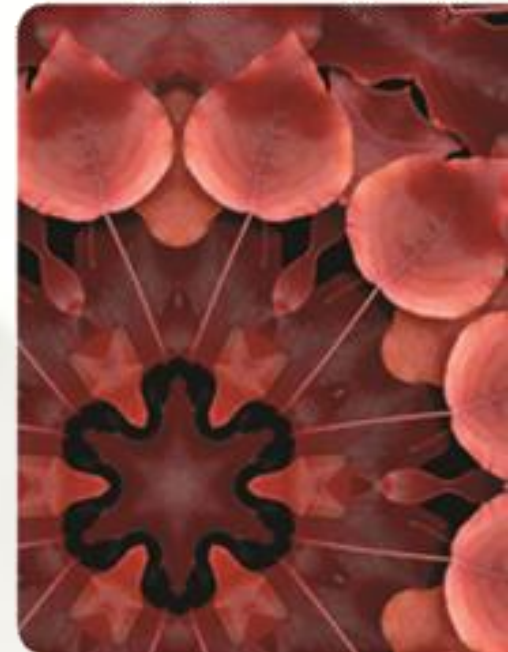


Excel Tutorial 4

Working with Charts and Graphics



Objectives

- Create an embedded chart
- Work with chart titles and legends
- Create a pie, 3D, column, and line charts
- Use custom formatting with chart axes
- Work with tick marks and scale values
- Create and format a combined chart
- Insert and format a graphic shape
- Create a chart sheet

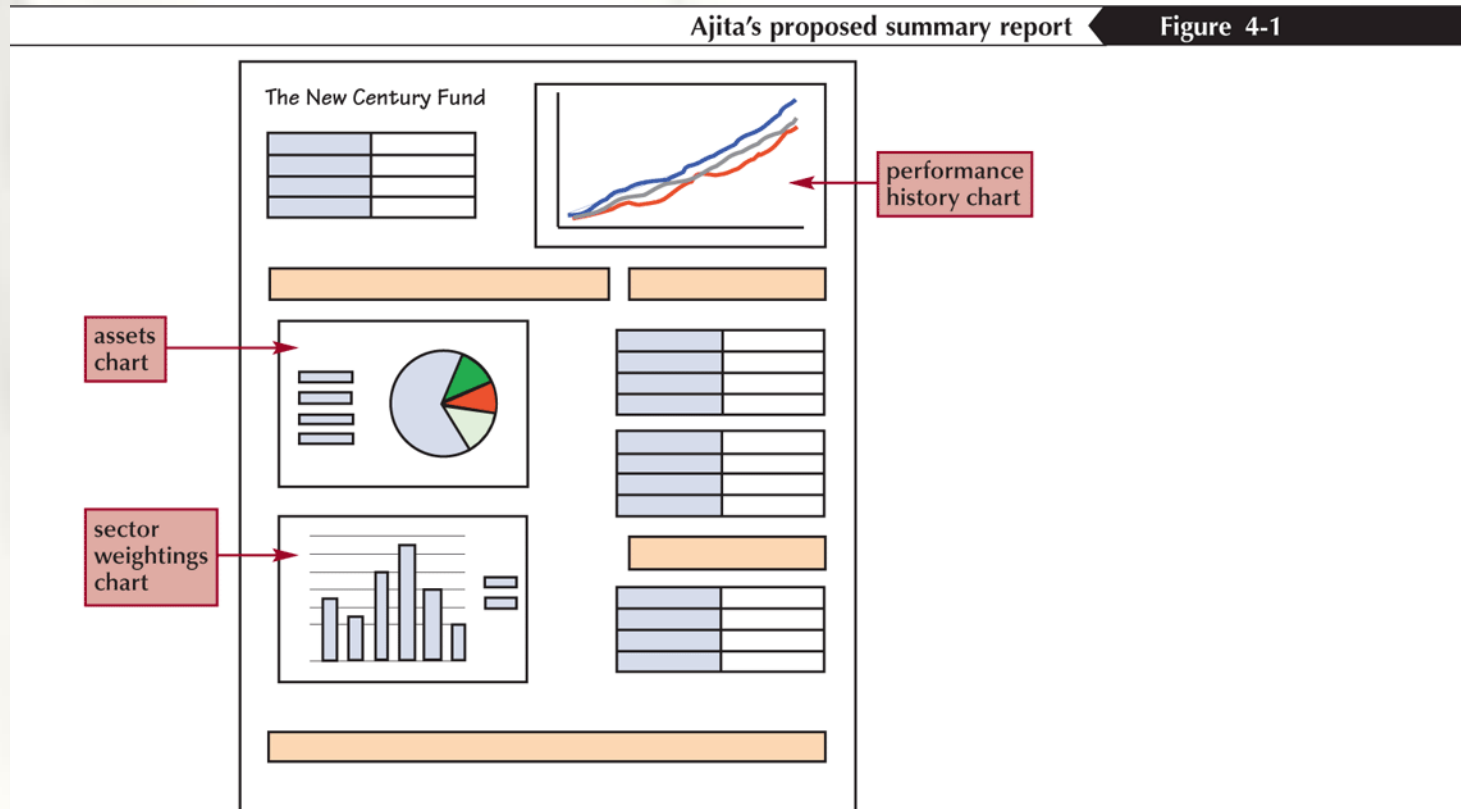


Creating Charts

- A **chart**, or **graph**, is a visual representation of a set of data
- 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
- In the Location group on the Chart Tools Design tab, click the Move Chart button to place the chart in a chart sheet or embed it into a worksheet



Creating Charts



Selecting a Data Source

- The **data source** is the range that contains the data you want to display in the chart:
 - Data series; Series name; Series values; Category values

Figure 4-2

Data source selected for the assets chart

The screenshot shows an Excel spreadsheet with the following data:

Investment Category	Assets
Cash	\$ 6,144
U.S. Stocks	\$ 49,001
Non-U.S. Stocks	\$ 8,035
Bonds	\$ 13,077
Other	\$ 2,520
Total Assets	\$ 78,777 mil

Annotations in the image:

- category values:** Points to the 'Investment Category' column (rows 4-8).
- series name:** Points to the 'Assets' column header (row 3).
- series values:** Points to the numerical values in the 'Assets' column (rows 4-8).

Selecting a Chart Type

Categories of Excel chart types

Figure 4-3

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.

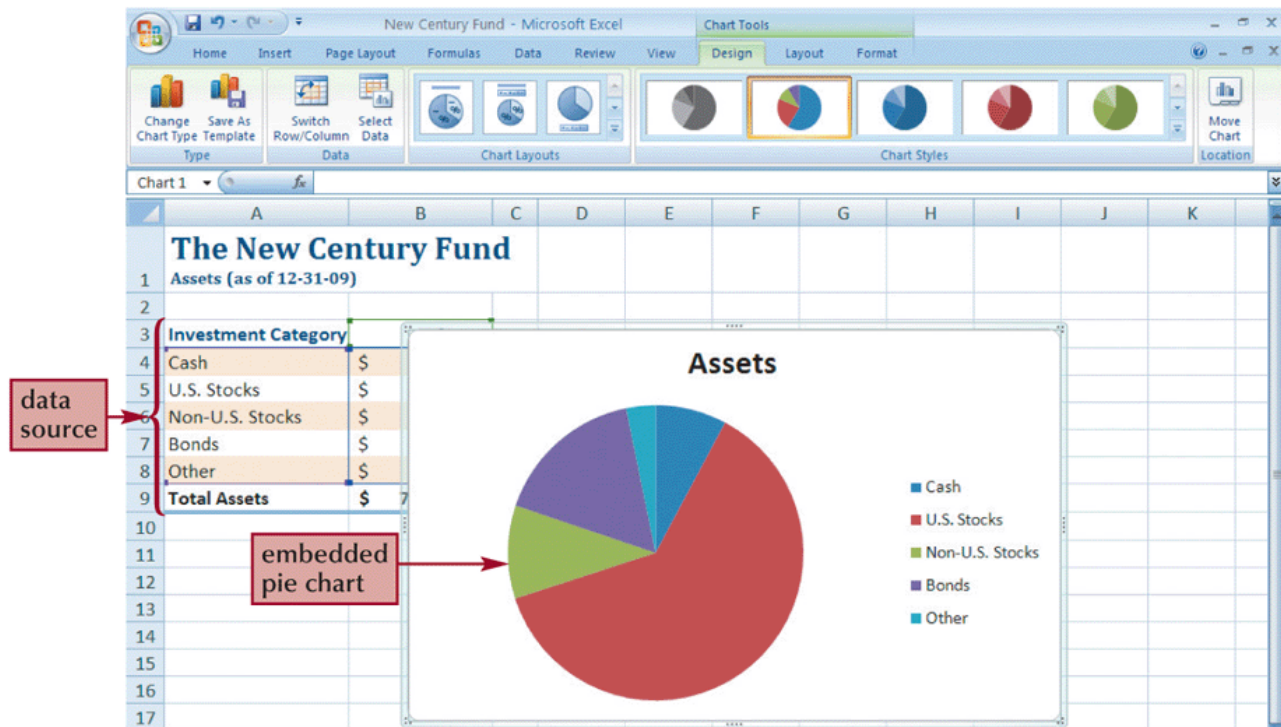


Selecting a Chart Type

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

Figure 4-4

Pie chart inserted in the Assets sheet

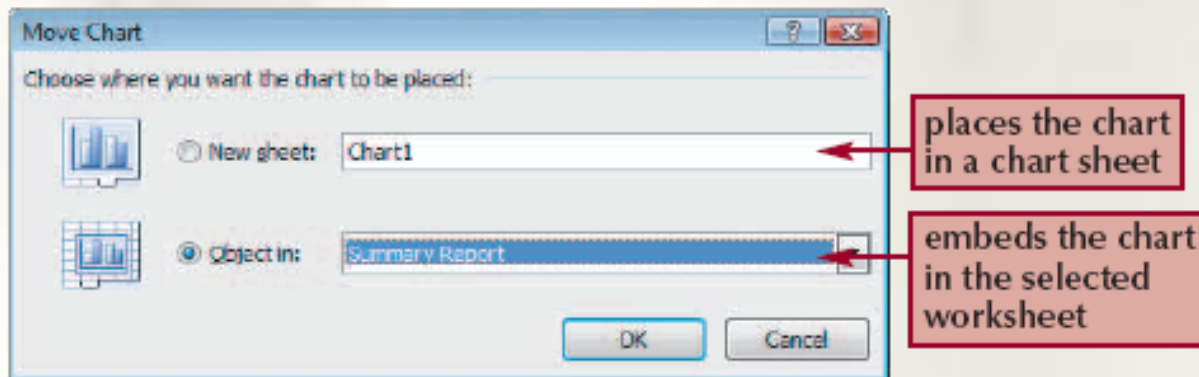


Moving and Resizing Charts

- 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

Move Chart dialog box

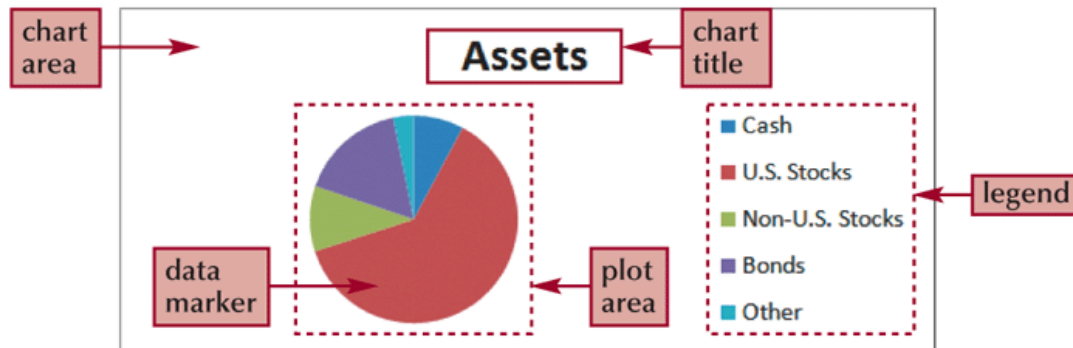
Figure 4-5



Selecting Chart Elements

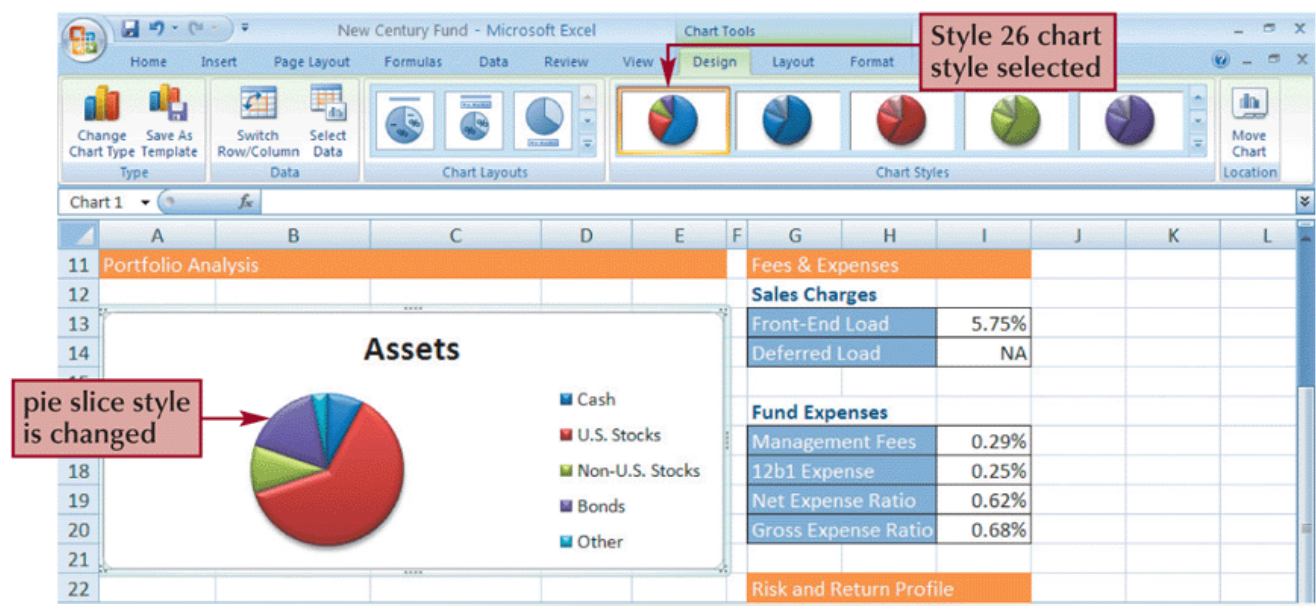
Common chart elements

Figure 4-7



Choosing a Chart Style and Layout








Figure 4-8 Style 26 chart style applied



Choosing a Chart Style and Layout

Figure 4-9

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

Working with the Chart Title and Legend

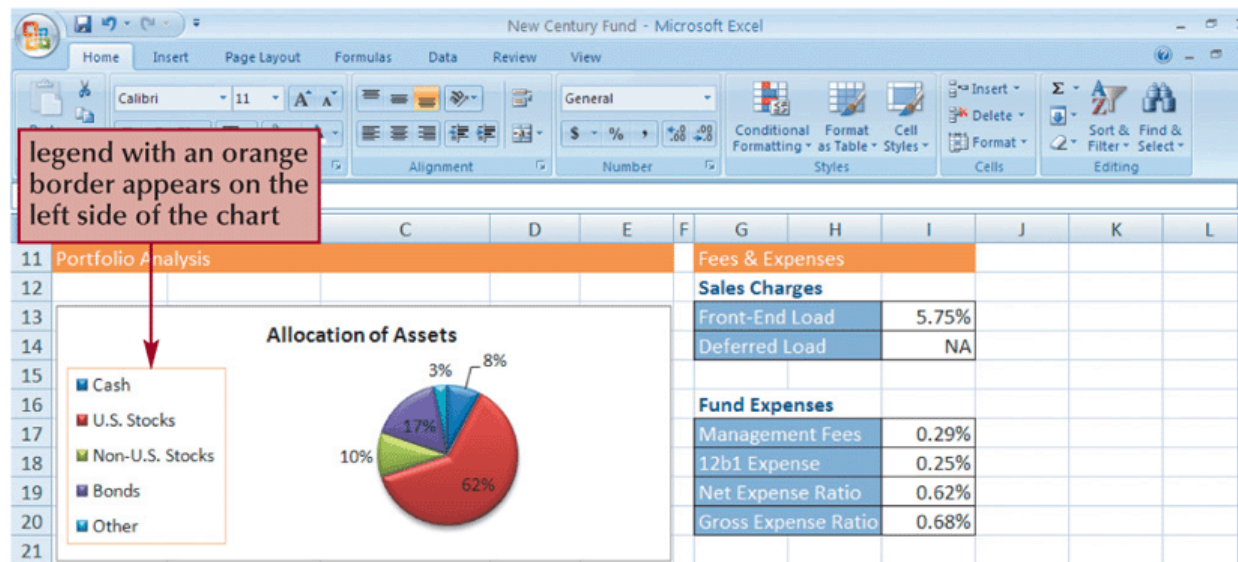
- Click the chart title to select it
- Type the chart title, and then press the **Enter** key
- Click the **Chart Tools Layout** tab on the Ribbon
- In the Labels group, click the **Legend** button, and then click the desired legend position



Working with the Chart Title and Legend

Chart legend moved and formatted

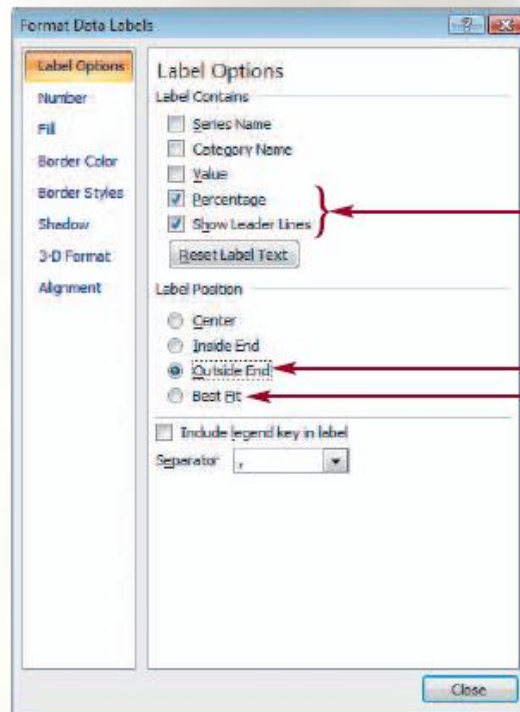
Figure 4-13



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**

Figure 4-14 Label Options in the Format Data Labels dialog box



checked options appear in the data labels

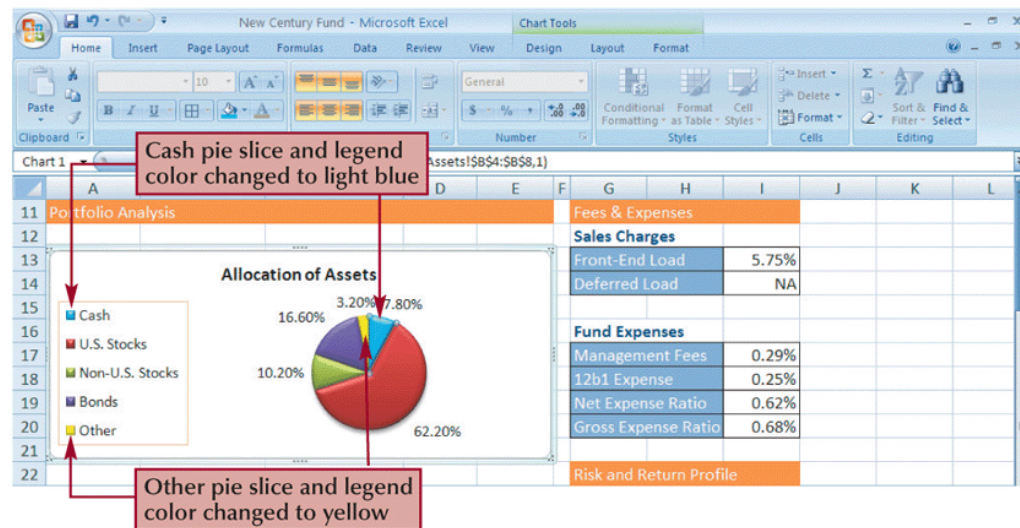
places data labels outside of the pie

places the data labels where they fit best

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

Figure 4-16 Pie slices with new colors

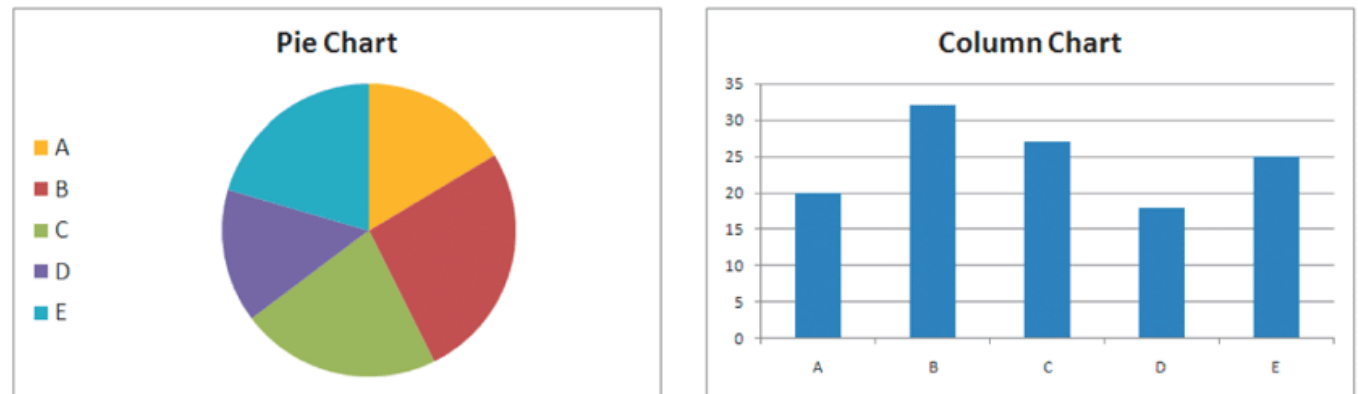


Creating a Column Chart

- 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

Figure 4-21

Same data displayed as a pie chart and a column chart

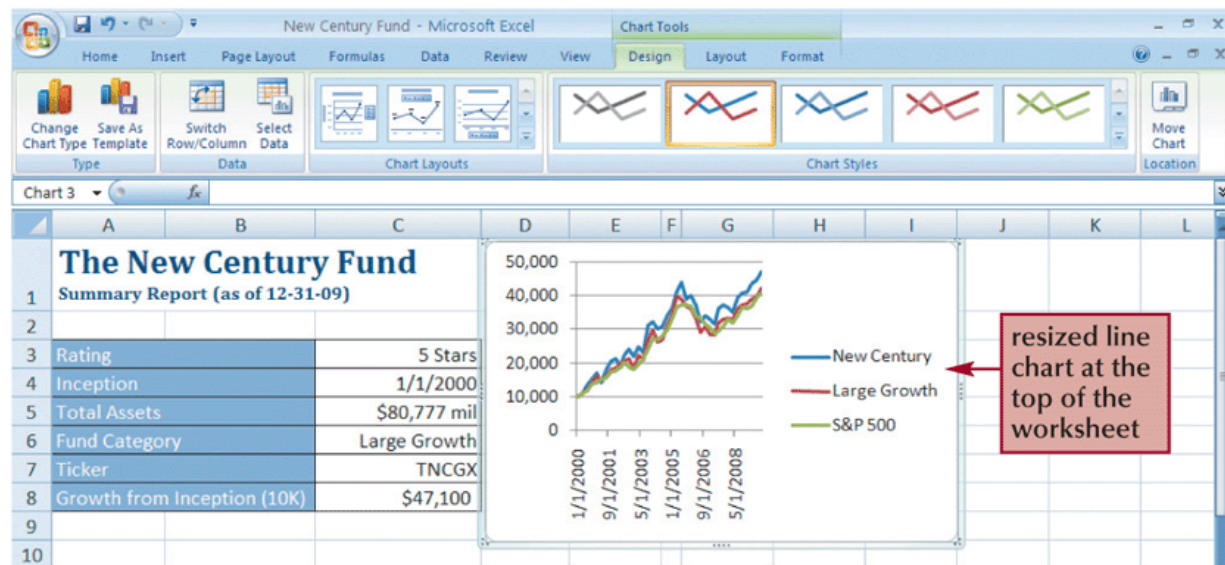


Creating a Line Chart

- Select the range
- Click the **Insert** tab on the Ribbon
- In the Charts group, click the **Line** button, and then click the **Line** chart

Figure 4-28

Moved and resized line chart



Formatting

- Click the **Chart Tools Layout** tab on the Ribbon

Date intervals for tick marks

Figure 4-29

The screenshot shows the 'Format Axis' dialog box with the 'Axis Options' tab selected. The 'Axis Options' section is expanded, showing the following settings:

- Minimum: Auto Fixed 1/1/2000
- Maximum: Auto Fixed 1/1/2009
- Major unit: Auto Fixed 2 Years
- Minor unit: Auto Fixed 1 Years
- Base Unit: Auto Fixed Months

Annotations with red arrows point to the 'Major unit' and 'Minor unit' settings:

- The 'Major unit' setting (Fixed 2 Years) is annotated with the text: "sets the major tick marks at two-year intervals".
- The 'Minor unit' setting (Fixed 1 Years) is annotated with the text: "sets the minor tick marks at one-year intervals".

Other settings in the dialog include:

- Dates in reverse order
- Axis Type: Automatically select based on data, Text axis, Date axis
- Major tick mark type: Outside
- Minor tick mark type: None
- Axis labels: Next to Axis
- Vertical axis crosses: Between dates, At date: 1/1/2000, At maximum date
- Position Axis: On tick marks, Between tick marks

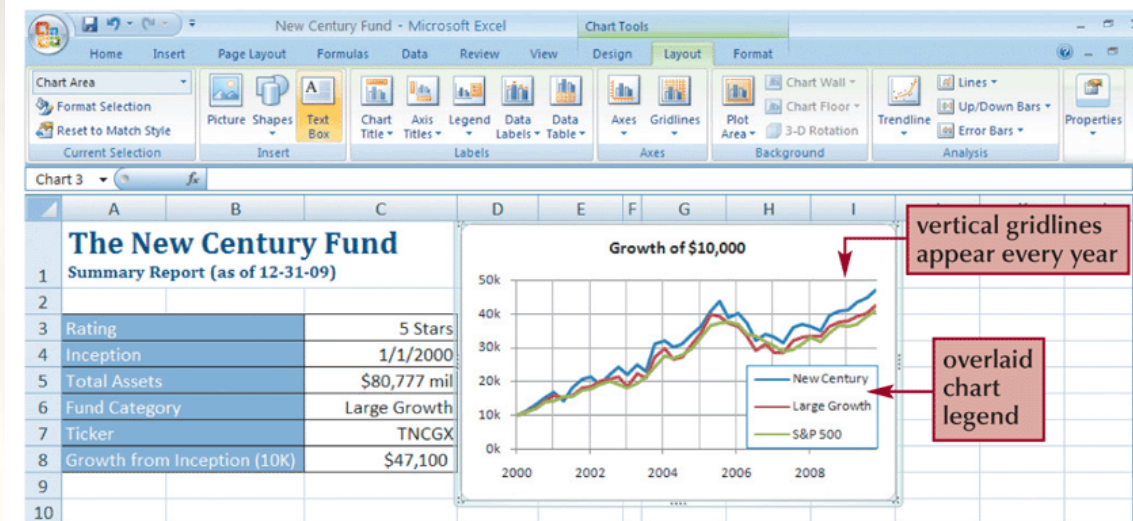
A 'Close' button is located at the bottom right of the dialog box.

Overlaying a Legend

- In the Labels group on the Chart Tools Layout tab, click the **Legend** button, and then click **More Legend Options**
- Click the **Show the legend without overlapping the chart** check box to remove the check mark

Final line chart

Figure 4-33



Adding a Data Series to an Existing Chart

- Select the chart to which you want to add a data series
- In the Data group on the Chart Tools Design tab, click the Select Data button
- Click the Add button in the Select Data Source dialog box
- Select the range with the series name and series values you want for the new data series
- Click the OK button in each dialog box



Adding a Data Series to an Existing Chart

Edit Series dialog box

Figure 4-35

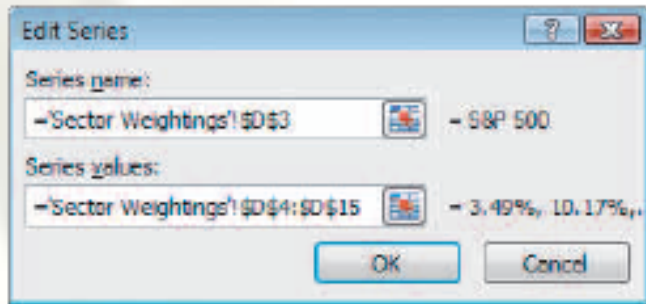
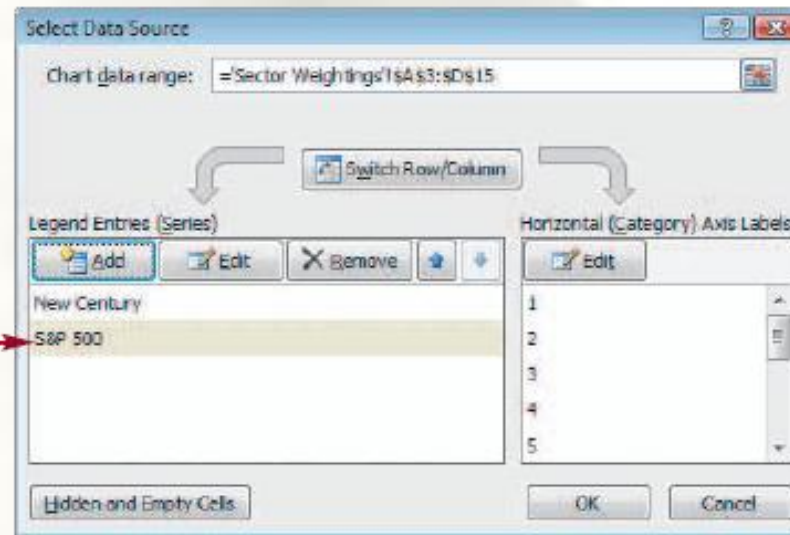


Figure 4-36

Select Data Source dialog box

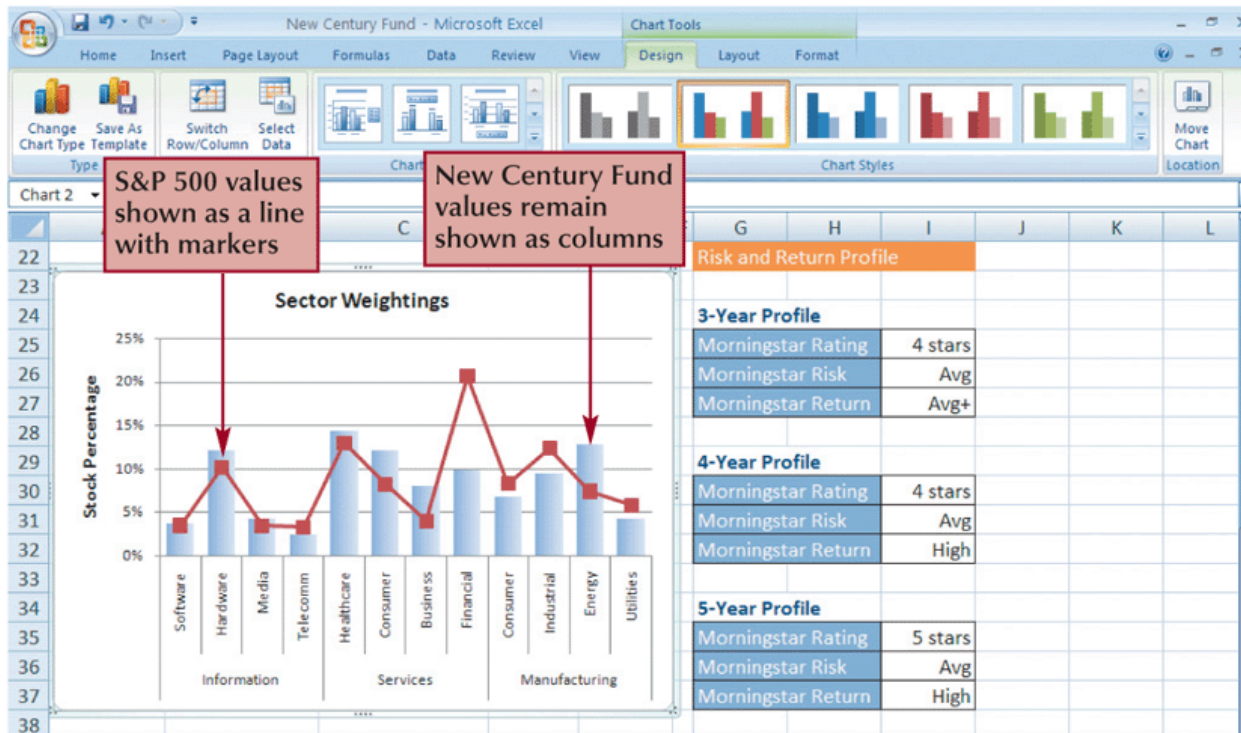
data series added to the chart



Creating a Combination Chart

Combination chart

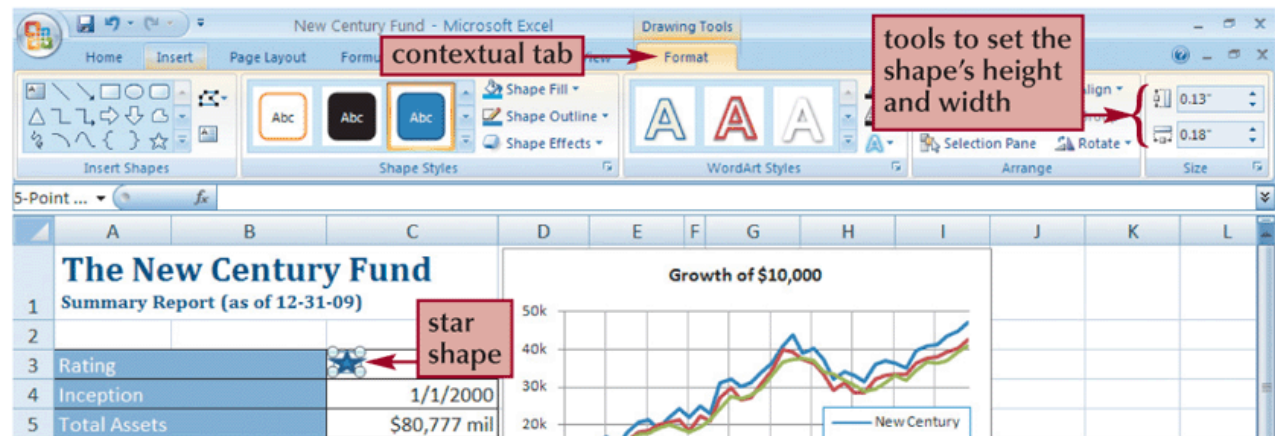
Figure 4-38



Inserting a Shape

- Click the **Insert** tab on the Ribbon
- In the Illustrations group, click the **Shapes** button, and then choose the shape you want
- Draw the shape in your worksheet

Figure 4-41 Star shape embedded in cell C3



Aligning and Grouping Shapes

Figure 4-42 Grouped and aligned star shapes

