Excel 2000

FINANCIAL FUNCTIONS

Some important financial functions are PMT, PPMT, IPMT, FV.
PMT: Calculates the payment for a loan based on constant payments and a constant interest rate.
PPMT: Returns the payment on the principal for a given period of an investment based on periodic constant payments and a constant interest rate.
IPMT: Returns the interest payment for a given period of an investment, based on periodic, constant payments and a constant interest rate.
FV: returns the future value of an investment.

- How to create a list of numbers.
- Negative, positive results.
- When to use relative or absolute cell references.

To find other functions that are not in your system search Excel Help on 'compound interest'.

CHARTS

- Chart: A graphic representation of data, also referred to as graph.
- Chart Area: Portion of the object that contains the chart and all its elements.
- Plot area: The displayed area that is defined by the X and Y axes of a chart.
- Value or (Y) axis: The axis, usually vertical, along which quantities are plotted.
- Category or (X) axis: The axis, usually horizontal, along which categories of data are plotted.
- Tick mark: Small ruler-like division lines on an axis.
- Gridlines: Extensions of the tick marks to make reading the value associated with the data markers.
- Category Names or Labels: The names or labels along the X-axis which correspond to the labels used for the worksheet data.
- Data point: A single value originating in a worksheet.
- Data marker: A graphic representing a single value, e.g. a bar, column, slice, or other symbol.
- Data series: A group of related data points.
- Legend: Identifiers to show which data numbers go with which data series.
- Embedded chart: A chart which is positioned as part of an existing worksheet.
- Chart sheet: A special worksheet which contains a single chart only, and no other data.
- Series in: A quick way to view the data series displayed by columns or by rows. Provides the opportunity to verify which way projects the data more appropriately prior to completing the chart.
- Activate a chart: Pointing to the chart area and left clicking once to select the object.
- Selection or Sizing handles: Small black squares which appear around a chart when it is selected or activated.
Excel Charts

The following is a list of tips for choosing chart types and creating effective charts:

- Use a line chart, a 3-D line chart, an area chart, or a 3-D area chart to show trends or changes over a period of time.
- Use a column chart, bar chart, 3-D column chart, or 3-D bar chart to show comparisons.
- Use a pie chart or 3-D pie chart to show the relationship of parts to a whole.

<table>
<thead>
<tr>
<th>Chart Type</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>Shows magnitude of change over a period of time</td>
</tr>
<tr>
<td>Column</td>
<td>Shows comparisons between the data represented by each column</td>
</tr>
<tr>
<td>Bar</td>
<td>Shows comparisons between the data represented by each bar</td>
</tr>
<tr>
<td>Line</td>
<td>Shows trends or changes over time</td>
</tr>
<tr>
<td>Pie</td>
<td>Shows the proportions of parts to a whole</td>
</tr>
<tr>
<td>XY(Scatter)</td>
<td>Shows the pattern or relationships between sets of (X,Y) data points</td>
</tr>
<tr>
<td>Radar</td>
<td>Shows change in data relative to a center point</td>
</tr>
<tr>
<td>Surface</td>
<td>Shows the interrelationships between large amounts of data</td>
</tr>
<tr>
<td>Bubble</td>
<td>A special type of XY(Scatter) that shows the pattern or relationship between sets of data points; compares three sets of data</td>
</tr>
<tr>
<td>Stock</td>
<td>Compares high, low, open and close prices of a stock</td>
</tr>
<tr>
<td>Cylinder</td>
<td>Shows comparisons between the data represented by each cylinder</td>
</tr>
<tr>
<td>Cone</td>
<td>Shows comparisons between the data represented by each cone</td>
</tr>
<tr>
<td>Pyramid</td>
<td>Shows comparisons between the data represented by each pyramid</td>
</tr>
<tr>
<td>Doughnut</td>
<td>Shows the proportions of parts to a whole. Can contain multiple series</td>
</tr>
</tbody>
</table>

Data Range

Before you begin to construct the chart locate the following on your worksheet:

- The range containing the data for each series
- The range of cells containing the x-axis labels

Limit the detail so viewers can understand the chart’s main point at first glance
Chart consistent categories of data.
Make sure your chart has a descriptive title, category (X) axis labels, an x-axis title, and an y-axis title.
If your chart contains more than one data series, include a legend. Use special effects (bold, color, backgrounds, and borders) to emphasize parts of the chart.

*You might also note the following points:*

The chart title identifies the chart. A chart should always have a descriptive title. The horizontal axis is referred to as the category axis or the x-axis. Sometimes you will see it referred to as the "category (X) axis". The vertical axis is referred to as the value axis, the y-axis, or the "category (Y) axis". Tick marks indicate intervals on the axes. Tick-mark labels show the scale for the y-axis. Category names or category labels correspond to the labels you use for the worksheet data and are usually displayed on the x-axis.

A data point is a single value in a cell on the worksheet. Data points represent what is plotted on Excel charts. A data series is a group of related data points. Each trend line charts one data series. A data marker is a bar, area, wedge, or symbol that marks a single data point on a chart. The chart legend identifies the data series that the data markers represent. If you chart more than one data series you should include a legend.

**Planning a Chart**

One method of showing how to select data points is to prepare a simplespreadsheet and show what points are selected depending on the type of chart to be plotted (totals are not used in bar or column charts while pie charts usually depend only on the totals).

**Creating a Column Chart**

Excel provides a Chart Wizard that guides you through the process of creating a chart. The procedure has two steps: 1. select a range of cells containing the data you wish to represent in a Chart (the range of cells containing the data along with the cells containing the headings for the data row(s) or column(s)); 2. click the Chart Wizard button and follow these instructions.

- **ChartWizard - Step 1 of 4**: Use to select the type of chart you prefer. The easiest way to select a chart type is to click the type of chart on the list, at left, and then double-click the box at right that illustrates the precise variety of this chart type. Note that a description of each specific chart subtype is given below the subtypes and you can preview your chart if desired.

- **ChartWizard - Step 2 of 4**: Use to select or change the range of cells containing the relevant data. If you selected a data range correctly you can proceed directly to Step 3. If not, you click the collapse button, select the correct range, and expand the dialog box. You also have the option to see how the data looks when dependent on the data in row or column display.

- **ChartWizard - Step 3 of 4**: Click the appropriate tab to enter such information and formatting as: a legend, chart label and axis labels, gridlines. It is a good idea to show use of each tab and the options associated especially the axes tab as changes
here can produce significant differences in how the data is displayed. Note that for a basic chart no information is required here; it is possible to skip this step and move directly to Step 4.

- **ChartWizard - Step 4 of 4**: Use to choose whether the chart will be embedded in an existing worksheet or will appear alone in its own Chart Sheet.

Note that Excel 2000 greatly expands the available chart options, even within the Chart Wizard’s Standard tab: Donut and bubble charts, and two- or three-dimensional cone, cylinder, and pyramid graphs are just a few examples of the variety available. The options are further expanded on the Custom tab, where it is possible to convert data into logarithmic and other types of representation. A particularly striking option is the Custom tab Cone chart, which differs from the Standard tab 3-D Cone charts by displaying the maximum value as a whole 3-D cone and all other values as sliced reductions of that same cone shape; this would be especially effective for illustrating proposed cuts or projected shortfalls.

**Moving and Resizing a Chart**
To modify an embedded chart, you need to select the chart. To select a chart, simply click anywhere within the borders of the chart. Small black handles appear on the chart border. You can drag the handles to change the size of the chart. Usually someone will double click on the chart and take it to the edit mode. If you create a chart that is too large to fit on the screen, it may appear in a special chart window when selected.

**Updating a Chart**
All charts created using Excel are linked to the data used to create them. Demonstrate how changes to the data in the spreadsheet are automatically reflected in the chart.

**Modifying an Excel Chart**
Every aspect of an Excel chart can be changed, modified, or enhanced. This section covers changing items that display the data more accurately. You can change the data series, add data labels, or edit the text describing the data, all without recreating the chart. While viewing the Format Data Series dialog box demonstrate changes that may be made from the other tabs.

**Enhancing the Appearance of the Chart**
Color can be added to any part of the chart, even individual columns of a data set. Color, patterns, and other options may be added to the different parts of the chart. Even if you do not have a color printer changing color can add depth to the printout. If the chart is to be part of a computerized presentation then color will greatly enhance your ability to draw attention to the portions of the chart you want emphasized.

**Previewing and Printing the Chart**
Point out that this is a simple step but one that will save a lot of paper. It is very easy to look at the screen and feel that everything is just as you wish it but then get the paper and
realize the chart is off center or just out-of-place. Print preview provides the opportunity to fine-tune the appearance of the printed page prior to the step of actually printing.

*Creating a Chart in a Chart Sheet*

The concept of a Chart Sheet is introduced here and it may be worth emphasizing some points about chart sheets:
- chart sheets have no rows or columns.
- only one chart can be placed in each chart sheet.
- chart sheets help you to avoid clutter on worksheets being used mainly for data tables, and they can be given the name of the particular chart they contain.
- although the concept of a chart sheet is introduced using a pie chart, any chart type can go either in a regular worksheet or in a chart sheet.

*Creating a Pie Chart*

Pie charts will, in most cases, require selection of two ranges of cells. Explain why you would select headings and then their associated totals using the control key to select nonadjacent ranges.

*Changing the Chart Type from Two-Dimensional to Three-Dimensional*

This is another change that can be done after the initial chart has been created. An alternative method of making this change is to right click on the chart area and select Chart Type. Exploding the pie and rotating that slice around to a different position are ways by which you can emphasize the importance of certain data.

*Change the Chart Point of View*

Use the Chart, then 3-D View option from the Chart menu.

*Formatting Chart Labels*

Explain that as in all charts the text can be changed to different font types, sizes, styles, or colors. Also discuss the effect of displaying the percentages and of using or not using a legend.

*Applying a Texture Fill Effect to the Chart Background*

Discuss the fact that setting fill effects is to create a chart with a professional appearance. This becomes very important when using computer generated presentations or color print options.

*Printing the Chart from the Chart Sheet*

Point out that an advantage of placing your charts into a separate sheet is the ability to print that chart without taking an additional page setup action.

*Creating a Bar Chart*

Explain that the only difference in a bar chart and a column chart is in how you rotate the chart to look at it. A bar chart could be described as a column chart on its side or vise
versa. Point out that all the changes discussed earlier apply to bar charts and that adding pictures is an option also available on column charts.

RECALL from previous lectures

Format Painter
File handling using Windows Explorer