Using Microsoft Office XP
Advanced Excel Handout

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Contents

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Advanced Microsoft Excel XP

Microsoft Excel XP is a software application that can be used as a spreadsheet, database, or graphing program. This handout presents some advanced features the program offers such as *macros*, *paste special*, *organizational chart*, *advanced charting*, and *database*. These are the features most commonly used by students and professionals in all fields. Other handouts including Introduction to Excel and Intermediate Excel are available online at http://www.calstatela.edu/handouts. An active NIS account is required to access these handouts.

Worksheet/Workbook Enhancements

Worksheet/Workbook Enhancement focuses on the features Excel offers for internal use. When changing workbook properties, none of the data in the workbook is changed - only the description of the file. Keeping this characteristic in mind, comments do not change the content of a cell; only the description and explanation of the value in a particular cell.

VIEWING WORKBOOK PROPERTIES

Workbook properties are the information attached to a workbook to summarize its purpose or to help users locate it. Usually this information can be found in the *Properties* dialog box, which contains fixed and modifiable information. Fixed information includes statistics such as the size of the workbook, the date the workbook was created, modified, date last accessed and the name of the last person who saved the workbook.

There are many ways you can view the workbook properties: 1) accessing the *Properties* dialog box for a currently open workbook, 2) displaying the ***Properties*** view in the *Open* dialog box of a closed workbook or 3) enabling the ***Save preview picture*** check box on the *Summary* tab of the *Properties* dialog box. The last option allows you to preview the first few rows and columns of the worksheet from the *Open* dialog box the next time you access the same workbook (see Figure 1).

To view the file properties from the *Open* dialog box:

1. Select the **File** menu ► **Open**. The *Open* dialog box opens (see Figure 1).
2. Click the ***Look in:*** drop-down box and select the file source drive and folder.
3. Select the specific file you want to see the properties of.
4. Click the ***Views:*** drop-down list and select **Properties** (see Figure 1).
5. The properties of the file selected will appear on the right-hand side of the *Open* dialog box (see Figure 2).

! *NOTE*:
You may also view a brief properties description (size, type, date modified) of the workbook by selecting **Details** from the ***Views*** drop-down list of the *Open* dialog box.

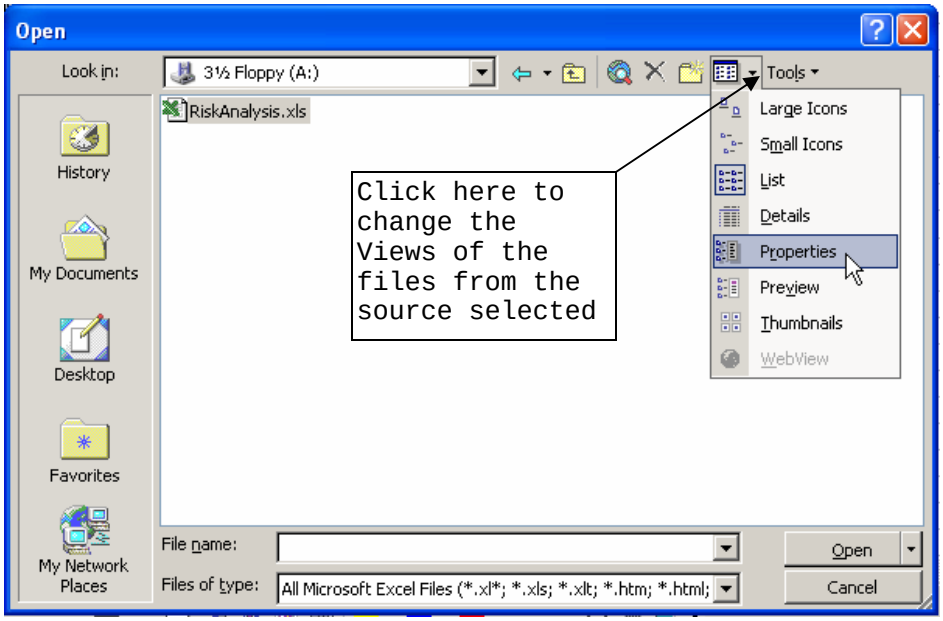


Figure 1 - Views drop-down list in the Open dialog box

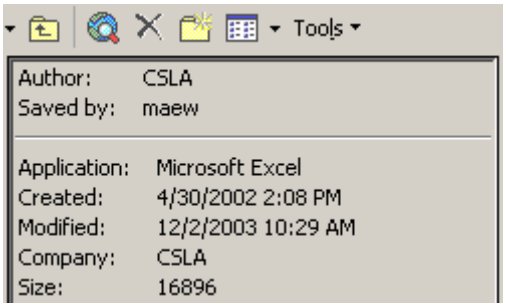


Figure 2 - File properties

EDITING WORKBOOK PROPERTIES

The complete workbook properties can be found in the *Properties* dialog box. In the *Summary* tab there are preset fields where you can insert new or modify existing information. You can also enter the title and subject text, enter or change the name of the author, assign categories or keywords or include comments. In addition to the existing fields, you can use options in the *Custom* tab to create new fields and field information.

To edit workbook properties:

1. Open the file.
2. Select the **File** menu ► **Properties.** ► *Summary* tab. The *Properties* dialog box opens (see Figure 3)
3. Type the change(s) in the text box(es) of desired field(s) ► **OK** button
4. Click the **Save** button on the **Standard** toolbar to save the workbook and its edited properties.

! *NOTE*:

You can also open the *Properties* dialog box for a workbook by right-clicking the workbook and selecting the **Properties** command from the pop-up menu that opens.

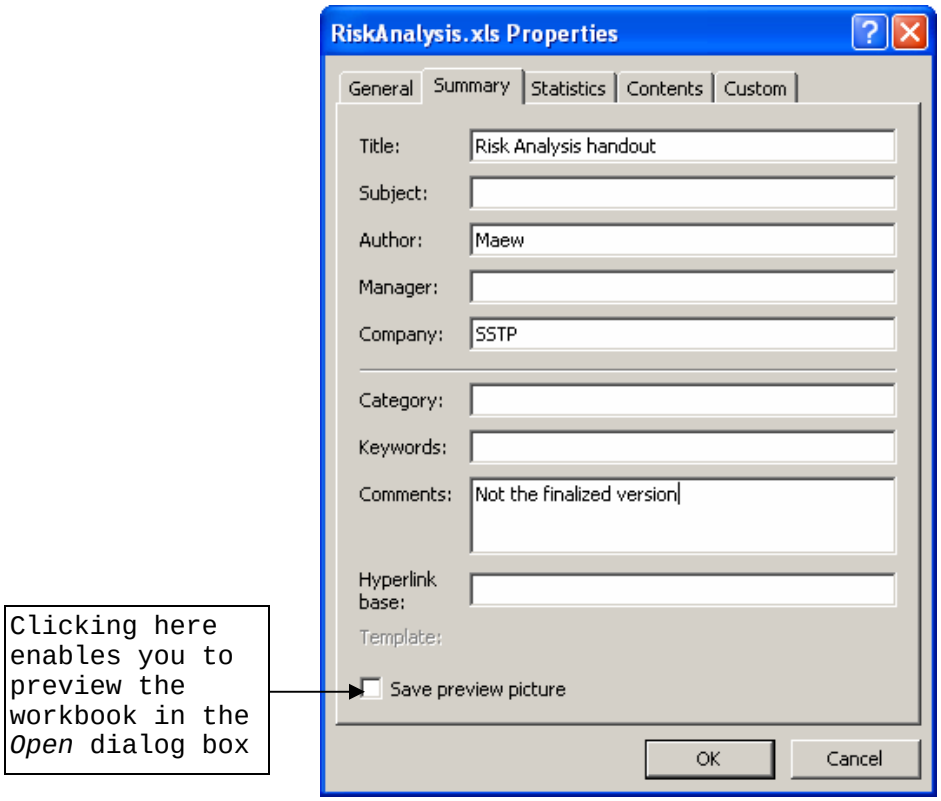


Figure 3 - Editing workbook properties from the Properties dialog box

***!**NOTE*:

The ***Properties*** view in the *Open* dialog box does not display properties for a protected workbook.

CREATING COMMENTS

Comments are notes added to a worksheet. Comments can be used to provide information about data in a cell or about the worksheet itself. For example, you can describe how you arrived at a particular formula in a cell, or you can list the telephone number of a client to whom the data in the worksheet refers. When a comment is attached to a cell, a red indicator appears in the upper, right corner of the cell (see Figure 4). Comments are useful if you want to communicate with other users when working in shared workbooks on a network. Since comments include the name of the current user, they can be an effective way to explain data or the reason for a change. For example, if you change a value in a shared workbook, you can add a comment explaining why you changed the value (see Figure 4).

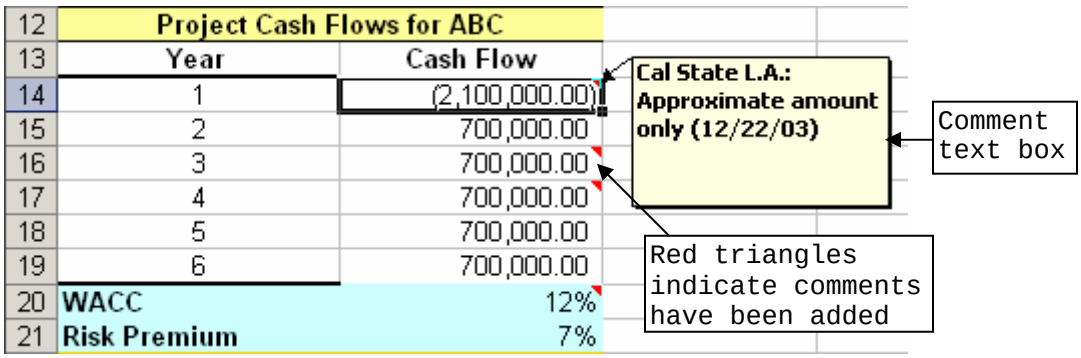


Figure 4 - Adding a comment to a cell

***!**NOTE*:
You can also create a comment by right-clicking a cell and selecting the **Insert Comment** command from the pop-up menu that opens.

If a red indicator does not appear in a cell with a comment attached to it select the **Tools** menu ►**Options** ► *View* tab ► **Comment indicator only** option button.

Comments automatically include the name of the current user. If you do not want to include the name or if the name is incorrect, you can delete or change the existing name by selecting the **Tools** menu ► **Options** ► *General* tab ► ***User name*:** text box (edit the name).

To create comments:

1. Select the cell you want to add a comment to.
2. Select the **View** menu ► **Toolbars** ► **Reviewing**.
3. Click on the **New Comment** button on the **Reviewing** toolbar.
4. Type the desired comment.
5. Click anywhere in the worksheet to exit the comment box.

VIEWING A COMMENT

You can view comments using the same technique as you would to view *ScreenTips*. When you position the mouse pointer over any cell that has a comment attached to it the comment appears in a comment box next to the cell. To hide the comment, move the mouse pointer away from the cell.

***!**NOTE*:
To permanently display comments, right-click on the cell and select the **Show Comment** option from the pop-up menu that opens.

PRINTING COMMENTS

You can print comments on a separate page at the end of a printed worksheet or you can print them as they appear on the worksheet. Comments that print on a separate page at the end of the printed worksheet display the cell address, the author of the comment, and the text that appears in the comment. Printing comments on a separate page is useful when, for example, you add comments to a worksheet that describe certain formulas. You can then display and print the comments to help other users.

To print the comments in a worksheet:

1. Select the **File** menu ►**Page Setup…** ►*Sheet* tab.
2. In the *Print* section, select "***At end of sheet***" or "***As displayed on sheet***" in the ***Comments:*** drop-down list box ► **Print** button ► **OK** button.

Using Paste Special

There may be times when you want to paste only certain aspects of copied data (such as formulas, values, or formats). For example, you may want to copy and paste all the formulas in a worksheet, but not their formatting. The *Paste Special* feature allows you to specify which aspect of the copied data you want to paste; you can paste all cell attributes or only selected ones.

WORKING WITH PASTE SPECIAL

When you copy the contents of a cell or a range of cells, any formatting that has been applied to it copied as well as the cell contents. When you subsequently paste the copied data, an exact copy of both the contents and its formatting is pasted.

You can also use the **Paste** button on the **Standard** toolbar to display a list of paste options, including the **Paste Special…** command in the **Edit** menu which opens the *Paste Special* dialog box (see Figure 5).

COPYING VALUES BETWEEN WORKSHEETS

There may be times when you want to copy the results of a formula, but not the formula itself. For example, you may want to copy the totals from quarterly worksheets (in which each total is the result of a formula) to a summary worksheet (in which you only need the formula results or totals).

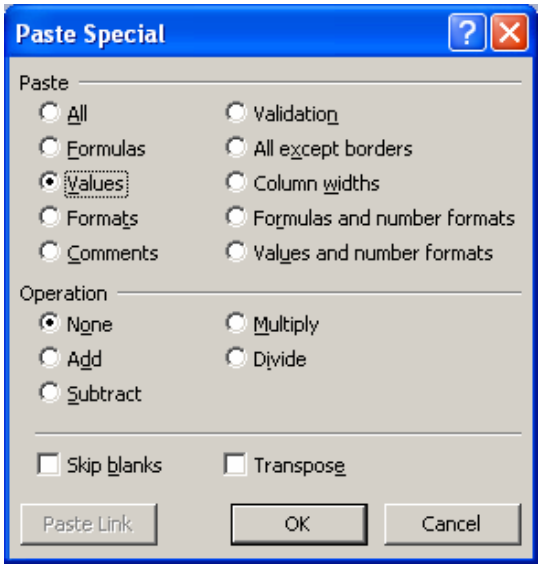


Figure 5 - Paste Special dialog box

To copy values between worksheets:

1. Select the worksheet containing the values you want to copy.
2. Select the range of cells containing the values you want to copy.
3. Click the **Copy** button on the **Standard** toolbar.
4. Select the destination worksheet and paste the values.
5. Select the cell in the upper left corner of the paste range.
6. Select the **Edit** menu ►**Paste Special…** command. The *Paste Special* dialog box opens (see Figure 5).
7. In the *Paste* section, click the ***Values*** option button ► **OK** button.

COPYING FORMULAS BETWEEN WORKSHEETS

You can copy a formula and paste only the formula - not its format. This option is useful if you do not want to overwrite existing formatting in the paste range.

When you paste a formula, relative cell references in the formula adjust to the location of the new formula. Absolute cell references, however, do not adjust and will always refer to the absolute cell address.

To copy values between worksheets:

1. Follow steps 1 to 6 in the previous section.
2. In the *Paste* section, select the ***Formulas*** option button ► **OK** button.

Organizational Charts

Excel includes several preset diagrams to visually represent related information. There are five predefined diagrams from which you can choose: *Venn*, *Cycle*, *Pyramid*, *Target*, and *Radial*. An organization chart is also available in the *Diagram Gallery* dialog box (see Figure 6). When you insert a new diagram, it is placed on a drawing canvas. The canvas can then be resized to fit the diagram.

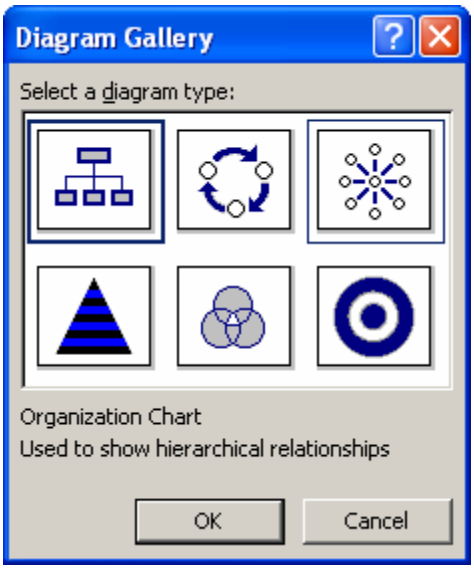


Figure 6 - Diagram Gallery dialog box

To insert a diagram:

1. Click the **Insert Diagram or Organization Chart** button on the **Drawing** toolbar. The Diagram Gallery dialog box opens (see Figure 6).
2. Click the desired diagram type button, e.g. Target ► **OK** button.

WORKING WITH DIAGRAMS

You can customize a diagram to meet your needs. For instance, additional shapes can be inserted and moved from front to back, labels can be added and the shapes within the diagram can be changed to different colors and/or styles to emphasize distinct concepts. Also, Excel provides an ***AutoFormat*** feature that allows you to pick from predefined styles. You can, however, disable this feature and work on your own.

Diagram layout options include: tightly fitting the drawing canvas to the diagram, expanding the drawing canvas to add more white space around the diagram, and scaling the diagram to resize it. To freely move diagram elements, you must disable the ***AutoLayout*** feature.

Even after your diagram has been created, you can change to another diagram type by selecting the **Change to** button Change to on the **Diagram** toolbar. When changing diagram types, Excel enables both the ***AutoLayout*** and ***AutoFormat*** features.

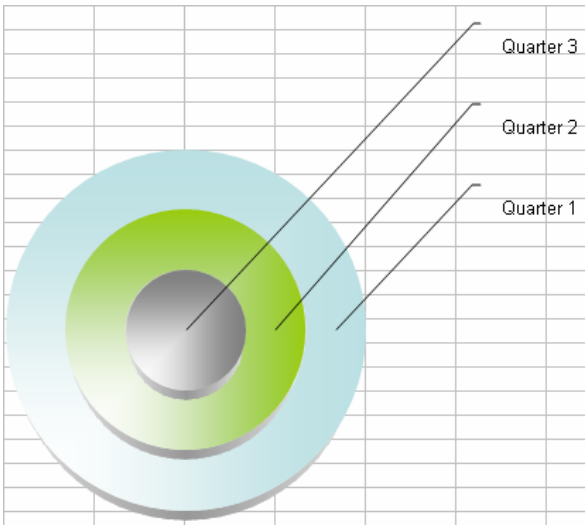
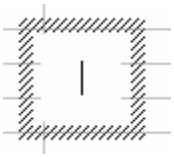


Figure 7 - Diagram (Target layout)

To work with diagrams:

1. Select the diagram you want to modify.
2. To add a label, click in the ***Click to add text*** display text on the diagram. A text box with a blinking insertion point will appear (see image on right).



3. Type the desired label text.
4. You may add labels to other diagram shapes as desired.
5. To add a new diagram shape, select the **Insert Shape** button Insert Shape on the **Diagram** toolbar.
6. To move the diagram shapes in either direction, click the **Move Shape Forward Move Shape Backward** button or **Move Shape Backward** button on the **Diagram** toolbar.
7. To apply pre-defined format to the diagram click the **AutoFormat** button on the **Diagram** toolbar, select the desired style ► **Apply** button.
8. To modify the diagram layout, select the **Layout** button on the **Diagram** toolbar and select the desired layout option.

Advanced Charting

After creating a chart, additional information or different elements may be added to the chart. Excel enables you to manipulate any part of the chart as well as add elements. Information in a newly created chart will almost always have to be modified for effectively presentation.

ADDING A 3-D EFFECT

An object can appear three-dimensional by adding a 3-D effect (see Figure 8). For example, when creating a logo, a 3-D effect makes the object stand out from the page. There are a variety of different 3-D styles to select from.

11		
12	Project Cash Flow ABC	
13	Year	Cash Flow
14	1	(2,100,000.00)
15	2	700,000.00
16	3	700,000.00
17	4	700,000.00
18	5	700,000.00
19	6	700,000.00
20	WACC	12%
21	Risk Premium	7%
22	NPV	
23	IRR	

Figure 8 - An object with a 3-D effect

! ***NOTE*****:**
An object can have either a shadow or a 3-D effect, but not both. A line color cannot be assigned to fill a 3-D object, but the fill color can be changed.

To add 3-D effect to an object:

1. Select the **View** menu ► **Toolbars** ►**Drawing** toolbar.
2. Select the object to add a 3-D effect by clicking on it.
3. Click the **3-D Style** button on the **Drawing** toolbar.
4. Select the desired 3-D style.

APPLYING A 3-D SETTING

Once you have added a 3-D effect to an object, you can apply various depth, direction, lighting, surface, and color settings. You can also tilt 3-D objects down, up, left, or right. Depending on the object selected, certain options may not be available.

! ***NOTE*****:**
If you apply 3-D settings to a selected object without having selected a 3-D style, certain options will have no effect.

To apply a 3-D setting to an object:

1. Display the **Drawing** toolbar.
2. Select the object to which you want to apply a 3-D setting.
3. Click the **3-D Style** button on the **Drawing** toolbar.
4. Select one of the 3-D options available.
5. Click the **3-D Style** button again ► ***3-D Settings…***. The **3-D Settings** toolbar appears (see Figure 9).

Figure 9 - 3-D Settings tool bar

6. Select the desired option(s) to adjust the appearance of the object.
7. Click anywhere in the worksheet area to deselect the object.

ADDING AND REMOVING GRIDLINES

Gridlines are the lines that start at the tick marks on an axis and extend through the plot area. Gridlines are usually added for a value axis since they make it easier to read the value of a data series. You can also use gridlines for a category axis to create separations in the data.

Excel includes two types of gridlines: *major* and *minor*. For a value axis, major gridlines appear along the numbers on the value axis and minor gridlines appear between the numbers. By default, only the major gridlines of the value axis are included in a chart. You can add or remove major and minor gridlines to and from the category or value axis while creating the chart with the *Chart Wizard*. They can also be added after the chart is created.

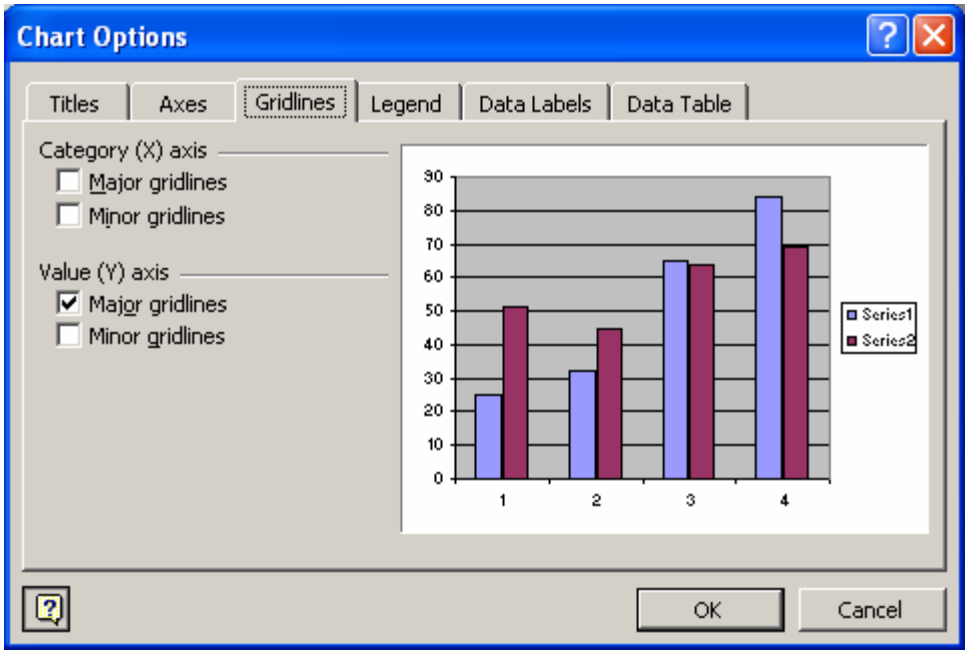


Figure 10 - Adding new gridlines

To add/remove gridlines to a chart:

1. Right-click a blank area of the chart area. A pop-up menu opens.
2. Select the **Chart Options…** command. The *Chart Options* dialog box opens (see Figure 10)
3. Select the *Gridlines* tab.
4. Select or deselect the desired gridline options ► **OK** button.

CHANGING THE AXIS SCALING

When you create a chart Excel automatically creates a scale for the value axis based on the data in the chart. You can change this scaling if desired. The options in the *Auto* section of the *Scale* tab in the *Format Axis* dialog box (Figure 11) are selected by default. When these options are selected, Excel overrides any manual settings. As soon as you manually change any of the scaling values, the corresponding check boxes in the *Auto* section are deselected allowing the manual values to be applied to the chart. You can restore the scaling to its original values by reselecting the appropriate check boxes in the *Auto* section.

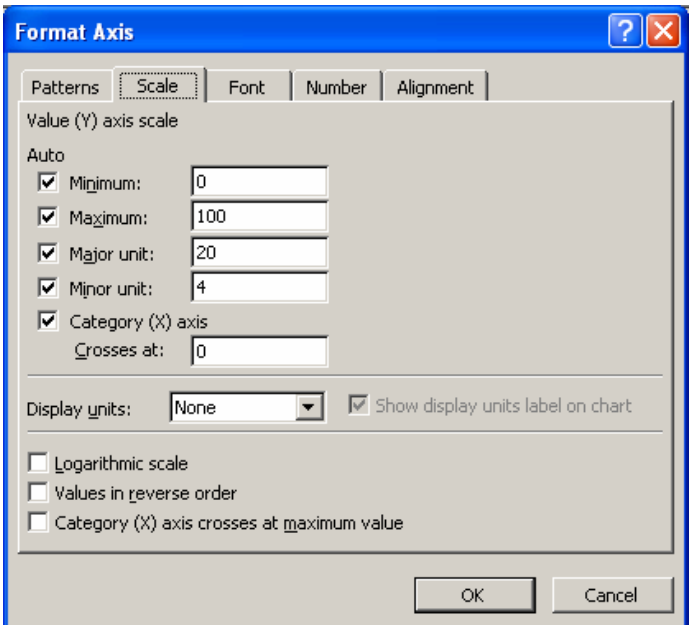


Figure 11 - Format Axis dialog box

The ***Minimum:*** and ***Maximum:*** controls set the lowest and highest numbers on the axis, while the ***Major unit:*** and ***Minor unit:*** controls determine how the axis is divided between the minimum and maximum values and the frequency of major and minor gridlines. You can also manipulate where the category axis crosses the value axis. The default value is "***0***", but can be any number between the maximum and minimum values.

To change axis scaling:

1. Double-click the chart axis to change. The *Format Axis* dialog box opens.
2. Select the *Scale* tab (see Figure 11).
3. Enter the value in the text box(es) of the scale(s) ► **OK** button.

CHANGING DATA SERIES CHART TYPES

You can mix different chart types within a single chart to create a combination chart. For example, you can show the total sales for a product in a column format and at the same time show the number of retail outlets in a line format. Mixing chart types can help show the relationships between the data series more accurately and may improve the overall appearance and clarity of the chart (see Figure 12).

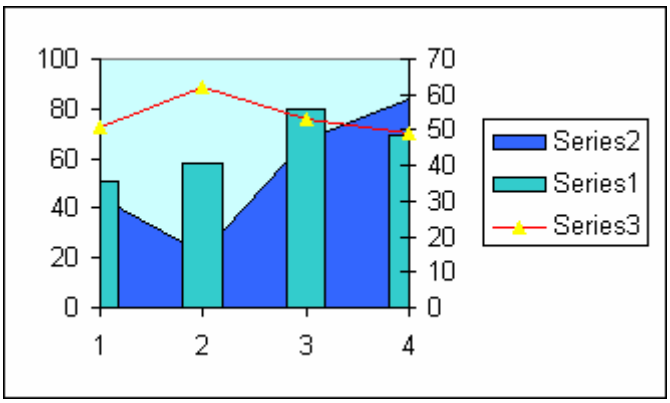


Figure 12 - Using mixed chart types

To change the chart type of a data series:

1. Right-click the data series object on the chart. A pop-up menu opens.
2. Select **Chart Type…**. The *Chart Type* dialog box opens.
3. Select the *Standard Types* tab.
4. Select the chart type to use from the ***Chart type:*** list box.
5. Select the desired sub-type in the ***Chart sub-type:*** list box ► **OK** button.

***!**NOTE*:
You can also select a combination chart type from the *Custom Types* tab in the *Chart Type* dialog box. Combination charts include "***Column-Area***," "***Line-Column***," and "***Line-Column on 2 Axes***."

ADDING A TRENDLINE

Because of the varying height of the bars in a column chart, it is sometimes difficult to determine the general direction or trend of the data. Excel enables you to quickly add a *trendline* to a data series (see Figure 13). A trendline has the effect of smoothing out rough spots in the data of a chart and overall provides a better picture of the data series. Trendlines are commonly used for data charted over time.

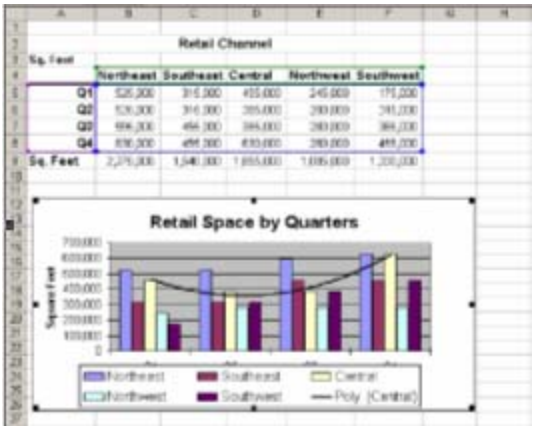


Figure 13 - Adding a trendline

To add a trendline to a data series:

1. Right-click the data series object on the chart. A pop-up menu opens.
2. Select **Add Trendline…** ► *Type* tab.
3. Select the trendline type in the *Trend/Regression type* section ► **OK** button.
4. Click in a blank area of the chart to deselect the trendline. (Press the **[Delete]** key to delete the trendline)

***!**NOTE*:
The **Add Trendline…** pop-up menu item may not be available on all chart types, particularly those that use a 3-D visual effect.

Macros

A *macro* is a program created to automatically perform frequently used operations. It contains all the commands, mouse movements, and user actions necessary to complete a task. Macros can save a considerable amount of time because it can be used to automate repetitive, time-consuming tasks. Macros can be used for simple tasks performed frequently or for complex tasks that require consistency.

DEFINING MACROS

Excel macros are written in Visual Basic for Applications programming language. The series of commands used in a macro is known as a procedure. Each procedure is given a name that is used to execute the macro.

Each procedure is saved in an object called a module. The module is attached to the worksheet where the macro is stored. The module is hidden and cannot be seen in the normal window view. You must use the *Visual Basic Editor* to select the module to view and edit the macro commands.

All procedures begin with the word "***Sub"***, followed by the name of the macro and an opening and a closing parenthesis. Procedures end with the words "***End Sub***." Commands entered between these two lines are macro statements. When recording a procedure Visual Basic translates the menu choices and keystrokes into the macro statements. Comments may also be inserted into a procedure to add clarity. If you are familiar with Visual Basic you can write a procedure yourself instead of using the *macro recorder*.

!*NOTE*:
A macro can be stored in a specific workbook or the "***Personal Macro Workbook***". Macros stored in a specific workbook can only be used when that workbook is open. The "***Personal Macro Workbook***" automatically opens when you start Excel. As a result, macros stored in the "***Personal Macro Workbook***" are available to all files.

RECORDING A MACRO

A macro can be created using the macro recorder. Excel records the macro as you perform the steps you want to include in it. The steps you perform are not recorded as simple keystrokes but are translated into the Visual Basic for Applications programming language which translates the steps into macro statements.
When recording a macro Excel creates a module in the current worksheet. As you perform the macro keystrokes they are saved as Visual Basic language statements in that module. A module can contain more than one macro.

During the macro recording process you name the macro and enter descriptive information about it. This information is entered in the *Record Macro* dialog box and appears as a comment in the module.

!*NOTE*:
If you record a macro to the "***Personal Macro Workbook***," you are prompted to save the changes when you exit Excel.

You can also record a macro by selecting the **Tools** menu ► **Macro** ► **Record New Macro…**.

Some words are reserved and cannot be used in a macro name; invalid words are usually macro commands, such as "***Date***," "***If*** or "***Next***."

To record a macro:

1. Display the **Visual Basic** toolbar (see Figure 14) by selecting the **View** menu ► **Toolbars** ►**Visual Basic**.

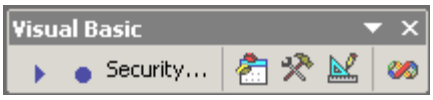


Figure 14 - Visual Basic toolbar

2. Click the **Record Macro** button on the **Visual Basic** toolbar. The *Record Macro* dialog box opens (see Figure 15).

Figure 15 - Record Macro dialog box

3. Type the desired macro name in the ***Macro name:*** text box.
4. Type in a character for a shortcut in the ***Shortcut key:*** text box (optional).
5. Specify where to save the macro by clicking the ***Store macro in:*** drop-down list.
6. Type the macro description by replacing the text in the ***Description*:** text box (optional).
7. Click on **OK** button. Every step performed will be recorded as a step in the macro.
8. When finished recording macro steps, click the **Stop Recording** button on the **Stop Recording** toolbar.
9. Use the keys combination of **[Ctrl+(short-cut key)]** to run the macro.

RUNNING A MACRO

Macros are saved in modules, and both are saved with the workbook in which they were written. Before you can run a macro, the workbook in which it is saved must be open. When you select a macro from the *Macro* dialog box, Excel performs the commands in sequence. Macros in any open workbook can be run from any other open workbook.

To run a macro:

1. Select the **Tools** menu ► **Macro** ► **Macros…**. The *Macro* dialog box opens (see Figure 16).
2. Select the macro you want to run from the list under ***Macro name:*** list box ► **Run** button.

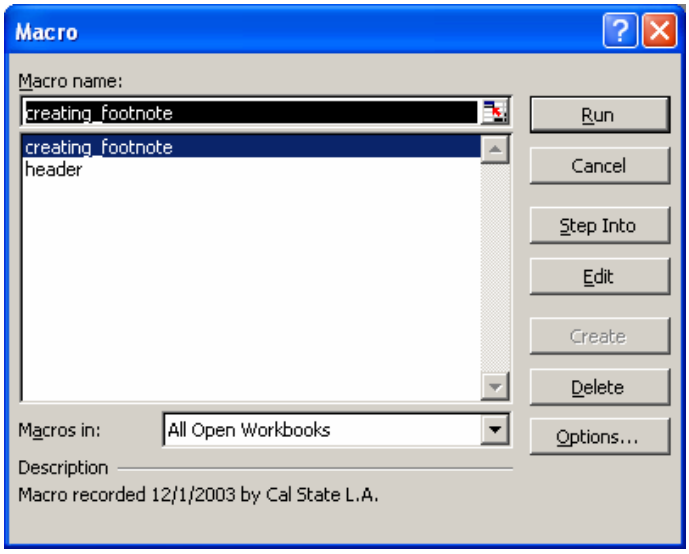


Figure 16 - Running a macro

***!**NOTE*:

- You can also run macros by clicking the **Run Macro** button on the **Visual Basic** toolbar.
- To function properly, macro security must be set to medium. To set the security level select the **Tools** menu ► **Options…** ► *Security* tab ► **Macro Security…** button ► the *Security Level* tab ► select the ***Medium*** option button ► **OK** button ► **OK** button.

DELETING A MACRO

Macros no longer useful can be deleted. Since macros can invoke other macros, make sure that the macro being deleted is not needed by another macro. If a macro is stored in a workbook, the workbook must be open in order to delete the macro. If the macro is stored in the "***Personal Macro Workbook***," which automatically loads as a hidden window every time you open Excel, the "***Personal Macro Workbook***" window must be unhidden before the macro can be deleted.

***!**NOTE*:

You can unhide the Personal Macro Workbook by selecting the **Window** menu ► **Unhide…**. The *Unhide* dialog box opens. Select the file ► **OK** button. If you delete a macro from the "***Personal Macro Workbook***," Excel prompts you to save the changes exiting the program.

The *Macro* dialog box can also be opened by selecting the **Tools** menu ► **Macro**.

To delete a macro:

1. Click the **Run Macro** button on the **Visual Basic** toolbar. The *Macro* dialog box opens.
2. Select the macro you want to delete ► **Delete** button ► **Yes** button.

Database

Although manipulation of numeric data is Excel's primary purpose, the row-and-column format lends itself to creating and storing databases. Generally, a good rule of thumb is that if the worksheet grows to more than 2000 rows, you should store the information in a data warehouse or relational database such as Microsoft Access. Whether you need to store a product catalog for quick lookups or employee information for use with your accounting software, you can create, edit, sort, analyze and filter your data with the options located in the data menu.

USING A DATABASE

A database is a collection of information arranged in such a way as to make it easy to access. For example, a telephone book is a static database arranged in alphabetical order; because it is static, the information cannot be rearranged. In real-world applications, you need the capability to manipulate a database. This capability is known as database management.

Excel has built-in database management capabilities. You can treat a worksheet, or portions of a worksheet, as a database. Using an Excel database you can enter, edit, locate, sort and analyze information. In Excel, you can define any list as a database, since a list is simply a range of cells made up of columns and rows. The columns contain the field categories and the rows contain the record data. Additional rows can also be inserted as records are added to the database. A valid database does not contain any blank columns or rows.

***!NOTE*:**

You can also work with lists created in other Microsoft Office XP programs by copying and pasting the lists into Excel.

CREATING A DATABASE

Before creating a database you must consider the specific information you want to collect (that is, the fields or categories of information). You might, for example, need to track a client name, address, city, state, zip code, telephone number, invoice number, date of invoice, amount of invoice and the sales representative's commission. One field can be created (or one column used) for each type of information.

A field occupies a single column of a database and contains a single piece of information in each record. For example, a "***Salary***" field might contain salary information for each employee record. You can enter text, numbers, formulas, dates, or functions into a field. A computed field contains formulas or functions. Excel uses the top row of the list (the column label) as the field name. Proper planning can save hours of additional work at a later date. For example, to sort a database by last name, you must create two fields (one for the first name and one for the last name). You cannot enter the first and last names in a single field if you want to sort by last name.

Once you have entered the field names for a database, you can enter the records. Each row of a database contains one record. A record contains all the information related to one entry. For example, an employee record could contain the name, address, telephone number, and salary information of a single employee. Although each record contains all the fields in the database, every field is not required to contain data.

You may want to start with a small model of your database to test its design and usability. You can enter a few records and verify that you can store and retrieve the data as needed.

Probability	Cash Flow	Expected Value	Variance
0.05	(500,000.00)	(700,000.00)	(600,000.00)
0.20	100,000.00	100,000.00	110,000.00
0.50	700,000.00	707,600.00	900,000.00
0.20	1,300,000.00	128,000.00	1,300,000.00
0.05	1,900,000.00	235,600.00	2,300,000.00

Figure 17 - Creating a database

To create a database in Excel:

1. Create a new Excel file and input the data as you would normally do.
2. Select the cell where you want to enter the first column label.
3. Type in the desired column label.
4. Press the tab key on keyboard to move to the next cell in the row.
5. Enter additional database field labels as needed.
6. To save it as a database, select the **File** menu ►**Save As…** ►click the ***Save as Type:*** drop-down list ► select any of the **(*.dbf)** file formats ► **OK** button.

MODIFYING A DATABASE

You can modify a database by adding and/or deleting records and fields. New records can be added to the end of the database or a new row can be inserted in the database to add a record in a particular location. You can also delete records by deleting the row that contains the record. When a row is deleted Excel adjusts any database ranges as needed. If you simply clear the contents of a record, the blank row will cause problems when sorting and locating records within the database.

After you have created a database, you may discover that you need to track additional information. You can insert columns into the database to create additional fields as needed. Conversely, you can delete fields you no longer need to track. Deleting unnecessary fields produces a more efficient database and faster sorts and queries. You can also modify a database by editing the information in the same way as you would edit any worksheet. You can change the information in any field by editing it on the **Formula** bar or by typing over the old information in the cell. You can also copy information from one cell to another.

A valid database list cannot contain any blank columns or rows.

***!**NOTE*:
You can format a database using any of the Excel formatting features.

When you delete a row, all the information in that row is deleted across the entire worksheet. Before you delete a row you should make sure that there is no information in the row you want to retain.

To modify a database:

1. Right-click the column or row you want to modify. A pop-up menu opens.
2. Select the **Insert…** or **Delete…** command to modify the column or row as desired.

VIEWING DATA FORM RECORDS

The *Data Form* dialog box allows you to navigate between records easily. For example, if a list has hundreds of records, the data form allows you to quickly scroll to the one you want. When you drag the scroll box in the scroll bar, the counter in the upper right corner of the *Data Form* dialog box indicates which record will appear when you release the mouse button.

***!**NOTE*:
To open the database from Excel, select the **File** menu► **Open…** ► select "***All Files***" from the ***Files of type:*** drop-down list ► select the database file from the list.

To view records in the *Data Form* dialog box:

1. Open the database in Excel.
2. Select the **Data** menu► **Form…**. The *Data Form* dialog box for the database appears (see Figure 18).
3. To move to the next record in the list, click the down-pointing scroll button.
4. To move to the previous record in the list, click the upward-pointing scroll button.
5. Drag the scroll box as desired to move through the list quickly.

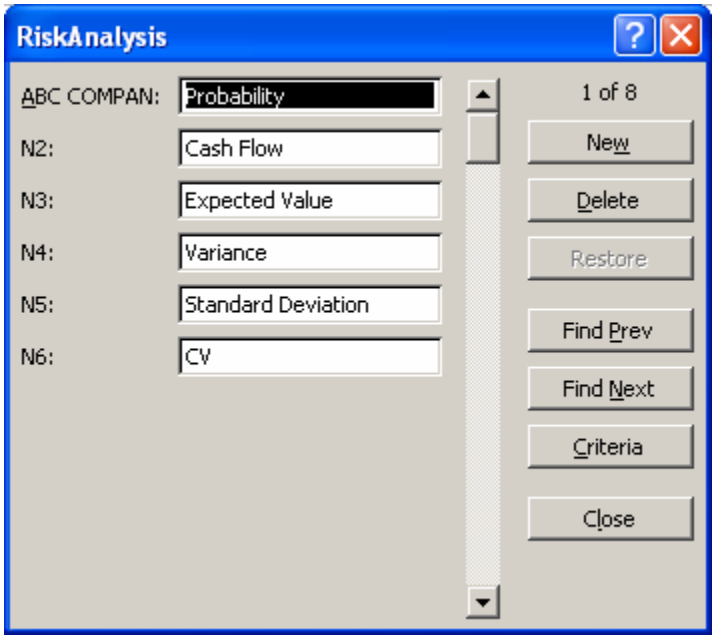


Figure 18 - Database form dialog box

! *NOTE*:
Pressing the **[Enter]** key or the **[Shift+Enter]** key combination will move to the next and previous records, respectively. The **[Page Up]** and **[Page Down]** keys move you through multiple records in the database.

EDITING DATA FORM RECORDS

You can use the data form to edit records. In the data form, each field appears in its own text box. You can edit data in the text boxes the same way you edit data in a worksheet.

! *NOTE*:
You can cancel your changes and restore the original data by clicking the **Restore** button in the *Data Form* dialog box before you press the **[Enter]** key to move to another record.

To edit a record in the *Data Form* dialog box:

1. Open the *Data Form* dialog box.
2. Display the record to edit.
3. Select the text in the field to edit.
4. Edit the text as desired.
5. Press the **[Enter]** key.

ADDING DATA FORM RECORDS

You can add records to the data form. New records appear at the end of the data form. However, any existing named ranges in the list do not expand to include the new records.

***!**NOTE*:

You can press the **[Tab]** key or the **[Shift+Tab]** key combination to move to the next and previous fields, respectively. If you are in the last field in a record, the insertion point moves to the **New** button when you press the **[Tab]** key.

To add a record to the data form:

1. Open the *Data Form* dialog box.
2. Click the **New** button. A new record appears in the dialog box with all blank fields.
3. Type the information in the field(s) of the dialog box.
4. Click the **Close** button to close the *Data Form* dialog box. Scroll as necessary to verify that the new record appears correctly at the end of the list.

DELETING DATA FORM RECORDS

When you no longer need a record or a record becomes irrelevant, you can delete the record from the data form. The record is deleted from the worksheet as well.

***!**NOTE*:

You should use the **Delete** button in the *Data Form* dialog box with caution. Once a record is deleted from the data form, you cannot restore it.

To delete a record from the data form:

1. Open the *Data Form* dialog box (see Figure 18).
2. Display the record you want to delete.
3. Click the **Delete** button. A message box asking for confirmation of your deletion appears.
4. Click the **OK** button to confirm your deletion.

SORTING LISTS

You can arrange data in a list by the entries in a particular column. A list is a range of cells organized with similar sets of data in each column. For example, you may have a list containing employee data, with columns for the first name, last name, department, salary, and age. You can sort the list alphabetically by employee name or numerically by salary. You could also group the employees alphabetically by department.

Excel uses the following guidelines when sorting data:

1. Rows with duplicate items in the sort column remain in their original order.
2. Rows with blank cells in the sort column are placed last in the sorted list.
3. Hidden rows are not moved.

***!**NOTE*:

If you want to be able to restore a list to its original order, you must include a column with the rows numbered sequentially before you sort the data. You can then sort by this column to restore the list to its original order.

Lists can be sorted by more than one column by selecting the **Data** menu ►**Sort…** command and specifying the sort order of the columns.

SORTING IN ASCENDING/DESCENDING ORDER

You can sort a list in either ascending or descending order. Ascending order sorts a list from the lowest to highest value. Descending order sorts a list from the highest to lowest value. Lists are sorted by the column that contains the active cell.

The order of an ascending sort is listed below:

1. Numbers are sorted from the smallest negative number to the largest positive number.
2. Dates and times are sorted based on their chronological value.
3. Text and text that includes numbers is sorted as follows: 0 1 2 3 4 5 6 7 8 9 (space) ! " # $ % & ( ) * , . / : ; ? @ [\ ] ^ _ ` { | } ~ + < = > A B C D E F G H I J K L M N O P Q R S T U V W X Y Z.
4. False logical values are sorted before trud logical values.
5. All error values are equal and are not sorted.
6. Blanks are always sorted last.

In a column of mixed data, the ascending sort order is numbers, dates, text, logical values, error values and blanks with items within each category sorted in ascending order.

Descending sorts are sorted in the reverse order of ascending sorts, except for blanks. Blank cells are always sorted last. Therefore, in a column of mixed data, the descending sort order is error values, logical values, text, dates, numbers and blanks with items within each category sorted in descending order.

Project Cash Flows for ABC	
Year	Cash Flow
1	(2,100,000.00)
2	900,000.00
3	800,000.00
4	700,000.00
5	680,000.00
6	550,000.00
WACC	12%
Risk Premium	7%

Figure 19 - A list sorted in descending order

***!NOTE*:**

Apostrophes (') and hyphens (-) are ignored in a sort, unless two items are identical except for the apostrophe or hyphen. In that case the apostrophe or hyphen is sorted last in an ascending sort and first in a descending sort.

To sort a list in ascending or descending order:

1. Display the entire **Standard** toolbar.
2. Select any cell in the column that you want to sort.
3. Click the **Sort Ascending** button or **Sort Descending** button on the **Standard** toolbar.