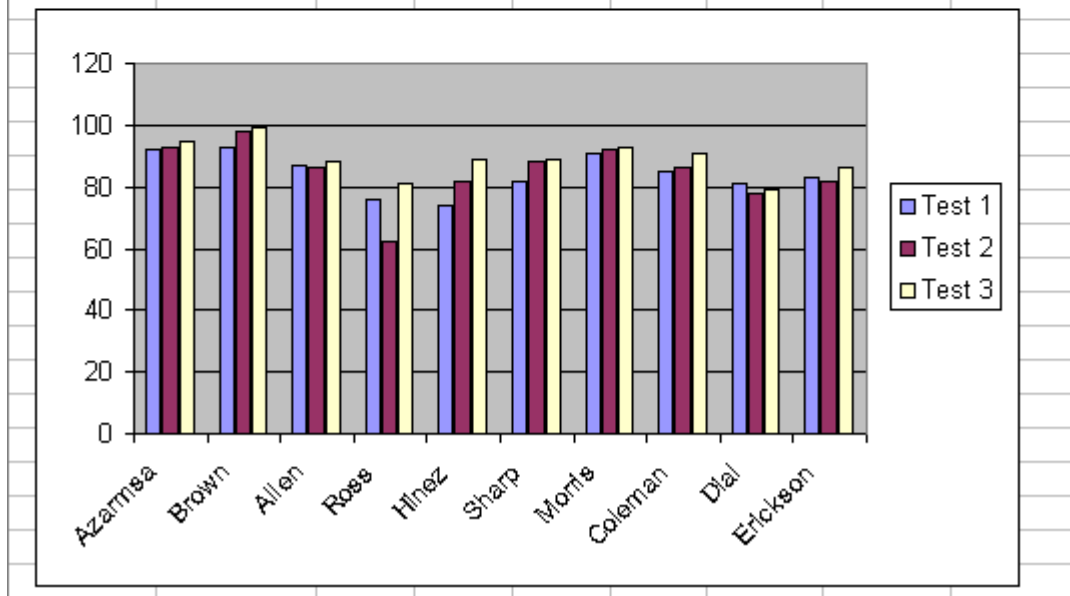
A common question asked by beginning chart makers is how to determine the most appropriate chart type for the data. The best rule of thumb is to use the chart type that gets your message across in the simplest way. Fortunately, Excel makes it easy to change a chart's type after the fact. Experiment with various chart types until you find the one that represents your data accurately and clearly-and as simply as possible.

Creating a Chart

For a quick demonstration of how easy it is to create a chart, follow these instructions.

1. Enter data to be charted into a worksheet.
2. Select the range of data you entered.
3. Press F11. Excel inserts a new chart sheet (named Chart 1) and displays the chart based on the selected data. Figure: This range would make a good chart.

First Name	Last Name	Test 1	Test 2	Test 3	Total	Average
Reza	Azarmsa	92	93	95	280	93.33
Anna	Brown	93	98	99	290	96.67
Erin	Allen	87	86	88	261	87.00
Liz	Ross	76	62	81	219	73.00
Sara	Hinez	74	82	89	245	81.67
Shannan	Sharp	82	88	89	259	86.33
Faye	Morris	91	92	93	276	92.00
Jim	Coleman	85	86	91	262	87.33
Mary	Dial	81	78	79	238	79.33
Pam	Erickson	83	82	86	251	83.67



In this example, Excel created its default chart type (which is a two-dimensional column chart) by using the default settings. For more control over the chart-making process, you'll want to use the ChartWizard.

After you create a chart, You can always change its type, add custom formatting, add new data series to it, or change an existing data series so that it uses data in a different range.

Embedded Charts

An embedded chart basically floats on top of a worksheet on the worksheet's draw layer. As with other drawing objects (such as a text box or a rectangle), you can move an embedded chart, resize it, change its proportions, adjust its borders, and perform other operations.

To make any changes to the actual chart in an embedded chart object, you must click on it. This activates the chart. The main advantage to using embedded charts is that you can print the chart next to the data it uses.

Chart Sheets

When you create a chart on a chart sheet, the chart occupies the entire sheet. If you plan to print a chart on a page by itself, using a chart sheet is your best choice. If you have many charts to create, you may want to create each one on a separate chart sheet to avoid cluttering your worksheet. This technique also makes it easier to locate a particular chart, because you can change the names of the chart sheets' tabs to correspond to the chart that it contains.

Normally, a chart in a chart sheet is displayed in WYSIWYG mode: the printed chart will look just like the image on the chart sheet. If the chart doesn't fit in the window, you can use the scrollbars to scroll it or adjust the zoom factor.

Creating Charts: Using ChartWizard

In this section, I discuss the methods you can use to create embedded charts as well as charts on chart sheets. Both chart types can be created with or without the assistance of the ChartWizard.

Note : Excel always has a default chart type. Normally, the default is a column chart (but you can change this type, as you'll see later). If you create a chart without using the ChartWizard, Excel creates the chart by using the default chart type. If you use the ChartWizard, Excel prompts you for the chart type, so the default chart type becomes irrelevant.

Creating an embedded chart using the ChartWizard

To invoke the ChartWizard to create an embedded chart:

1. Select the data to be charted (optional).

2. From the Insert menu, choose Chart command (or, click on the ChartWizard tool on the Standard toolbar). Chart Wizard dialog box displays. Following figures show the ChartWizard steps.

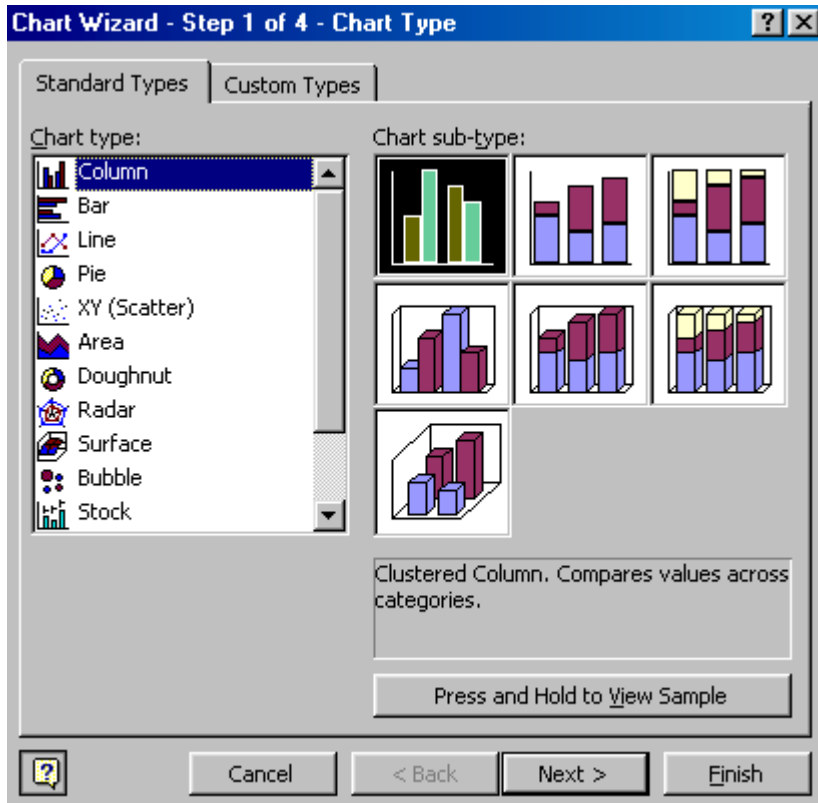
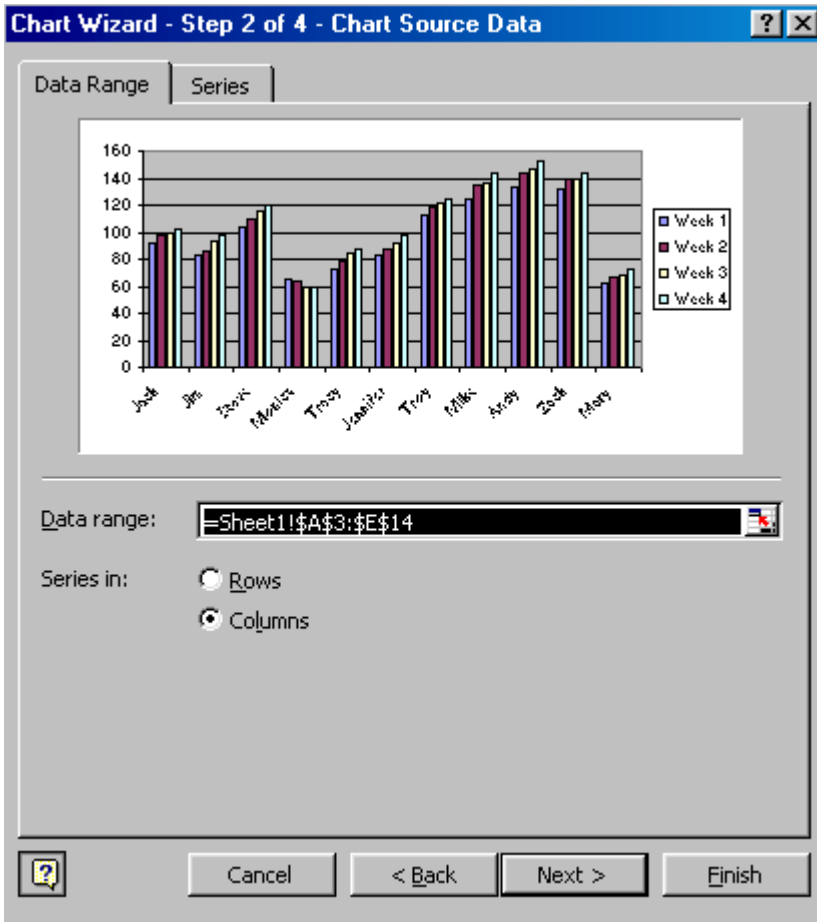
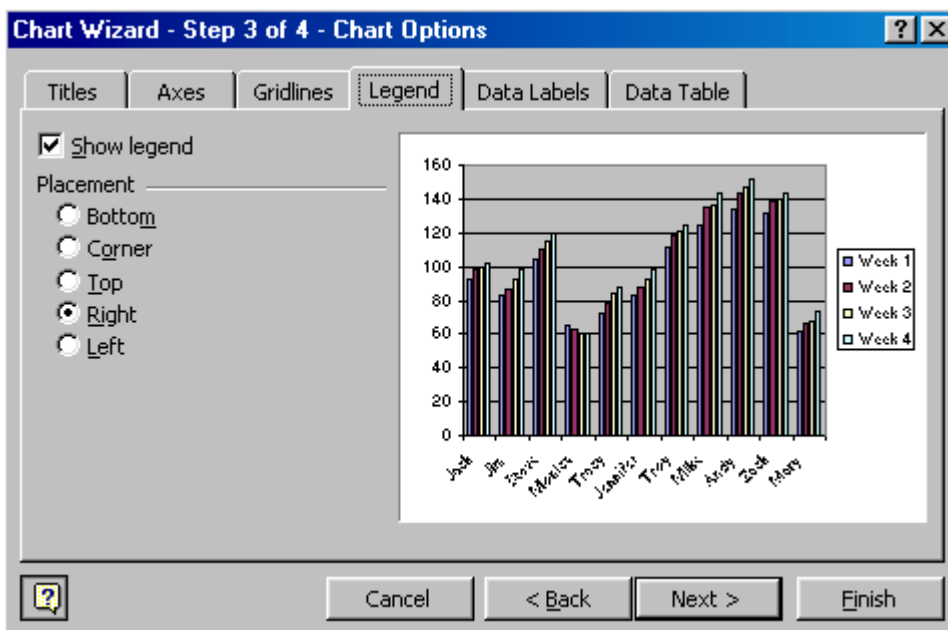


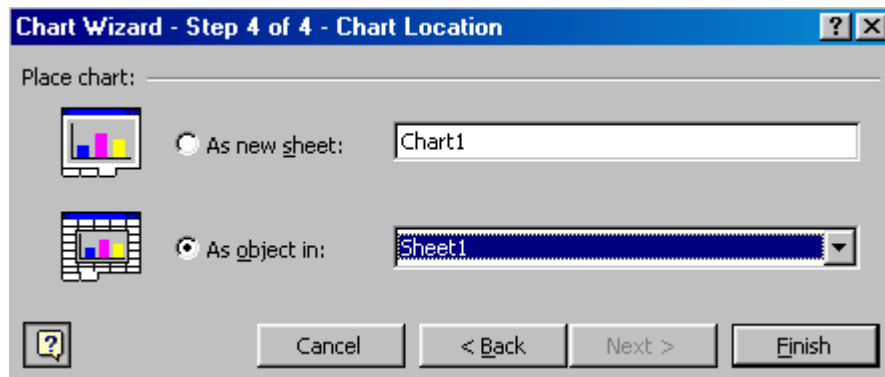
Chart Wizard step 1.



ChartWizard step 2.



ChartWizard step 3.



ChartWizard step 4.

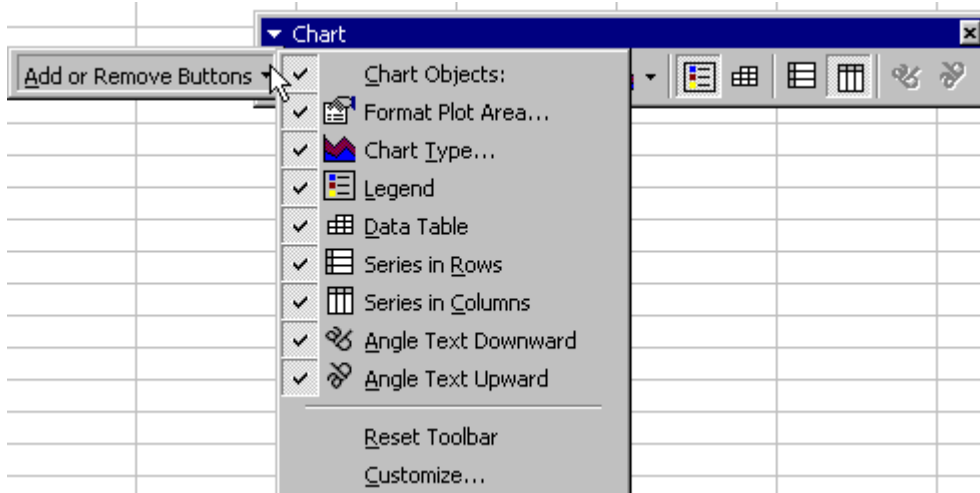
3. Make your choices in Steps 1 through 3 of the ChartWizard.
4. In Step 4 of the ChartWizard, select the option labeled As new sheet or As object in sheet1 or the name of your worksheet.
5. Click on the Finish button.

The Chart toolbar

The Chart toolbar appears whenever you click on an embedded chart or activate a chart sheet. If it is not displayed, choose Toolbars from the View menu and select Chart. This toolbar, shown in the accompanying figure, includes tools. You can use these tools to make some common chart changes:



Chart Objects: When a chart is activated, you can select a particular chart element using this drop-down list.



Format Selected Object: Displays the Format dialog box for the selected chart element.

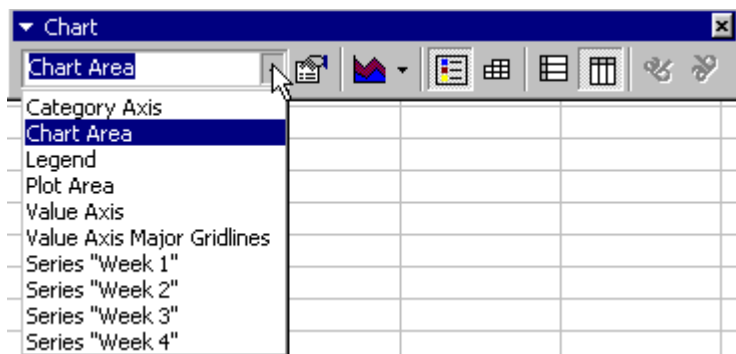
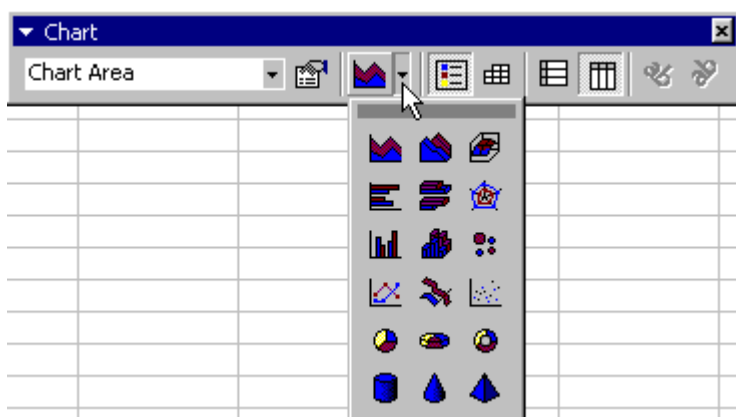
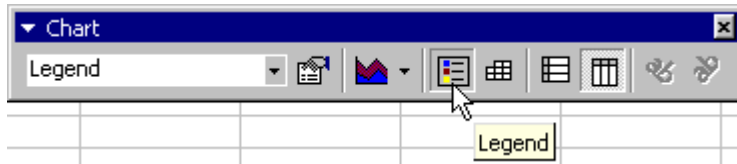


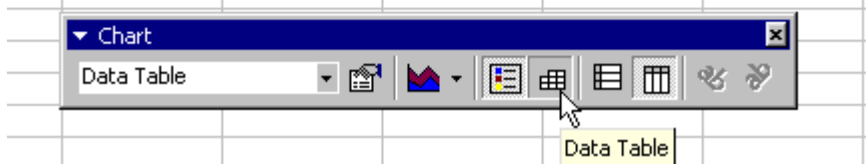
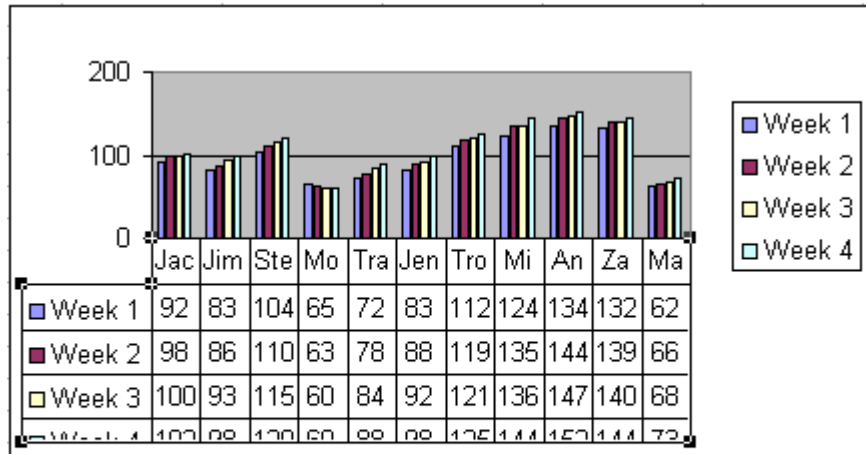
Chart Type: This tool expands to display 18 chart types when you click on the arrow. After it's expanded, you can drag this tool to a new location -creating, in effect, a miniature floating toolbar.



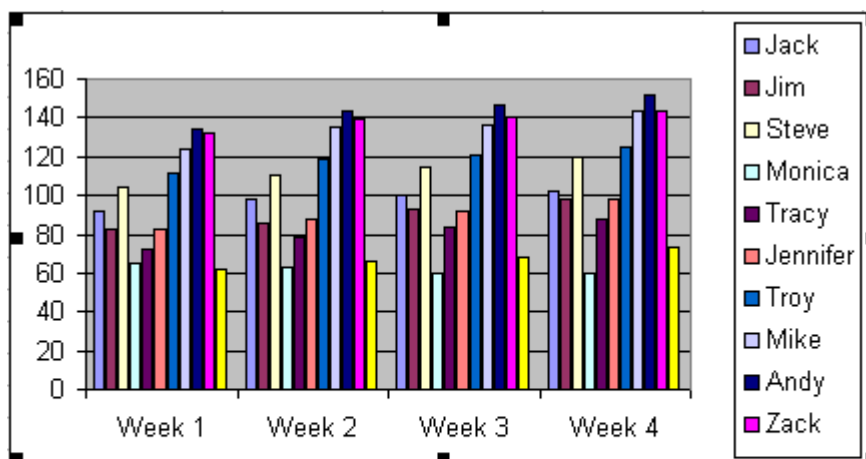
Legend: Toggles the legend display in the selected chart.



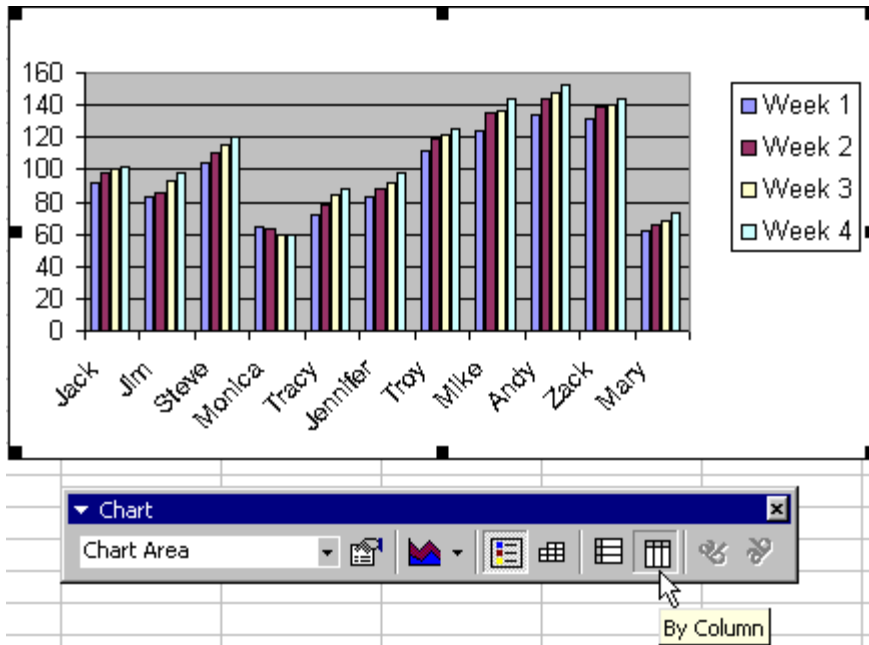
Data Table: Toggles the display of the data table in a chart.



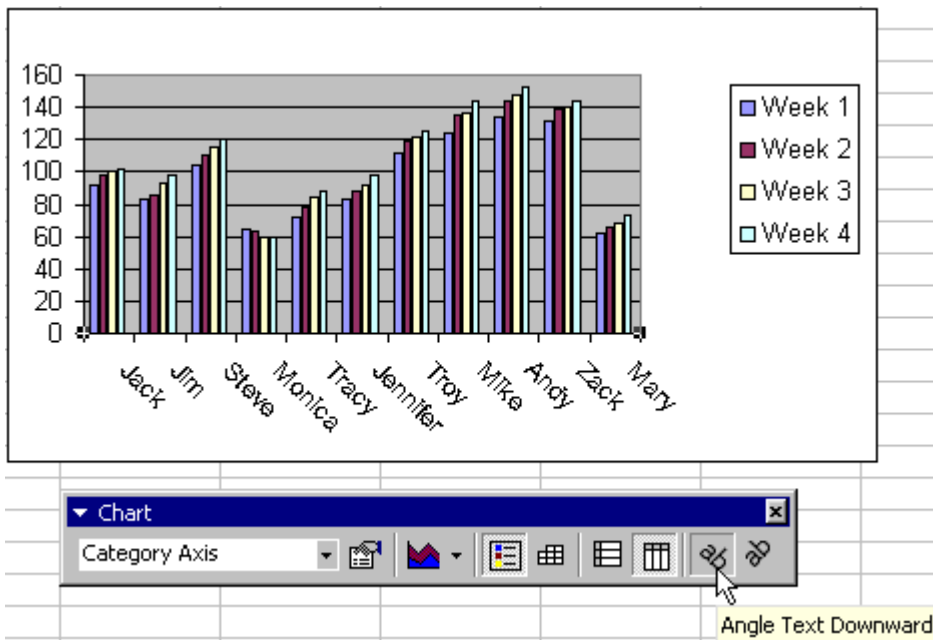
By Row: Plots the data by rows



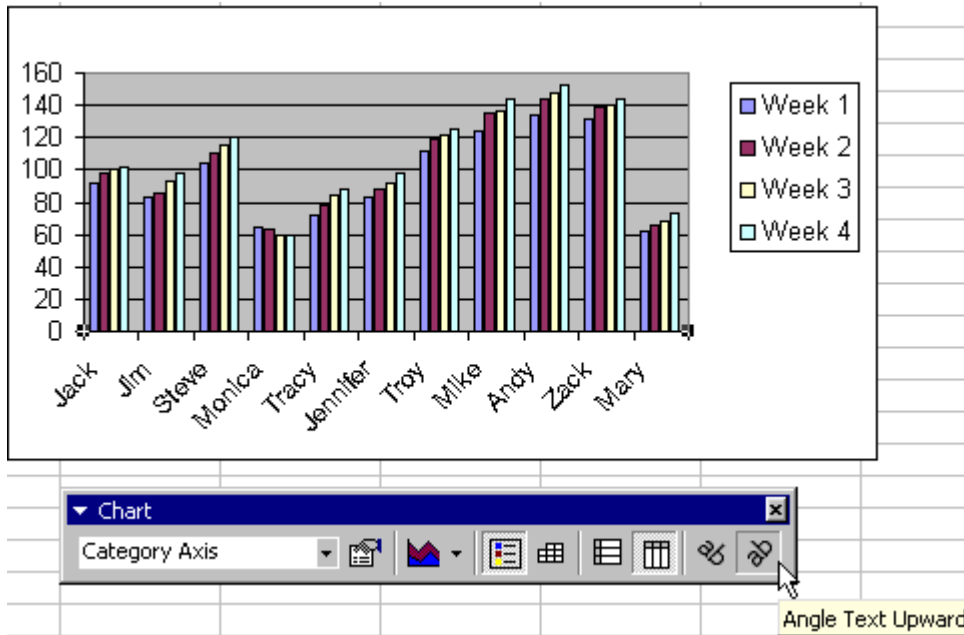
By Column: Plots the data by columns



Angle Text (Downward): Displays the selected text at a -45 degree angle



Angle Text (Upward): Displays the selected text at a +45 degree angle



If you press Shift while you click on either of the Angle Text tools, the selected text will be returned to normal (no angle).

Excel includes several other chart-related tools that aren't on the Chart toolbar. You can customize the toolbar to include these additional tools. These tools are in the Charting category in the Customize dialog box.

In addition, several tools on the other toolbars also work with charts. Examples include the Color, Font Color, Bold, Italic, and Font.

Basic Chart Modifications

After you create a chart, you can modify it at any time. The modifications you can make to a chart are extensive. Before you can modify a chart, it must be activated. To activate an embedded chart, click on it. This activates the chart and also selects the element that you click on.

Moving And Resizing A Chart

If your chart is on a chart sheet, you can't move it or resize it. You can, however, change the way it's displayed by selecting the View menu then Sized with Window command.

If your chart is an embedded chart, you can freely move and resize it. Click on the chart's border, and then drag the border to move the chart or drag any of the eight handles to resize the chart.

Changing The Chart Type

To change the chart type of the active chart, use either of the following methods:

- Choose the Chart Type button on the Chart toolbar. Click on the drop-down arrow, and this button expands to show basic chart types.
- Choose the Chart menu then Chart Type command.

Moving And Deleting Chart Elements

Some of the chart parts can be moved (any of the titles, the legend, or data table) To move a chart element, simply click on it to select it, and then drag it to the desired location in the chart. To delete a chart element, select it and then press Delete.

Other Modifications

When a chart is activated, you can select various parts of the chart to work with. Modifying a chart is similar to everything else you do in Excel. First, you make a selection (in this case, select a chart part). Then you issue a command to do something with the selection.

You can use the Fill Color tool on the Formatting toolbar to change colors. For example, if you want to change the color of a series, select the series and choose the color you want from the Fill Color tool. You'll find that many other toolbar tools work with charts. For example, you can select the chart's legend and then click on the Bold tool to make the legend text bold.

When you double-click on a chart element, its Formatting dialog box appears. The dialog box that appears varies, depending on the item selected. In most cases, the dialog box is of the tabbed variety. Many modifications are self-evident- for example, changing the font used in a title.

Changing the Default Chart Type

Throughout this chapter, I mention the default chart type many times. Excel's default chart type is a 2D column chart with a light gray plot area, a legend on the right, and horizontal gridlines.

If you don't like the looks of this chart or if you normally use a different type of chart, you can easily change the default chart in the following manner:

1. Select the Chart menu then Chart Type command.
2. Choose the chart type that you want to be the default. This can be a chart from either the Standard Types tab or the Custom Types tab.

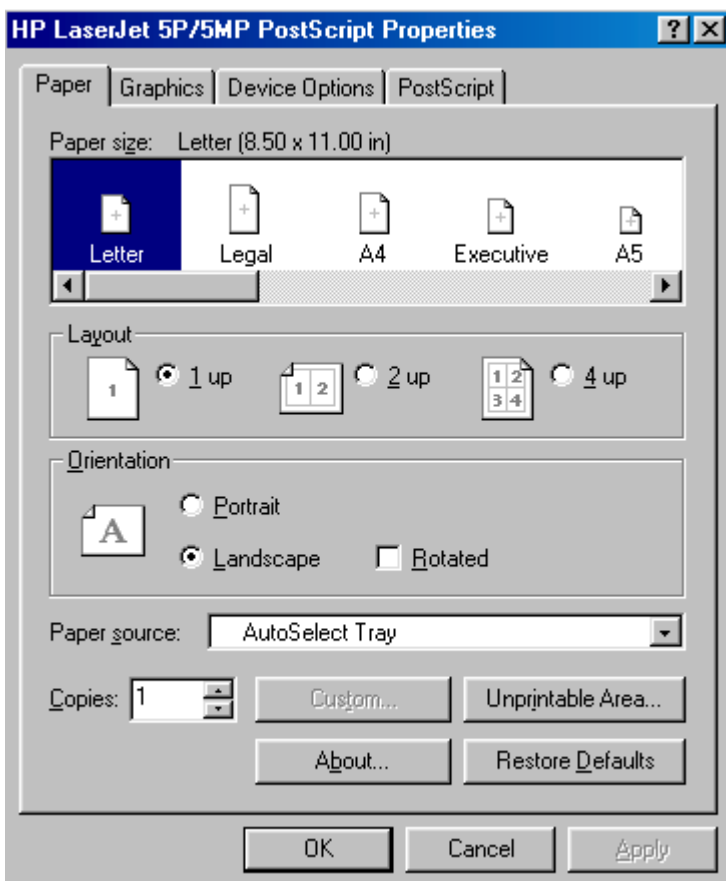
3. Click on the button labeled Set as default chart type. You are asked to verify your choice.

Printing Charts

There's nothing special about printing embedded charts; it works just like printing a worksheet. As long as the embedded chart is included in the range to be printed, the chart is printed as it appears on-screen.

If an embedded chart is selected when you issue the Print command (or click on the Print button), the chart is printed on a page by itself, and the worksheet itself is not printed.

If you want to change a particular embedded chart to appear on your printout, click on the Properties on the Print dialog box tab and make the desired changes.



If the chart is on a chart sheet, it prints on a page by itself. If you access Excel's Page Setup dialog box when the chart sheet is active, the Sheet tab is replaced with a tab named Chart.