

**King Fahd University of Petroleum and Minerals**  
**MIS-105--- Introduction to Computer Applications**  
**Lab#5: Introction to Microsoft Excel**  
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**Graphs and Charts: Delivering a Message**

**Problem Statement**

*Suppose you are working for a software sales business, named 'Superior Software'. Your manager believes that the sales data can be understood more easily from charts than from strict numerical presentation of a worksheet. You have been given an assignment of analyzing the data in the worksheet and developing a series of charts to convey that information.*

The sales data in the worksheet can be presented in several ways---for example by city, by product, or by the combination of the two. After a careful analysis of the problem, you decided to plot charts for representing the following facts.

- What percentage of total revenue comes from each city? From each product?
- What is the dollar revenue produced by each city? By each product?
- What is the rank of each city with respect to sales?
- How much revenue does each product contribute in each city?

Now, your job is to find exactly which type of chart (column, pie, etc.) you will be plotting for the above mentioned facts.

## Chart Background

**Why charts are needed?**

Business has always known that the graphic representation of data is an attractive, easy to understand way to convey information.

**Definitions**

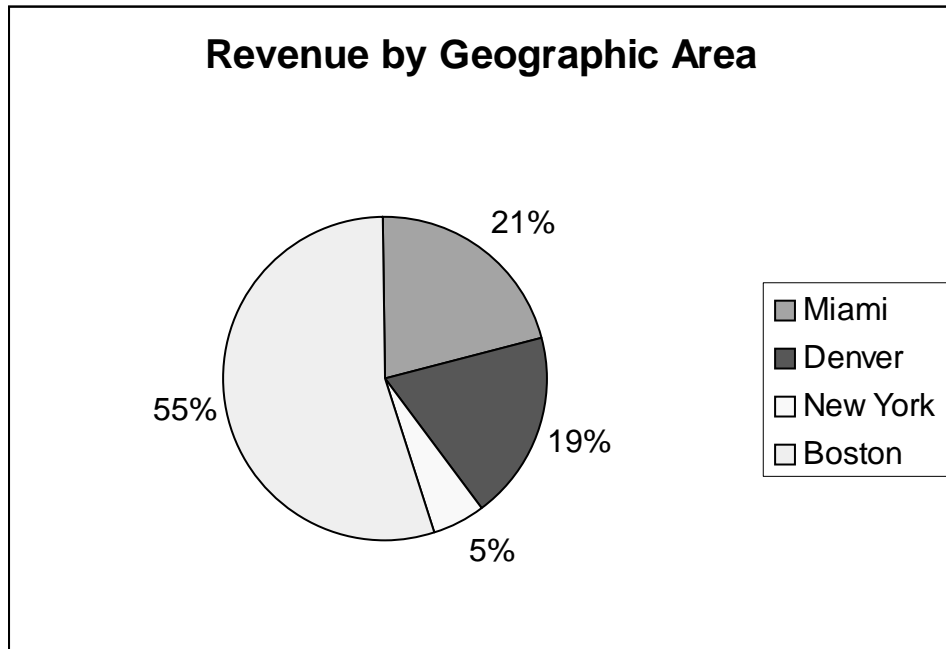
- A **chart** is a graphic representation of data in a worksheet.
- The chart is based on descriptive entries called **category labels**, and on numeric values called **data points**.
- The data points are grouped into one or more **data series** that appear in row(s) or column(s) on the worksheet.
- In every chart there is exactly one data point in each data series for each value of the category label.
- Each type of chart delivers a unique message. ***You cannot create an effective chart unless you are sure of what that message is.***

**Pie charts**

A *pie chart* is that most effective way to display proportional relationships. It is the type of the chart to select whenever words like *percentage*, or *market share* appear in the message to be delivered. The pie, or complete circle, denotes the total amount. Each slice of the pie corresponds to its respective percentage of the total, as shown in figure1.

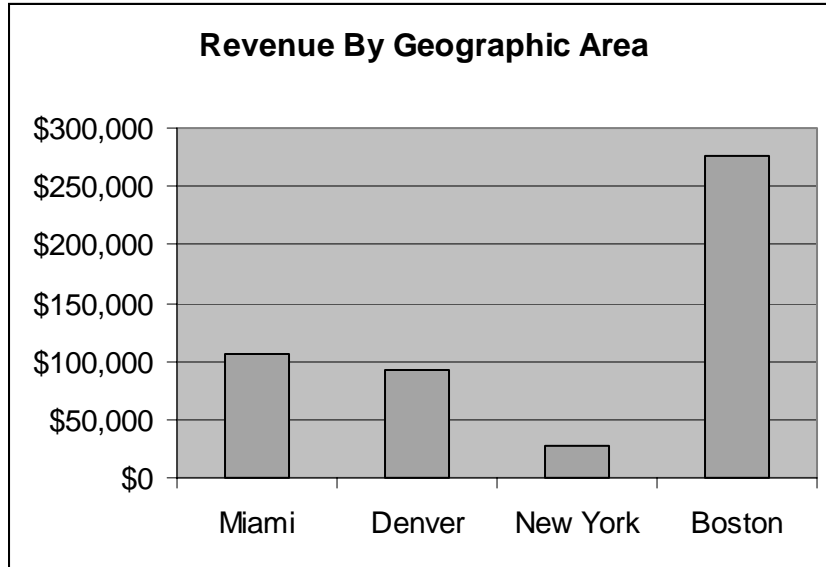
### **Exploded Pie Charts**

Click and drag wedges out of a pie chart to convert an ordinary pie chart to an exploded pie chart. For best results pull the wedges only slightly from the main body of the pie.



### **Column and Bar Charts**

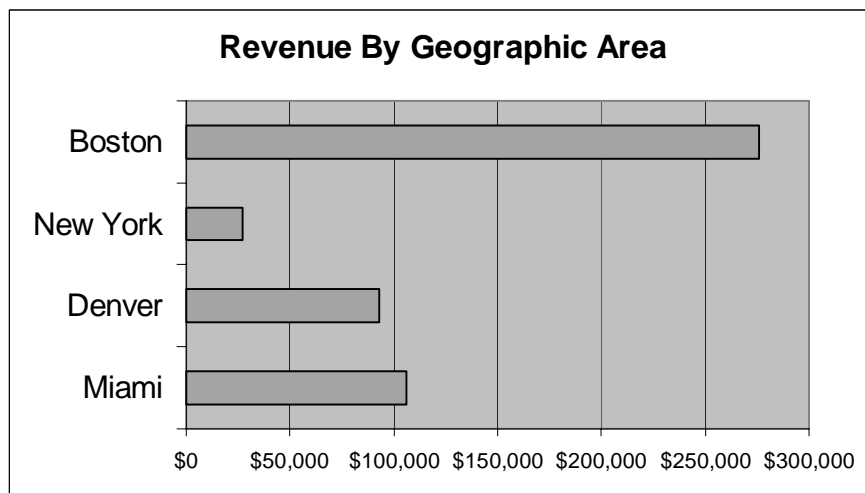
A *column chart* is used when there is a need to show actual numbers rather than percentages, as shown in figure2.



**Figure2**

The category labels (Miami, Denver, New York, and Boston) are shown along the *X* (horizontal) *axis*. The data points (monthly sales) are plotted along *Y* (vertical) *axis*, with the height of each column reflecting the value of the data point.

**Note:** A *column chart* can be given a horizontal orientation and converted to a *bar chart*, as shown in figure3.



**Figure3**

## Planning a Chart

It includes the following:

1. Identifying the data points to be plotted, as well as the labels representing each data series and categories for the X-axis.
2. Choosing an appropriate chart type.
3. Sketching the chart, including data markers, axes, titles, labels, and legend.
4. Deciding on the location of the chart within the workbook.

## Creating a Chart

**Chart Wizard** let us create charts in four major steps.

**Step I.** Selecting the chart type/ subtype.

**Step II.** Selecting the chart source data (series/ category labels).

**Step III.** Placing chart title, axes titles and other illustrating things on the chart.

**Step IV.** Selecting a suitable location for the completed chart (on a separate sheet/ embedded into the same sheet).

**Notes:**

- For selecting Chart source data, you may need to:
  - Select adjacent ranges
  - Select non-adjacent ranges.
- Regardless of where it is kept (embedded in a worksheet or in its own chart sheet), a chart is linked to the worksheet on which it is based.
- The *sizing handles* on the *embedded chart* (see figure4(a)) indicate it is currently selected and can be sized, moved, or deleted the same way as any other Windows object.

## Modifying a Chart

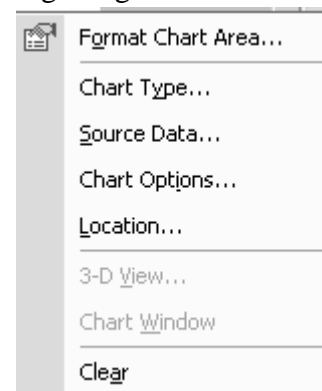
The above mentioned steps (done with creating a chart) could be recalled even after a chart is finished (Right clicking on the chart). Moreover, the following things could also be altered.

\* Moving/ resizing the chart (possible with embedded charts only).

\* Deleting a Data Series:

- Select a data marker included in the desired series.
- Press Delete.

\* Editing Chart Text(s):



1. Click on titles.
  2. Edit the text as you want.
  3. Goto Format | Selected Chart Title..
- \* Data Series Format (as a whole).
1. Single click on any data marker of the required series.
  2. Select Format | Selected Data Series.
- \* Data Point Format (a single data point).
1. After selecting the involved data series, click on the desired data point again.
  2. Select Format | Selected data point.
- \* Chart Axes Settings (X and Y axes)
1. Single click on any data axis line (X or Y).
  2. Select Format | Selected Axis.
- \* The following properties could be altered.
- a) Patterns
  - b) Scaling
  - c) Font
  - d) Number
  - e) Alignment
- \* Plot Area Format
- Change of Patterns/ Colors (plot area background)
- \* Grid Line Format
- 1) Select any grid line.
  - 2) Select Format | Selected Grid Line.
- \* Chart Area Format
- 1) Click outside the plot area.
  - 2) Select Format | Chart Area.

### **The F11 Key**

The F11 key is the fastest way to create a chart in its own sheet. Select the data, including the legends and category labels, then press the F11 key to create the chart according to the default format built into the Excel column chart. After the chart has been created, you can use the menu bar, Chart toolbar, or shortcut menus to choose a different chart type and/or customize the formatting.