CHAPTER 6

CHARTS

Chapter Objectives

By the time you finish this chapter, you should be able to identify the following terms:

- ❑ Chart
- ❑ Embedded chart
- ❑ Chart sheet
- ❑ Chart type
- ❑ Column chart
- ❑ Bar chart
- ❑ Line chart
- ❑ Pie chart
- ❑ Chart Wizard
- ❑ Legend
- ❑ X-axis
- ❑ Y-axis
- ❑ Data series
- ❑ Sizing handles
- ❑ Exploded pie

By the time you finish this chapter, you should be able to perform the following tasks:

- ❑ Create an instant chart
- ❑ Create a chart using Chart Wizard
- ❑ Apply and modify chart elements
- ❑ Move, size, and copy a chart
- ❑ Change chart type
- ❑ Format a chart
- ❑ Print a chart sheet and an embedded chart

INTRODUCTION

All of your worksheets up to this point have been tables of data. Tables of data are useful but sometimes difficult to read. Turning your raw numbers into charts enables you to convey the information graphically. Charts are an effective way to convey a message to an audience, and they are easy to create. In this chapter, you will learn to create many different types of charts. You will also learn how to print charts in a number of different ways.

CHART BASICS

In this section, we will learn the basic elements of an Excel chart. A **chart**, in its simplest terms, is a graphical representation of numerical data. A chart can take the form of lines, bars, columns, pie slices, and cones, among others. Charts are useful for tracking data, comparing the sales of products, comparing items as they contribute to a whole, and for any other reason you feel that your data would be best displayed as a chart. The chart below displays the major elements of a chart.

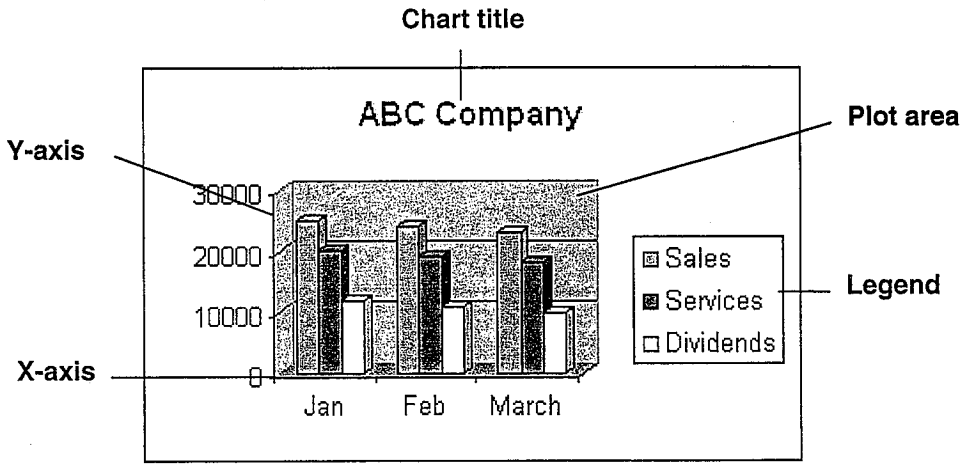


Figure 6.1: Chart Elements

Chart Title

The **chart title** is the main heading of a chart. It gives the viewer a one- or two-line description of what is being displayed. A company name and a worksheet title are two common examples of what you might use as a chart title.

Chart Area

The **chart area** is where all of your chart elements are stored. The chart axes, legend, plot area, and chart title are inside the chart area. You are actually selecting the chart area when you select the entire chart for copying, moving, and printing.

Plot Area

The **plot area** is the rectangular area bounded by the two axes. This area also exists around a pie chart. A pie chart does not exceed the plot area when the wedges are extracted.

Legend

The **legend** is a box that explains the patterns and/or colors of the bars, columns, or lines used to differentiate data series in a chart. A **data series** is the complete set of values that make up one bar, column, slice, or line in a chart. By default, the legend appears to the right of the chart, but it can be moved to other positions in the chart area.

Axes

The **x-axis,** also known as the category axis, is the horizontal line running along the bottom of the chart. The x-axis displays labels that make up the categories of data that you are charting. The **y-axis,** also known as the value axis, is the vertical line running up the left side of the plot area displaying a range of values that are being plotted. A **z-axis** is used for the third dimension in 3-D charts.

Embedded Charts and Chart Sheets

Charts take on one of two forms: *embedded charts* or *chart sheets*. An **embedded chart** is a chart created on the same worksheet with the data. This method works well if you want to be able to print the chart as well as the data on the same page. You also have the option of printing the chart on its own page. A **chart sheet** is a chart created from worksheet data but stored in its own worksheet that is automatically created and added to the workbook when you create the chart. A chart sheet prints on a full page and displays no worksheet data.

When the values change in a range linked to a chart, the associated chart automatically updates to reflect the change.

Default Chart

If you are really in a rush to create a chart, select the entire table and press the **F11** key. This automatically creates a simple two-dimensional **Column** chart as a separate chart sheet. You can then modify the chart to fit your needs.

Chart Wizard

Although creating an instant chart is fast and easy, the Chart Wizard is probably the most popular way to create a chart. The **Chart Wizard** is a series of dialog boxes that guides you step by step through the creation of a chart.

Chart Types

Even though there are 14 different chart types available in Excel, we will focus on the four most popular chart types: **Line, Column, Bar,** and **Pie.**

Line Charts

Line charts are composed of thin horizontal lines and are most useful when tracking data over a period of time. Tracking a hot stock and tracking sales trends are good uses for a line chart.

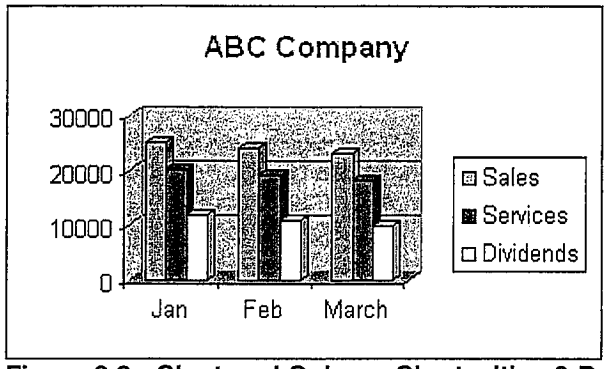


Figure 6.2: Clustered Column Chart with a 3-D Visual Effect

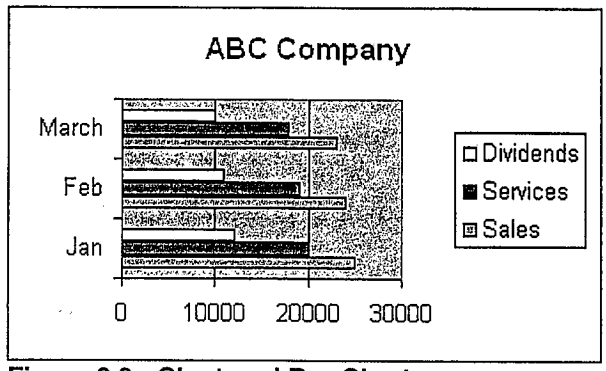


Figure 6.3: Clustered Bar Chart

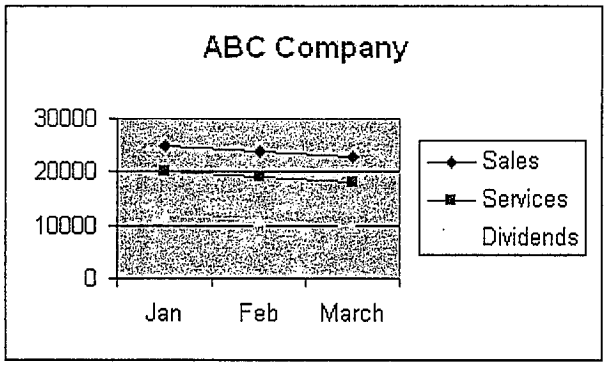


Figure 6.4: Line Chart with Markers

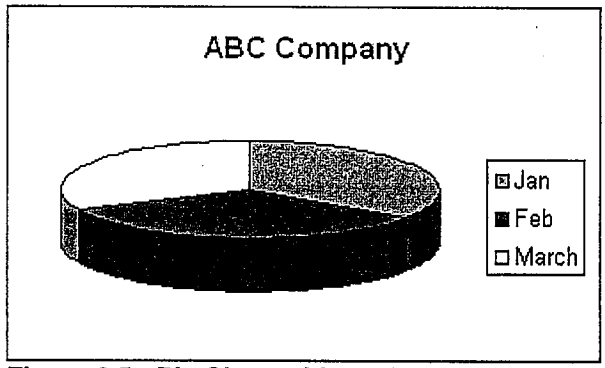


Figure 6.5: Pie Chart with a 3-D Visual Effect

Column Charts

Column charts are composed of thick vertical bars that are used for comparison purposes. Comparing the sale of different products and comparing the monthly revenue amounts are good uses for a column chart.

Bar Charts

Bar charts are similar to column charts in that they use long bars to represent the data with one difference—the bars in a bar chart lie horizontally across the plot area, as Figure6.3 shows.

Pie Charts

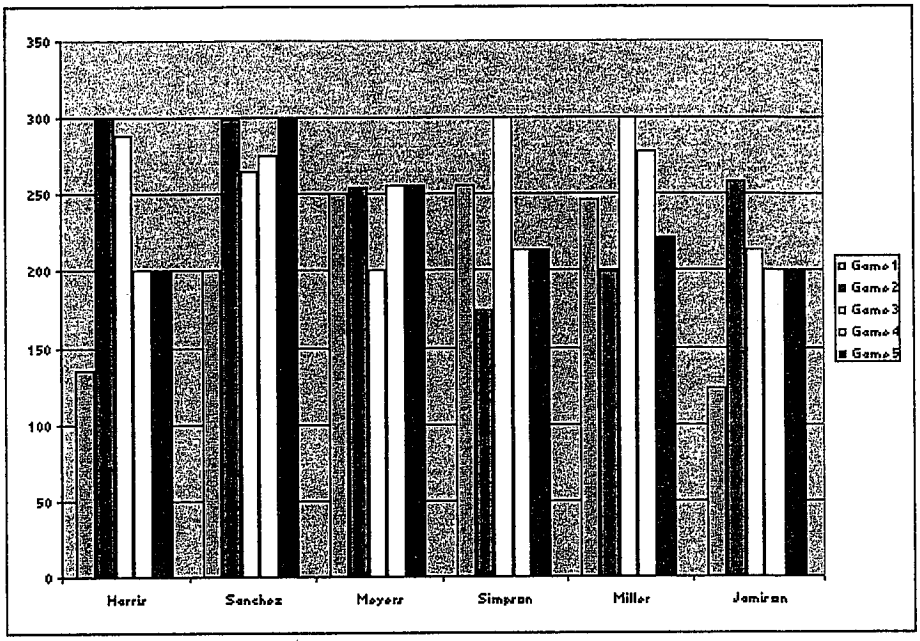
Pie charts are used to show a percentage of a whole. Pie charts are useful when you want to illustrate percent amounts for a whole such as revenue or expense totals for a period.

Chart Options

After you create a chart, there are many options that you can use to make it more effective. These options include titles, plot area gridlines, colors, and x- and y-axis labels.

One important thing to remember when applying options to your chart is to make sure that the chart conveys the proper message. It is a common mistake to dress up a chart so much that the original message of the chart gets lost.

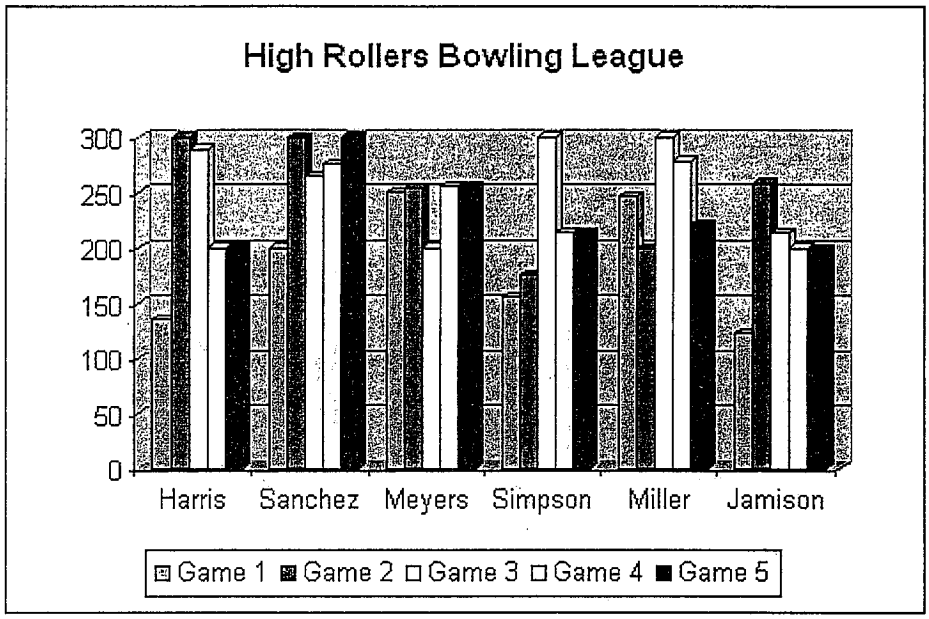
Exercise 6-1 Create an Instant Chart Based on Selected Data



I. Open the **Ex 2-12 My Bowling League** workbook from your work disk, and save it as **Ex 6-1 My Bowling League** to your work disk.
II. Create an instant chart.
   a. Select **Range A6:F12.**
      i. The scores are selected but the statistical data is not.
   b. Press and release the **F11** key.
      i. A two-dimensional **Clustered Column** chart sheet is created based on all of the scores.
III. Name **Chart1 League Bar Chart.**
IV. Name **Sheet1 Scores.**
V. Identify chart elements like legend, x-axis, y-axis, and plot area.
VI. Click the **Scores** sheet tab to make the data sheet active.
VII. Create an instant chart.
   a. Select **Range A6:C12,** and then press and release the **F11** key.
      i. A two-dimensional **Clustered Column** chart sheet is created based on the **Game 1** and **Game 2** data.
VIII. Name the new chart sheet **Game 1 and Game 2.**
IX. Print the **League Bar Chart** worksheet.
X. Make the **Scores** worksheet active.
XI. Save the workbook, and leave it open.

Exercise 6-2 Create a Chart Using the Chart Wizard

I. Open the **Ex 6-1 My Bowling League** workbook from your work disk if necessary, and save it as **Ex 6-2 My Bowling League** to your work disk.
II. Use the Chart Wizard to create a chart.
   a. Select **Range A6:F12**, and click **Insert, Chart** on the **Menu bar.**
      i. The **Chart Wizard** dialog box is activated.



b. Select **Column** from **Chart type** list, select **Clustered column with a 3-D visual effect** from the **Chart sub-type** list, and then click **Next.**
   i. The wizard advances to **Step 2 of 4.**
c. Look at the chart preview, and then click **Next.**
   i. The wizard advances to **Step 3 of 4.**
d. Click inside the **Chart title** field and keyboard **High Rollers Bowling League.**
   i. The chart title is set.
e. Click the **Legend** tab.
f. Select **Bottom** in the **Placement** section, and then click **Next.**
   i. The legend is relocated below the chart and the wizard advances to **Step 4 of 4.**
g. Click **Finish.**
   i. The chart is created and inserted into the worksheet; it covers some of the worksheet data.

III. Save the workbook, and leave it open.

Resize, Move, and Copy a Chart

Once you create your chart, you may want to adjust its size or position on the screen. To resize a chart, click and drag the sizing handles on a selected chart. **Sizing handles** are the small black squares on a selected chart. To move a chart to another area on the worksheet without changing the size, click in the worksheet area and drag it to the new location. A ghosted chart outline appears on screen while you are dragging. Release the mouse button to place the chart in the new location.

If you wish to have a copy of your chart, simply hold down the **Ctrl** key while dragging; you will create a copy of the chart. The copy and paste procedures discussed in Chapter 5 also work with charts.

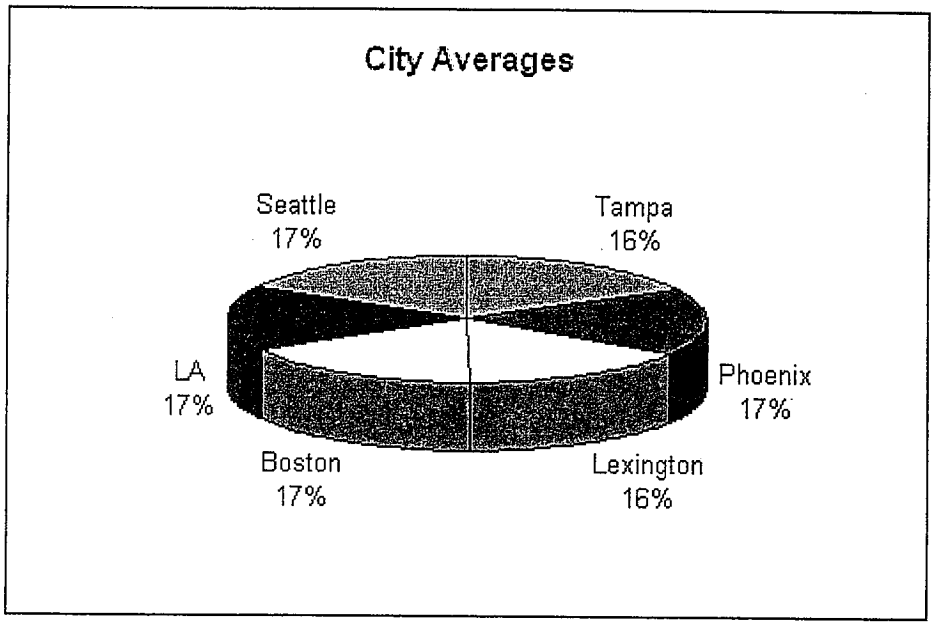
Exercise 6-3 Resize, Move, Copy, and Delete a Chart

I. Open the **Ex 6-2 My Bowling League** workbook from your work disk, if necessary, and save it as **Ex 6-3 My Bowling League** to your work disk.
II. Scroll down the screen so the entire chart displays on the screen.
III. Move a chart.
  a. Place the mouse pointer just inside the chart area, and then click and hold the left mouse button.
  b. Drag the chart until the chart covers the upper right corner of **cell A30,** and release the mouse button.
    i. The chart is moved.
IV. Resize a chart.
  a. If necessary, click the chart to select it.
    i. Sizing handles surround the chart perimeter.
  b. Click and drag the bottom corner sizing handle approximately **1"** down and **1"** across, and then release the mouse button.
    i. The chart is slightly longer and taller.
  c. Click and drag the right side center sizing handle to the right approximately **1".**
    i. The chart is longer.
V. Practice using the sizing handles to size the chart in other directions, and then return it to its original size.
VI. Cut and paste a chart.
  a. With the chart selected, click **Edit, Cut** on the **Menu bar.**
    i. The chart is removed to the clipboard.
  b. Open **Sheet3** tab, and click **Edit, Paste** on the **Menu bar.**
    i. The chart is pasted in **Sheet3.**
VII. Copy and paste a chart.
  a. With the chart still selected, click the **Copy** button on the **Standard toolbar.**
    i. The chart is copied.
  b. Select **cell A20** on the **Scores** sheet, and then click **Edit, Paste** on the **Menu bar.**
    i. The chart is copied from the **Sheet3** worksheet to the **Scores** worksheet.
VIII. Delete a chart.
  a. Select the chart on the **Sheet3** worksheet, and press and release the **Delete** key.
    i. The chart is deleted.
IX. Delete the chart on the **Scores** sheet.
X. Save, and close the workbook.


Copy button

Sometimes you want to chart data that are in noncontiguous ranges. Pie charts are often based on noncontiguous ranges because pie charts usually deal with totals. To create a chart based on noncontiguous ranges, select the ranges while holding down the **Ctrl** key on the keyboard, and then use the Chart Wizard.

Exercise 6-4 Create Charts Based on Noncontiguous Ranges



I. Open the **Proj 2-5 City Temperatures** workbook from your work disk, and save it as **Ex 6-4 City Temperatures** to your work disk.
II. Name **Sheet1 Temperatures.**
III. Create an instant chart sheet with noncontiguous ranges.
   a. Select **Ranges A6:A12, C6:C12,** and **F6:F12** simultaneously by holding the **Ctrl** key and dragging to select ranges.
      i. The **City, Tuesday,** and **Friday** ranges are selected.
   b. Press the **F11** key.
      i. A chart sheet is created based on the **Tuesday** and **Friday** data with the **Days** in the legend.
IV. Name **Chart1 Tuesday and Friday Temperatures.**
V. Activate the **Temperatures** worksheet, and deselect ranges.
VI. Create an instant chart sheet with noncontiguous ranges.
   a. Select **Ranges A6:G6, A8:G8,** and **A11:G11** simultaneously.
      i. The days of the week, **Phoenix,** and **LA** ranges are selected.
   b. Press the **F11** key.
      i. A chart sheet is created based on the **Phoenix** and **LA** data with the days of the week in the legend.
VII. Name **Chart2 Phoenix and LA.**
VIII. Activate the **Temperatures** worksheet, and deselect ranges.
IX. Create a chart using the Chart Wizard.


Chart Wizard button

   a. Select **Ranges A7:A12** and **H7:H12** simultaneously.
      i. The **City** and **Average** ranges are selected.
   b. Click the **Chart Wizard** button on the **Standard toolbar.**
      i. The **Chart Wizard** dialog box is activated.
   c. Select **Pie** from the **Chart type** list and **Pie with a 3-D visual effect** in the **Chart sub-type** section.

d. Click **Next >.**
   i. The wizard advances to **Step 2 of 4.**
e. Examine the chart in the preview window, and then click **Next >.**
   i. The wizard advances to **Step 3 of 4.**
f. In the **Chart title** field, keyboard **City Averages.**
g. Select the **Legend** tab, and click the **Show Legend** check box to remove the check mark.
   i. The chart will display no legend.
h. Select the **Data Labels** tab, and click the **Show label and percent** option.
   i. The chart will display with labels and percents.
i. Click **Finish.**
   i. An embedded 3-D pie chart is created based on the city average's data.

X. Move the chart below the data area, and slightly increase its size.
XI. Use the Chart Wizard to create a chart sheet with the following characteristics:
   a. **Range: A6:G12**
   b. **Chart type: Bar**
   c. **Chart sub-type: Clustered Bar with a 3-D visual effect**
   d. **Chart title: City Temperatures**
   e. **Category (X) axis: Estimates Only**
   f. **Legend: Bottom**
   g. In **Step 4 of 4** select **As a new sheet,** and click **OK** to insert as a chart sheet.
XII. Name **Chart3 City Bar Chart.**
XIII. Use the Chart Wizard to create a chart sheet with the following characteristics:
   a. **Range: A6:G12**
   b. **Chart type: Line**
   c. **Chart sub-type: Line with markers displayed at each data value**
   d. **Chart title: Daily City Temperatures**
   e. **Legend: Bottom**
   f. **Gridlines: Major** and **Minor gridlines** in the **Category (X) axis**
XIV. Name **Chart4 Daily Temperatures.**
XV. Delete the **Phoenix and LA** worksheet and the **City Bar Chart** worksheet.
XVI. Activate the **Temperatures** worksheet.
XVII. Save, and leave the workbook open.

Chart Formatting

Now that you know how to create basic charts, let's learn how to format them. With Excel's formatting options, you can change the colors of chart elements like the bars and pie slices, format text, and alter data series for the chart axes. You can even separate a slice from a pie chart. This is called **exploding.**

Exercise 6-5 — Modify and Format Chart Elements

I. If necessary, open the **Ex 6-4 City Temperatures** workbook from your work disk, and then save it as **Ex 6-5 City Temperatures** to your work disk.
II. If necessary, activate the **Temperatures** worksheet, and then scroll down the worksheet until the pie chart is completely visible.

III. Format the color of a pie chart slice.
  a. Click the pie slice representing **Boston**.
    i. Handles appear around the pie chart.
  b. Click the **Boston** slice again.
    i. Only the **Boston** slice has handles.
  c. Right-click the **Boston** slice, and select **Format Data Point** from the **Shortcut menu.**
    i. The **Format Data Point** dialog box is activated.
  d. Select a green from the color palette, and click **OK.**
    i. The color of the Boston pie slice is changed.

IV. Create an exploded pie chart.
  a. With the **Boston** slice still selected, slowly click and drag it away from the main pie chart.
    i. The pie slice is exploded (separated) from the main pie chart.

V. Click and drag the slice back so it joins with the main pie chart.
  a. The **Boston** pie slice is part of the main chart again.

VI. Change the **LA** pie slice to a blue color, and explode the slice.

VII. Change a chart title.
  a. Click the chart title **City Averages.**
    i. A box with handles surrounds the title.
  b. Click inside the box.
    i. A flashing cursor displays.
  c. Use the **Backspace** and/or **Delete** keys to change the chart title to **America's City Averages.**

VIII. Format a data label.
  a. Right-click the percent value representing **LA,** and select **Format Data Labels** from the **Shortcut menu.**
    i. The **Format Data Labels** dialog box is activated.
  b. Click the **Number** tab. Enter **2** in the **Decimal places** field, and click the **Font** tab.
  c. Select **Bold Italic** from the **Font style** list and **Red** from the **Color** drop-down list. Click **OK.**
    i. The data labels and percent values are in red, bold italic type.

IX. Change the background color.
  a. Right-click in the chart area, and select **Format Chart Area** from the **Shortcut menu.**
    i. The **Format Chart Area** dialog box is activated.
  b. If necessary, click the **Patterns** tab.
  c. Choose a light gray from the color palette, and click **OK.**
    i. The background color of the chart is changed.

X. Change the chart type.
  a. Click the **Daily Temperatures** sheet tab.
  b. Right-click the chart, and select **Chart type** from the **Shortcut menu.**
    i. The **Chart Type** dialog box is activated.
  c. Select **Column** from the **Chart type** list and **Stacked Column** from the **Chart sub-type** section, and then click **OK.**

i. The chart is changed to a **Stacked Column** chart.

XI. Format a data series.
   a. Right-click the portion of the stacked bar chart that represents **Boston,** and select **Format Data Series** from the **Shortcut menu.**
      i. Handles appear on each blue section, and the **Format Data Series** dialog box is activated.
   b. Select a yellow from the color palette, and click **OK.**
   c. The color of the column portion of the chart is changed.

XII. Change the name of the **Daily City Temperatures** worksheet to **Temperatures Stacked Chart.**

XIII. Format a legend.
   a. Right-click the legend, and select **Format Legend** from the **Shortcut menu.**
      i. The **Format Legend** dialog box is activated.
   b. Select the **Font** tab, **Bold Italic** from the **Font style** list, **Blue** from the **Color** drop-down list, and click **OK.**
      i. The legend is formatted.

XIV. Save the workbook, and leave it open.

Print Charts

Printing a chart is easy. With an embedded chart, you have two different print modes available. Either you can print the chart along with the worksheet data, or you can print it individually on a full page. To print the embedded chart with the rest of the worksheet data, just make sure the chart is not selected, and then print as usual. To print the embedded chart on a full page, simply select the chart, and print by using the **Print** button on the **Standard toolbar** or by using the **Print** dialog box. To print a chart sheet, make the sheet active, and then print using the same methods as printing an embedded chart. It is always a good idea to print preview the chart before you print it.

Exercise 6-6 **Print Charts**

I. If necessary, open the **Ex 6-5 City Temperatures** workbook on your work disk, and save it as **Ex 6-6 City Temperatures** to your work disk.

II. If necessary, make **cell A1** active in the **Temperature** worksheet.

III. Set the page orientation to **Landscape.**

IV. Print an embedded chart with worksheet data.
   a. Print preview the worksheet.
   b. Verify that it will print on one page only, and make adjustments if necessary.
   c. Add your name as header in the upper right, and insert the current date as a footer in the bottom center.
   d. Click the **Print** button on the **Standard toolbar.**
      i. The worksheet prints with the data and the chart.

V. Print the embedded chart.
   a. Select the pie chart.
   b. Print preview the worksheet.
      i. The chart should take up a whole page.

c. Close the **Print Preview** window, and then print the chart.
   i. The chart prints on a full page.

VI. Print a chart sheet.
   a. Click the **Temperatures Stacked Chart** worksheet, and then print the chart.
      i. The chart prints on a full page.

VII. Change the chart type to a **Clustered bar with a 3-D visual effect.**

VIII. Move the legend to the right of the chart, and then print the chart sheet.
   a. The chart prints on a full page.

IX. Save, and close the workbook.

CHAPTER SUMMARY

- A **chart** is a graphical representation of numeric data.
- Charts take the form of bars, columns, lines, and pie slices, among others.
- An **embedded chart** is a chart illustrated on the same worksheet as the data.
- A **chart sheet** is chart illustrated on its own worksheet.
- The **Chart Wizard** is a series of dialog boxes that guides you step by step through the creation of a chart.
- Charts contain many elements such as plot area, chart area, legend, titles, axes labels, and x- and y-axes.
- An **instant chart** can be created based on selected data by pressing the **F11** key.
- **Sizing handles** are used to resize a chart.
- Separating a slice from a pie chart is called **exploding.**
- A **data series** is one set of values that make up a single bar in a column, line, or bar chart.
- The chart heading is another name for the **chart title.**
- The **x-axis** is the horizontal line running along the bottom of the chart, and it is made up of labels.
- The **y-axis** is the vertical line running up the left side of a chart, and it is made up of values.
- The **legend** is a box that explains the patterns and/or colors of the bars, columns, or lines used to differentiate data series in a chart.
- To format a chart element, right-click the element you wish to format, and choose the appropriate command from the **Shortcut menu.**
- To print an embedded chart with the worksheet data, print the worksheet as you would any other worksheet.
- To print an embedded chart on a full page, select the chart, and then print.
- Print a chart sheet by making the chart sheet active and then printing it.

CHAPTER 6 PROJECTS

Project 6-1 Create and Print a Chart

Wave Runner Surf Shop

Summary Inventory Worksheet

Item Sales	June	July	August	September	October	Total
T-shirts	$ 10,375	$ 12,887	$ 12,451	$ 7,141	$ 5,129	$ 47,983
Sunglasses	5,754	2,932	10,333	7,229	9,197	35,445
Boogie Boards	8,856	10,812	14,609	6,350	10,263	50,890
Hobie Surfboards	5,611	7,913	8,860	4,988	9,416	36,788
Wave Runner Surfboards	8,539	6,859	7,379	6,399	9,310	38,486
Total	$ 39,135	$ 41,403	$ 53,632	$ 32,107	$ 43,315	$ 209,592

I. Open the **Ex 4-8 Wave Runner Surf Shop** workbook from your work disk, and save it as **Proj 6-1 Wave Runner Surf Shop** to your work disk.

II. Create an embedded chart based on the **Range A8:F13** in the **Daytona Beach** worksheet with the following elements:
   a. **Chart type: Bar**
   b. **Chart sub-type: Clustered bar with a 3-D visual effect**
   c. **Chart title: Daytona Beach Sales**
   d. **Legend: Bottom**
   e. **Gridlines: Category (X) axis, Major gridlines**

III. Place the chart below the data, and make it as wide as the table and a little taller.

IV. Change the color of the **Wave Runner Surfboard** line to a green.

V. Change the background color of the chart area to a light blue.

VI. Format the legend to **Bold Italic** type.

VII. Create an embedded chart based on **Range A8:F13** in the **New Smyrna Beach** worksheet with the following elements:
   a. **Chart type: Line**
   b. **Chart sub-type: Line with markers displayed at each data value**
   c. **Chart title: New Smyrna Beach Sales**
   d. **Legend: Bottom**
   e. **Gridlines: Category (X) axis, Major gridlines**

VIII. Place the chart below the data, and make it as wide as the table.

IX. Change the color of the **Wave Runner Surfboard** bar to a green.

X. Change the background color of the chart area to an orange.

XI. Format the legend to **Bold Italic** type.

XII. Create a chart sheet based on **Ranges B8:F8** and **B15:F15** in the **Summary** worksheet with the following elements:

a. **Chart type: Pie**
b. **Chart sub-type: Pie with a 3-D visual effect**
c. **Chart title: Wave Runner Surf Shop**
d. **Legend: None**
e. **Data Labels: Show label and percent**

XIII. Name **Chart 1 Monthly Totals Pie Chart.**

XIV. Create a formula to add all of the items sales over the four months on the **Summary** worksheet, and format **Range G8:G15** to match the rest of the data. See illustration on previous page.

XV. Create a chart sheet based on **Ranges G9:G13** and **A9:A13** in the **Summary** worksheet with the following elements:

a. **Chart type: Pie**
b. **Chart sub-type: Pie with a 3-D visual effect**
c. **Chart title: Wave Runner Surf Shop**
d. **Legend: None**
e. **Data Labels: Show label and percent**

XVI. Name **Chart2 Item Totals 3-D Pie Chart.**

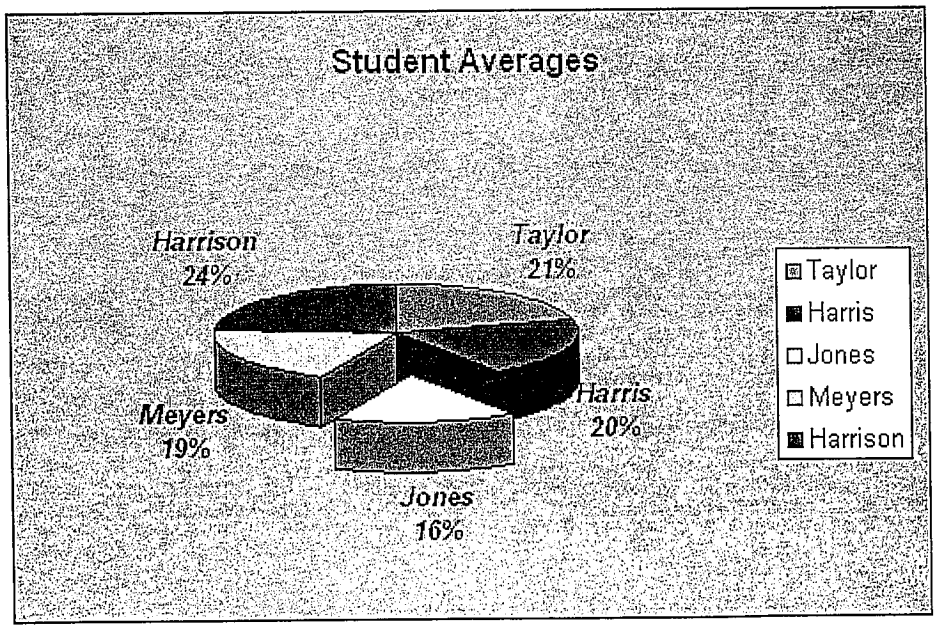
XVII. Go to each sheet and place your name as a header in the upper left.

XVIII. Print each chart sheet.

XIX. Print the **New Smyrna Beach** worksheet and the **Daytona Beach** worksheet with the chart and the data.

XX. Save, and close the workbook.

Project 6-2 Create, Modify, Print, and Delete a Chart



I. Open the **Ex 3-6 Traci Advanced Placement School** workbook from your work disk, and save it as **Proj 6-2 Traci Advanced Placement School** to your work disk.

II. Create a chart sheet based on **Ranges A6:A11, C6:C11,** and **E6:E11** with the following elements:

a. **Chart type: Column**
b. **Chart sub-type: Clustered column with a 3-D visual effect**
c. **Chart title: English and Algebra**
d. **Legend: Bottom**

III. Format the y-axis values so they are in increments of 5.
   a. Right-click any y-axis value, and select **Format Axis.**
      i. The **Format Axis** dialog box is activated.
   b. Select the **Scale tab,** change the **Major unit** field to **5,** and click **OK.**

IV. Name **Chart1 English and Algebra Chart.**

V. Create an embedded chart based on **Ranges A6:A11** and **F6:F11** with the following elements:
   a. **Chart type: Pie**
   b. **Chart sub-type: Pie with a 3-D visual effect**
   c. **Chart title: Student Averages**
   d. **Legend: None**
   e. **Data Labels: Show label and percent**

VI. Move the chart below the main data area.

VII. Format the data labels to **Bold Italic** type.

VIII. Explode the pie slice representing the lowest percentage.

IX. Change the color of slice representing **Jones** to red.

X. Change the background color of the chart area to light gray.

XI. Print the **English and Algebra** chart sheet, and then delete the chart sheet.

XII. Print the embedded chart on its own sheet and with the data, and then delete the chart.

XIII. Save, and close the workbook.

CHAPTER CHALLENGE

Computer Operator

Open the **Ex 2-2 Pete's Computer Store** workbook, and save it as **Challenge 6-1 Pete's Computer Store** on your work disk. Please create the following charts from the data.

Chart 1
Create a **Clustered column with a 3-D visual effect** chart sheet based on the revenue data. Title the chart **Pete's Computer Store.** Make sure the legend appears below the chart. Change the bar color of the **Sales** bars to a shade of green. Place a subtitle below the title that reads **Six Months' Revenue.** The y-axis labels should be in increments of **250.** Name the chart sheet **Revenue Chart.** Move the chart sheet so it follows **Sheet1.** Print the chart.

Chart 2
Create a **Clustered Bar** chart sheet based on the **January, March,** and **May Expenses** data. Title the chart **Pete's Computer Store.** Show the legend below the chart. Subtitle the chart **Three Months' Expenses.** Format the legend to **Bold Italic** type. Name the chart sheet **Three Months' Expenses Chart.** Print the chart. Change the chart type to a **Line** chart, and then print it again.

Chart 3
Find the total expenses for **Utilities, Rent, Salaries** and **Promotions** over the six-month period and place them in the **Range A16:G16.** Create an embedded **Pie with a 3-D visual effect** chart based on the monthly total expenses. Title it **Total Monthly Expenses.** Place the chart below the data. **Show labels and percentages** instead of a legend. Change the **June** pie slice to a yellow color. Format the label percents so they display with two decimal places. Explode the **February** slice. Print the worksheet with the data and the chart and also print the chart by itself. Copy the chart, and place it on the **Sheet 2** worksheet. Save, and close the workbook.

Thanks
The Boss