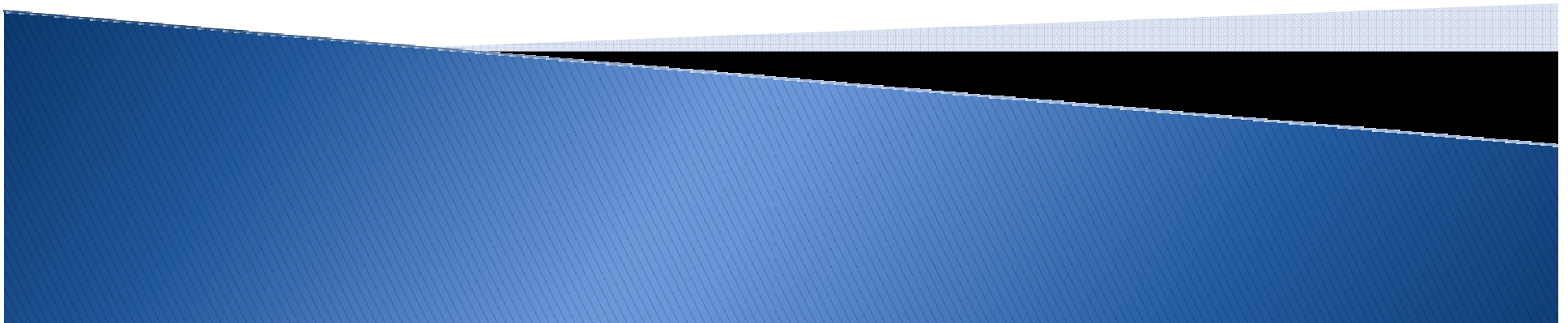


# CGN 2420

# Graphing with Excel

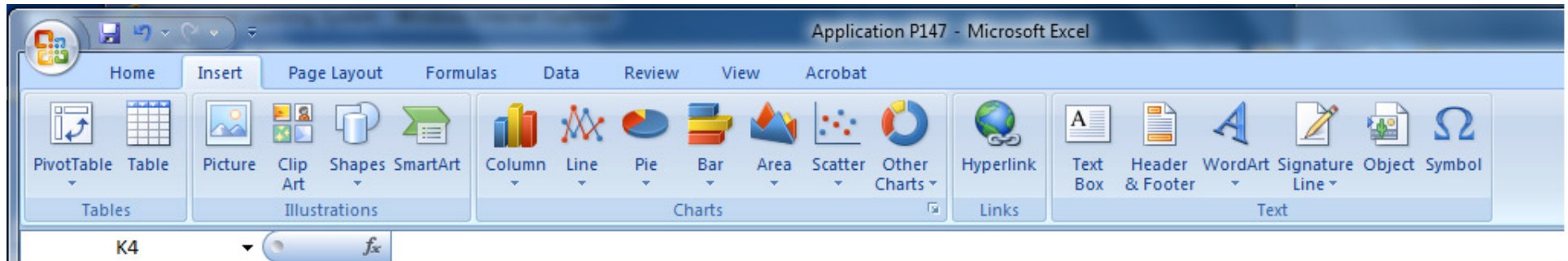
Instructor: Professor Cora Martinez, PhD  
Department of Civil and Environmental Engineering  
Florida International University



# Objectives

- ▶ Organize data in a worksheet to make graphing easy
- ▶ Create and XY scatter graph
- ▶ Modify plot formatting
- ▶ Add additional data to the graph
- ▶ Add trendlines and error bars to an XY graph
- ▶ Create and format a pie chart
- ▶ Create and format a column chart
- ▶ Create and format a combined chart
- ▶ Work with 3D charts

# Creating Charts



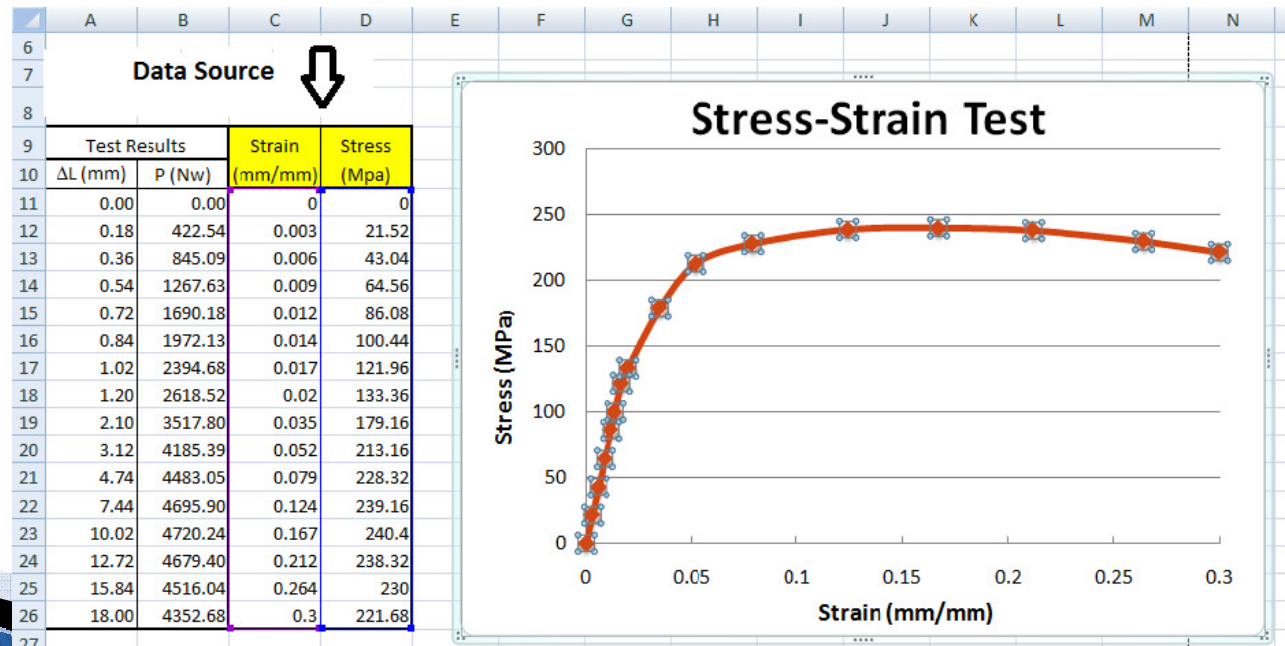
A chart, or graph, is a visual representation of a set of data. In order to create a graph in Excel 2007:

- Select the data source with the range of data you want to chart.
- In the Charts group on the Insert tab, click a chart type, and then click a chart subtype in the Chart gallery.

# Selecting a Data Source

The data source is the range that contains the data you want to display in the chart.

- ▶ Series name
- ▶ Series values
- ▶ Category values (horizontal axes)



# Importing Text Files

Text files are a common way to move data from one program to another. Two types of text files are used to store data,

- ▶ Delimited:           24,45,67
- ▶ Fixed width:       0.00       64.25  
                          1.00       45.75

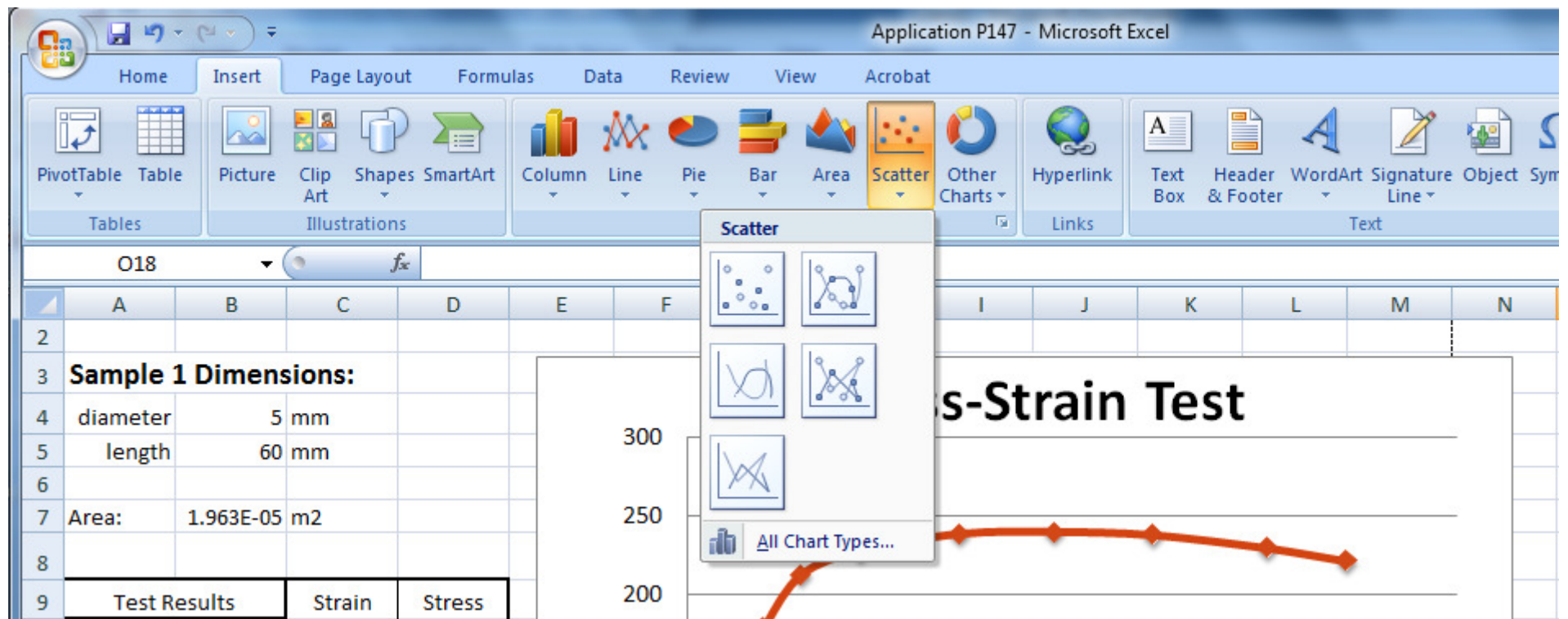
Copy the data from the text file, paste in Excel, and use the Text to Columns button in the Data Tools group on the Data tab to convert the selected text into a table. Then, this data can be used as Data Source for a graph.

# Selecting a Chart Type

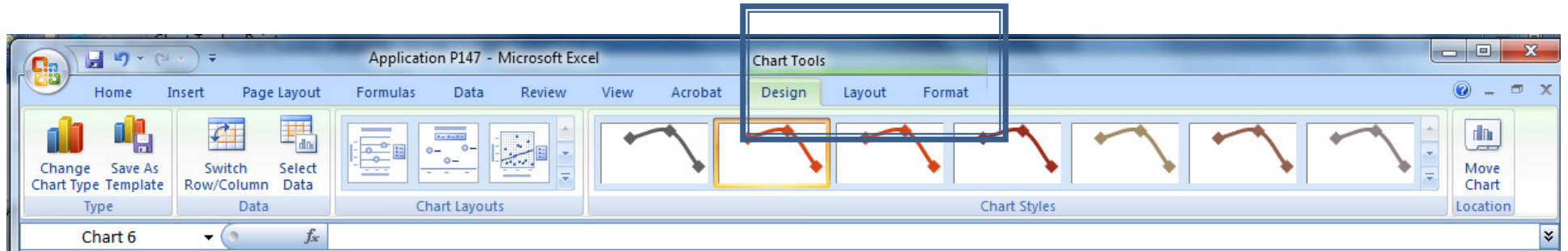
Categories of Excel chart types ◀	
Chart Type	Description
Column	Compares values from different categories. Values are indicated by the height of the columns.
Line	Compares values from different categories. Values are indicated by the height of the line. Often used to show trends and changes over time.
Pie	Compares relative values of different categories to the whole. Values are indicated by the areas of the pie slices.
Bar	Compares values from different categories. Values are indicated by the length of the bars.
Area	Compares values from different categories. Similar to the line chart except that areas under the lines contain a fill color.
XY (Scatter)	Shows the patterns or relationship between two or more sets of values. Often used in scientific studies and statistical analyses.
Stock	Displays stock market data, including the high, low, opening, and closing prices of a stock.
Surface	Compares three sets of values in a three-dimensional chart.
Doughnut	Compares relative values of different categories to the whole. Similar to the pie chart except that it can display multiple sets of data.
Bubble	Shows the patterns or relationship between two or more sets of values. Similar to the XY (Scatter) chart except the size of the data marker is determined by a third value.
Radar	Compares a collection of values from several different data sets.

# Creating an XY Scatter Plot

- ▶ Select the range.
- ▶ Click the Insert tab on the Ribbon.
- ▶ In the Charts group, click the Scatter button, and then click the desired category.



# Formatting your graph



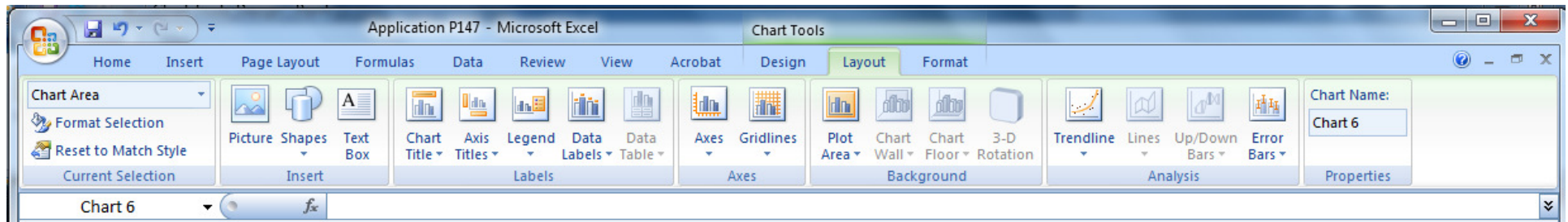
Once the chart is created three new tabs appears on the Ribbon: Design, Layout and Format, these Chart Tools are used to modify the graph.

First:

- ▶ Choose a quick layout in the Design tab
- ▶ Edit the Axis Titles and Graph Title
- ▶ Select a Chart Style to modify the chart



# Formatting your graph (Cont.)

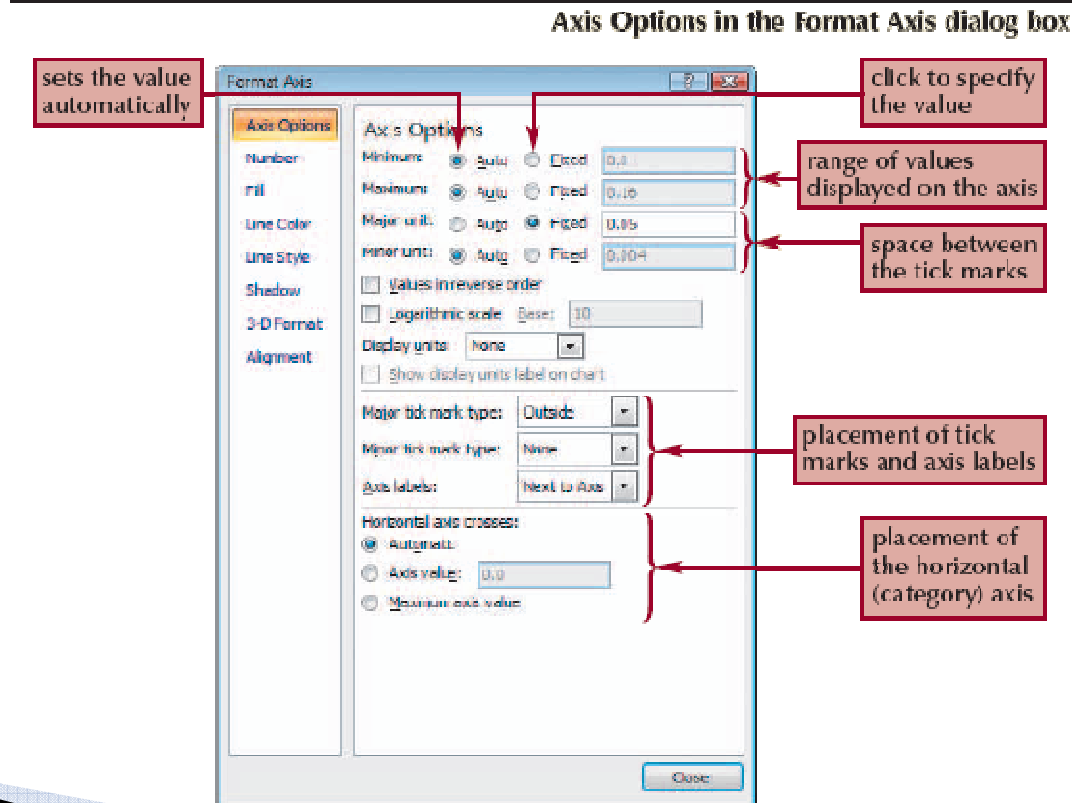


The Layout Tab is used to modify in more detail your graph.

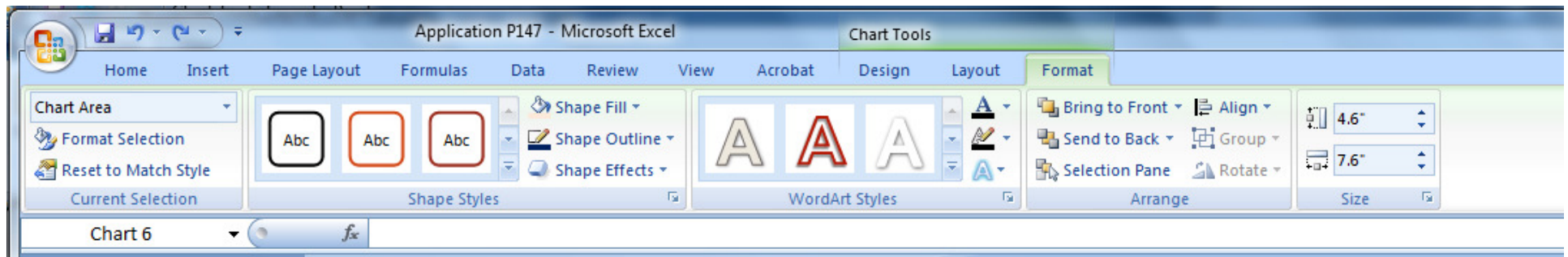
- ▶ Add or modify labels (Title, Axes, Legend, Data)
- ▶ Modify the appearance of axes and gridlines
- ▶ Modify the appearance of the plot area
- ▶ Add trendlines and error bars

# Formatting the Chart Axes

- ▶ Click the Chart Tools Layout tab on the Ribbon and use the Axes button. Select More Primary Axis Option.



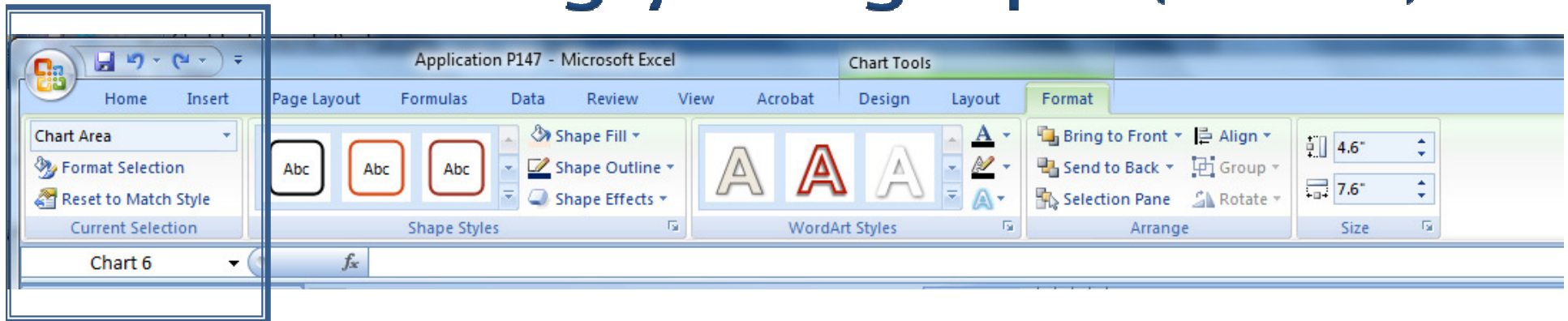
# Formatting your graph (Cont.)



The Format Tab is used to modify the graph borders and background. In addition you can modify any shape in the graph.

- ▶ Modify shapes using Shape Styles
- ▶ Modify text using WordArt Styles
- ▶ Modify graph Size
- ▶ Arrange objects in your spreadsheet to change order and visibility

# Formatting your graph (Cont.)



The Current Selection group is available from either the Layout tab or Format tab. If you click on the graph feature you want to modify and then click Format Selection the dialog box for that graph feature will open.

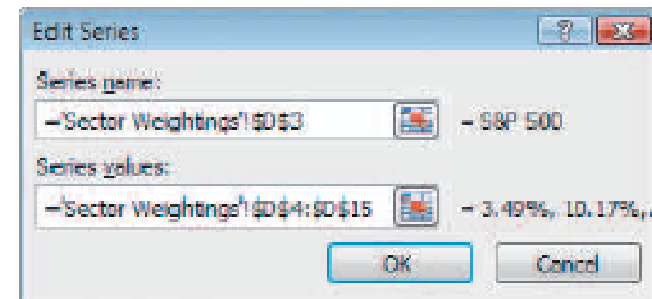
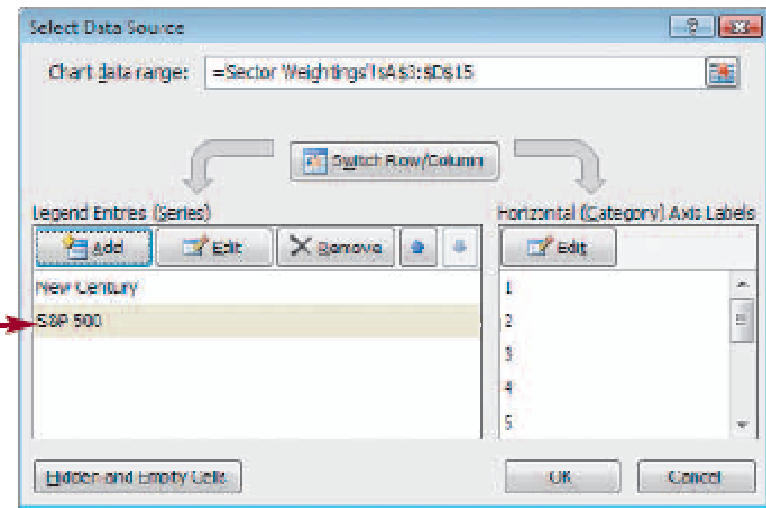
- ▶ If you are familiar with prior versions of Excel, you can still right-click on a feature and select “Format <feature>” from the pop-up menu.

# Adding a Data Series to an Existing Chart

Select Data Source dialog box

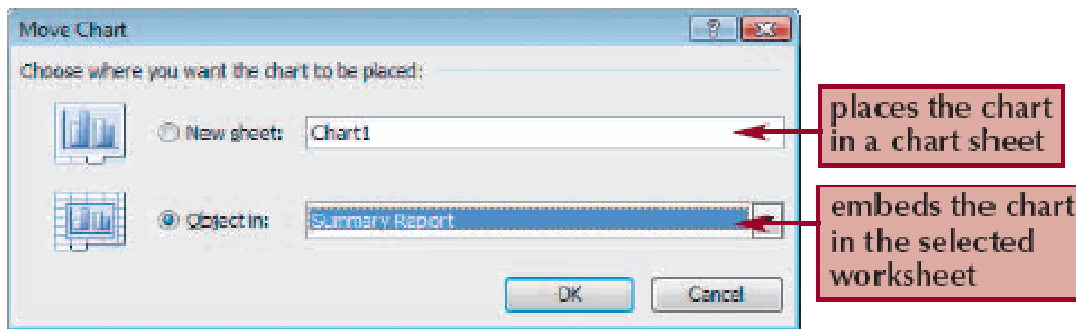
- ▶ In the Data group, on the **Design** tab, click on Select Data, and the Select Data Source window will open
- ▶ Use this window to Edit or Add data to the graph

data series added to the chart



# Moving and Resizing Charts

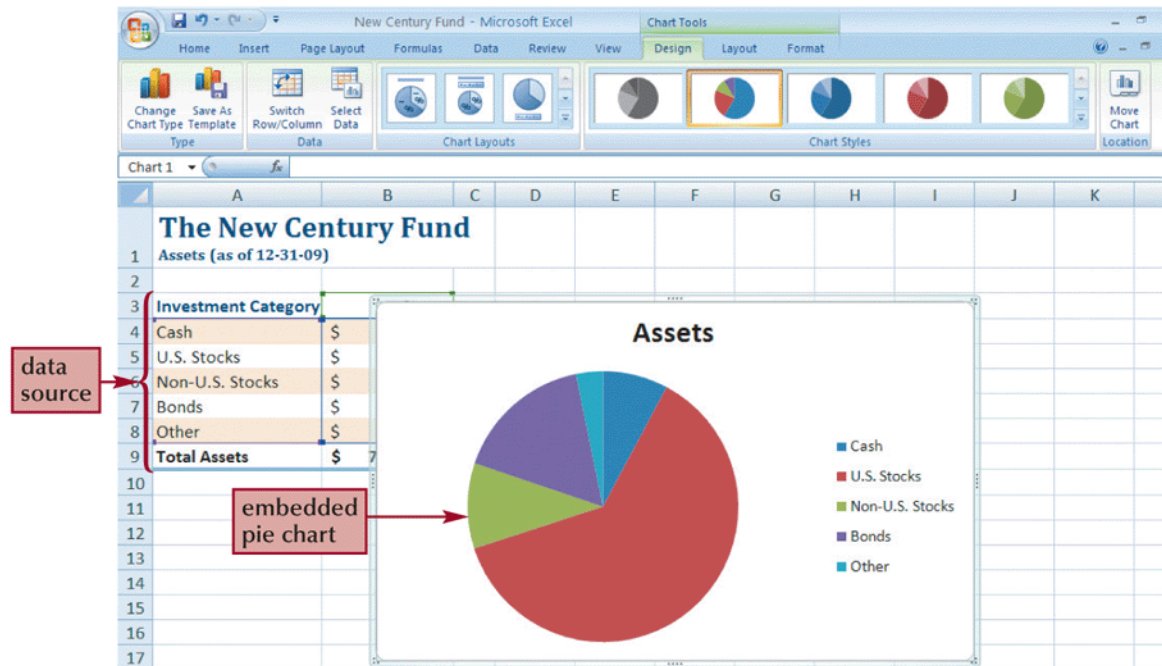
- ▶ By default, a chart is inserted as an embedded chart, which means the chart is placed in a worksheet next to its data source.
- ▶ You can also place a chart in a Chart sheet.
- ▶ In the Location group on the Chart Tools Design tab, click the Move Chart button.



# Create a Pie Chart

- ▶ Click the Insert tab on the Ribbon.
- ▶ In the Charts group, click the Pie button.

Pie chart inserted in the Assets sheet



# Choosing a Chart Style and Layout

- ▶ In the **Design** tab of the Chart Tools select a quick Layout and Style for your chart

Style 26 chart style applied








The screenshot shows the Microsoft Excel interface with the Chart Tools Design tab active. The 'Chart Styles' gallery shows 'Style 26' selected. A pie chart titled 'Assets' is displayed in the worksheet, with a callout box pointing to a slice and the text 'pie slice style is changed'. The worksheet contains data for 'Fees & Expenses' and 'Fund Expenses'.

Fees & Expenses	
<b>Sales Charges</b>	
Front-End Load	5.75%
Deferred Load	NA
<b>Fund Expenses</b>	
Management Fees	0.29%
12b1 Expense	0.25%
Net Expense Ratio	0.62%
Gross Expense Ratio	0.68%

Risk and Return Profile	
-------------------------	--

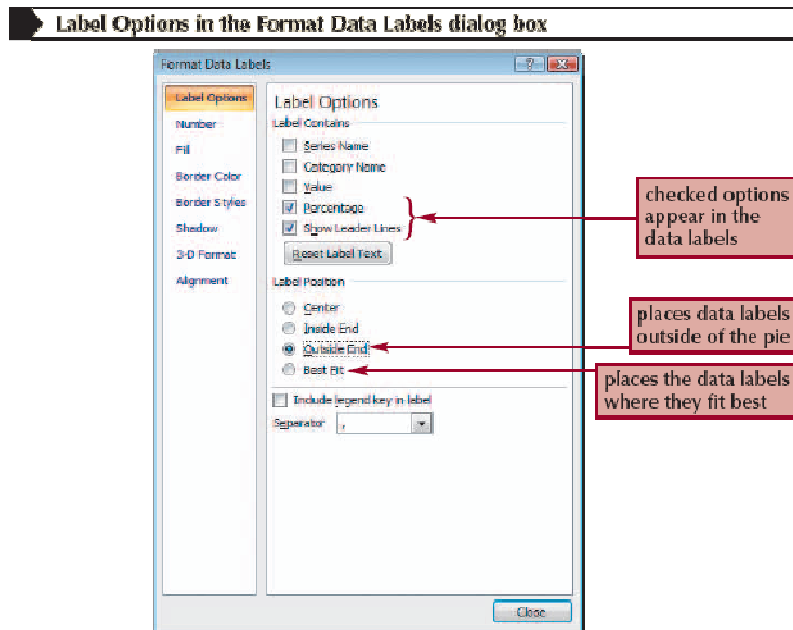


# Choosing a Chart Style and Layout

Pie chart layouts		
Layout	Name	Pie chart with
	Layout 1	Chart title, labels, and percentages
	Layout 2	Chart title, percentages, and legend above the pie
	Layout 3	Legend below the pie
	Layout 4	Labels in pie slices
	Layout 5	Chart title and labels in pie slices
	Layout 6	Chart title, percentages, and legend to the right of the pie
	Layout 7	Legend to the right of the pie

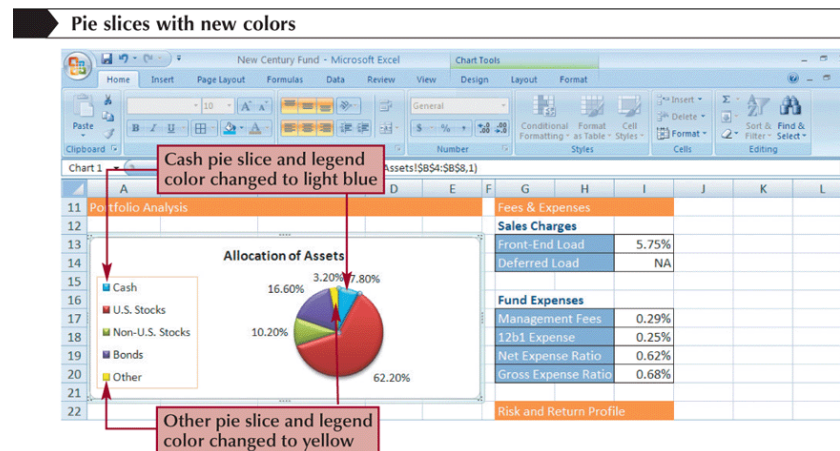
# Formatting a Pie Chart

- ▶ Click the chart to select it.
- ▶ In the Labels group on the Chart Tools Layout tab, click the Data Labels button, and then click More Data Label Options.



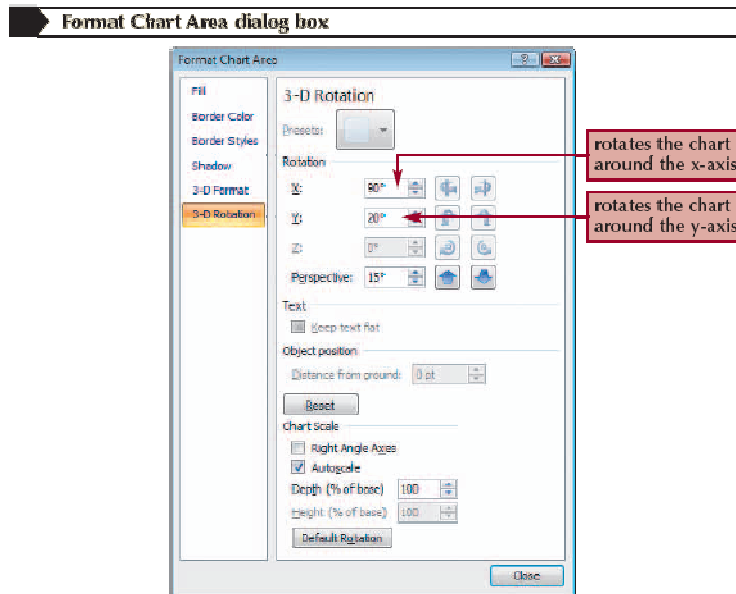
# Setting the Pie Slice Colors

- ▶ In pie charts with legends, it's best to make the slice colors as distinct as possible to avoid confusion.
- ▶ Click the pie to select the entire data series, and then click the slice you wish to change.
- ▶ Change the fill color.



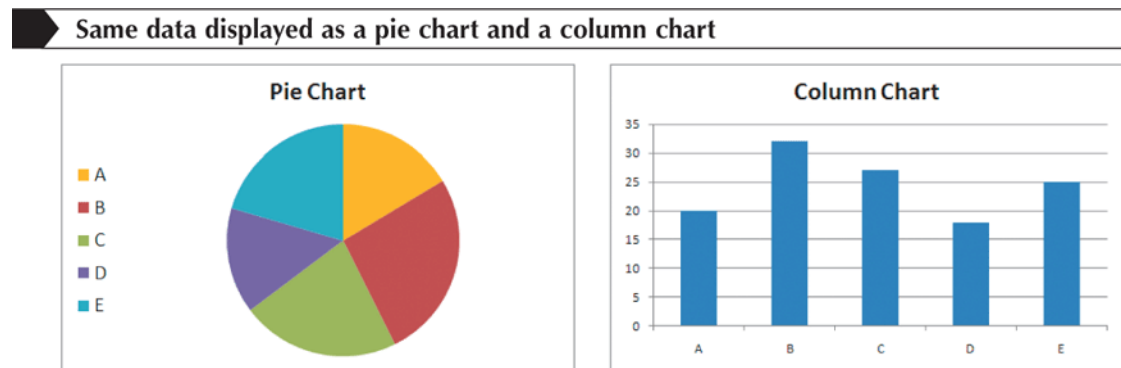
# Working with 3D Options

- ▶ To increase the 3D effect, you need to rotate the chart
- ▶ Click the Chart Tools Layout tab on the Ribbon, and then, in the Background group, click the 3-D Rotation button



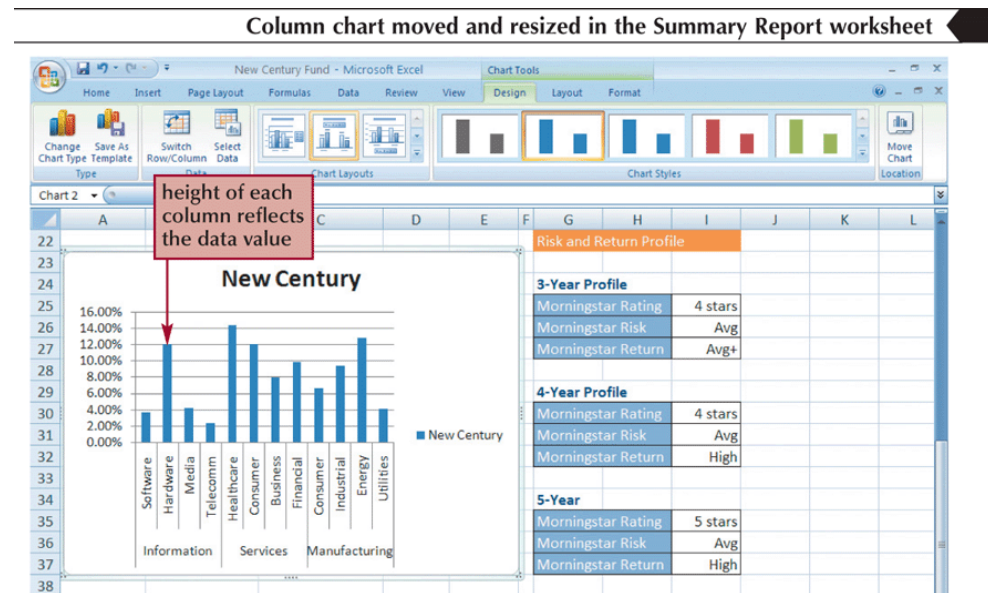
# Creating a Column Chart

- ▶ A column chart displays values in different categories as columns; the height of each column is based on its value.
- ▶ The bar chart is a column chart turned on its side, so each bar length is based on its value.



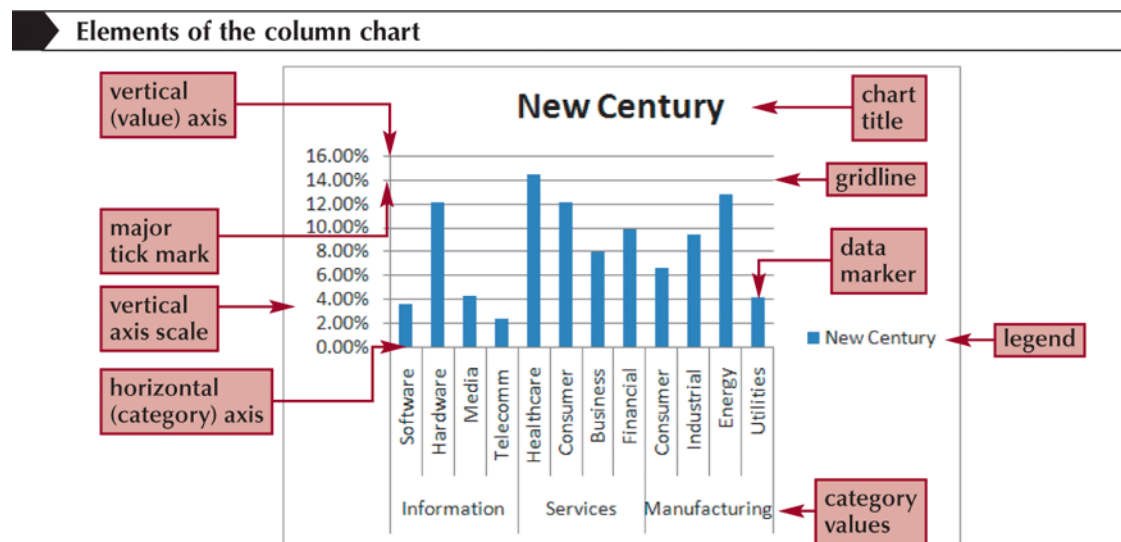
# Creating a Column Chart

- ▶ Select the range.
- ▶ Click the Insert tab on the Ribbon.
- ▶ In the Charts group, click the Column button and then choose the chart subtype.



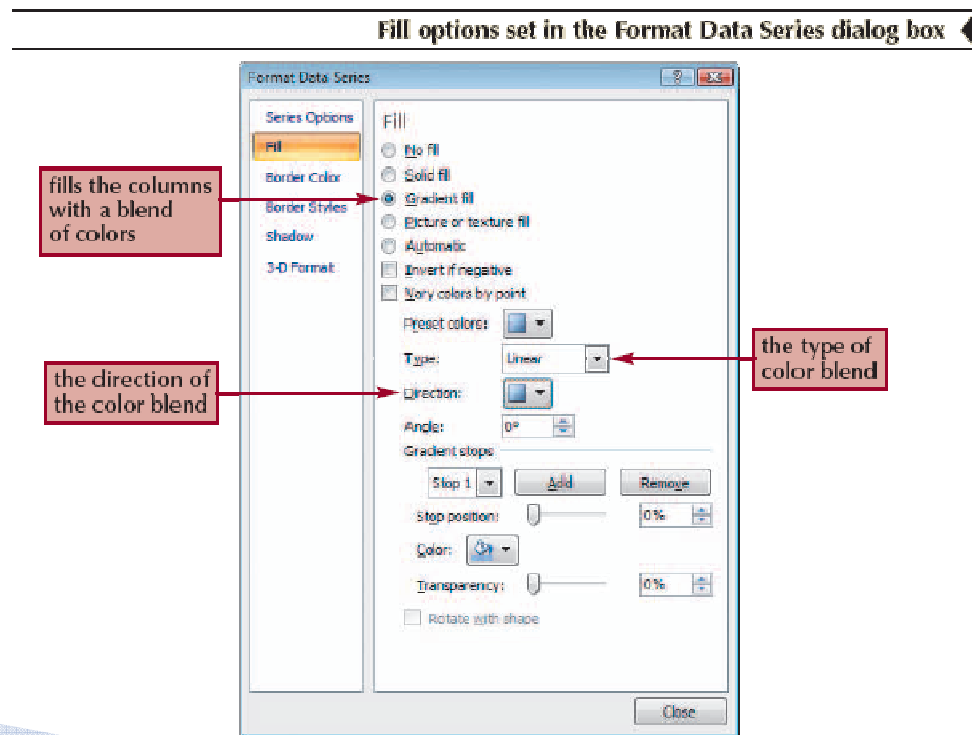
# Formatting Column Chart Elements

- ▶ Click the Chart Tools Layout tab on the Ribbon to modify the different features of this chart.



# Formatting Chart Columns

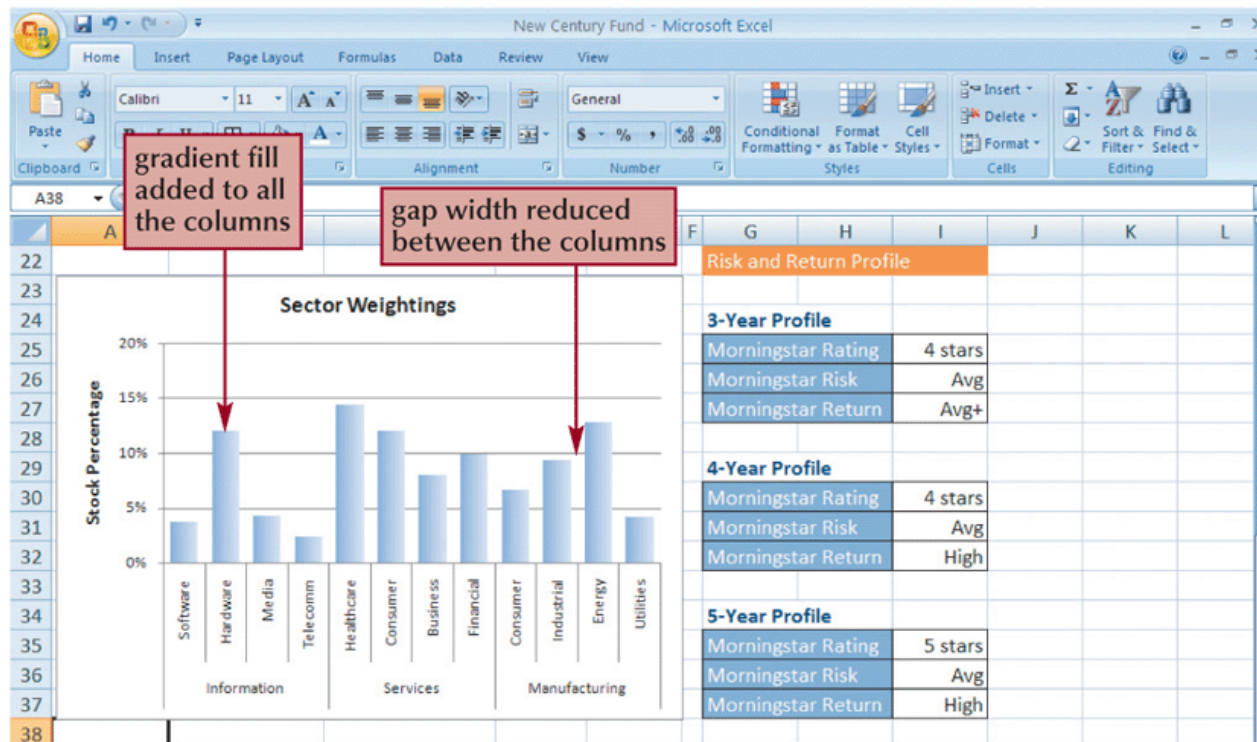
- ▶ Click any column in the chart.
- ▶ In the Current Selection group on the Chart Tools Layout tab, click Format Selection.





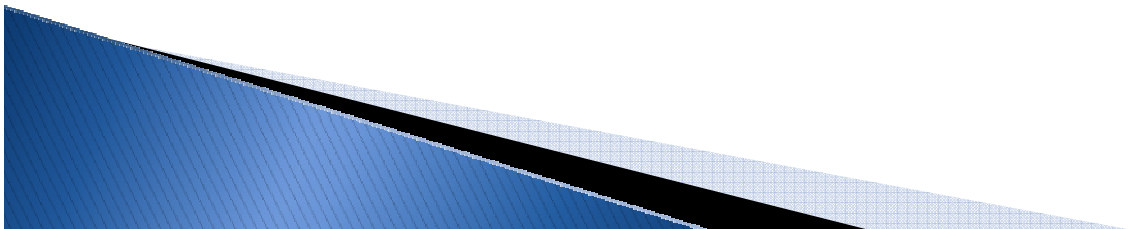
# Formatting Chart Columns (Cont.)

## Formatted chart columns



# Creating a Combination Chart

- ▶ Add a data series in an existing chart that you want to appear as another chart type.
- ▶ Select the data series you recently added.
- ▶ In the Type group on the Chart Tools Design tab, click the Change Chart Type button, and then click the chart type you want.
- ▶ Click the OK button.



# Creating a Combination Chart

