

Microsoft Excel 2003

Manual - Intermediate Level



SAMPLE

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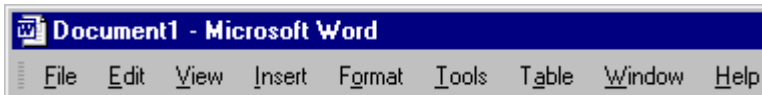
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Course Basics

Toolbars

The Title Bar

- The title bar is displayed along the top of almost all program, folder and dialog box windows. It is used to display information such as the name of the application (or folder) and the document you are working on. Information which is displayed here may vary. The example shown illustrates the title bar for a program called **Microsoft Word**, in which a document called **Document1** has been opened or saved:



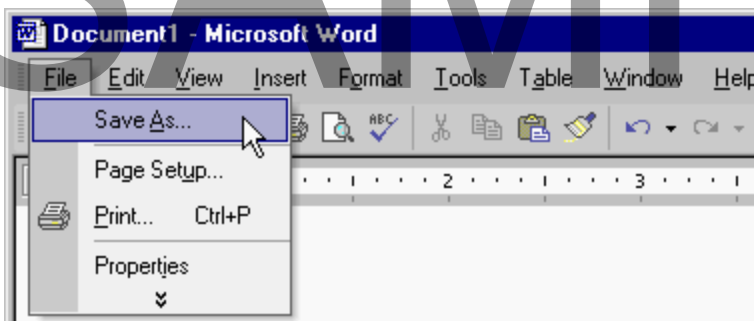
The Menu Bar

- The menu bar is located under the title bar, and contains a series of drop down menus. The example shown illustrates the Microsoft Word Menu Bar:



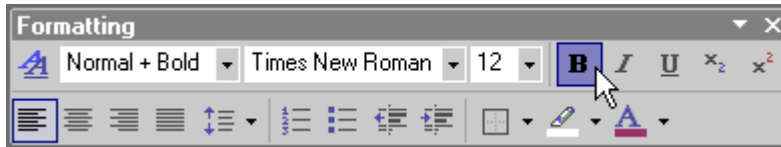
To execute Menu commands

- In most cases, you are asked to use the mouse to execute a series of menu commands (e.g., **File > Save As**). What this means is that you select **File** from the main menu, followed by **Save As**:



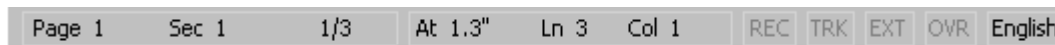
The Tool Bar

- The tool bar contains a series of icons, which allow you to achieve a desired effect as quickly as possible. In the example shown, taken from the Microsoft Word Formatting toolbar, to make the selected text bold, you would click on the **Bold** icon:



The Status Bar

- Most application windows have a status bar displayed along the bottom of the window. In the example illustrated, taken from Microsoft Word, the status bar conveys information about the page within the document which you are working on, along with other relevant information:





The Scroll Bar

- When a program or folder needs to display information within a window, two sets of scroll bars may be displayed along the bottom and right side of the window. By using the scroll bars it is possible to move to any position within a document and also work on a document many times bigger than your physical screen size.

To move up and down within a window (using the scroll bar)

- To scroll upwards in a window, click on the upwards-pointing arrow at the top of the vertical scroll bar: 
- To move downwards in a window, click on the downwards-pointing arrow at the bottom of the vertical scroll bar: 

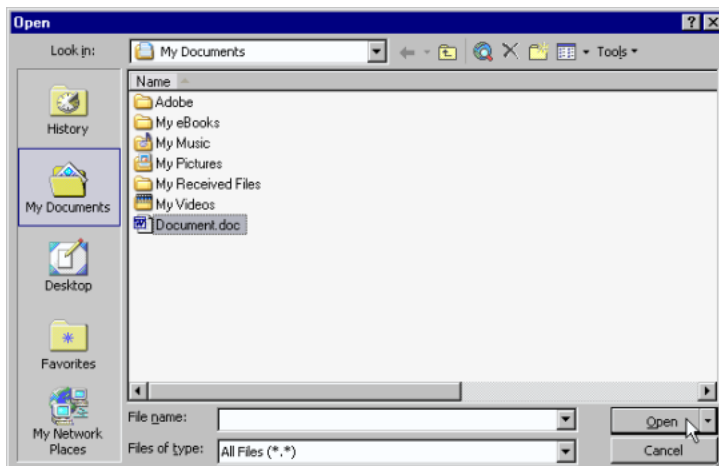
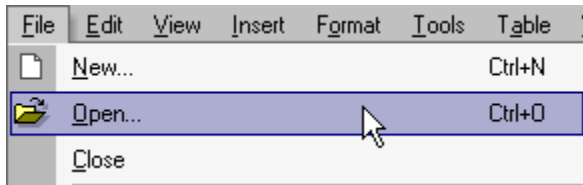
To move right to left within a window

- To move to the right-hand side of a window, click on the right-hand arrow on the horizontal scroll bar: 
- To move to the left-hand side of a window, click on the left-hand arrow on the horizontal scroll bar: 

File Management

Opening Files

- From the main menu, select **File > Open** command or click on the **Open** icon and select the required file from the dialog box displayed:

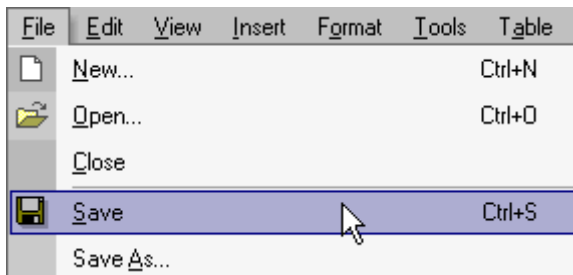


- Use the **Look in** drop-down menu to select the drive or folder which contains the file you want.
- To open the file you require either double-click on the file name or select the file name by clicking on it, and then click on the **Open** button.

Saving Files

To save a new document

- From the main menu, select **File > Save** command or click on the **Save** icon and from the dialog box displayed select the required folder. Enter a file name and then click on the **Save** button:



- After you have saved the file for the first time, clicking on the **Save** icon will automatically save your document with the filename you gave it. It does not give you the option to rename.

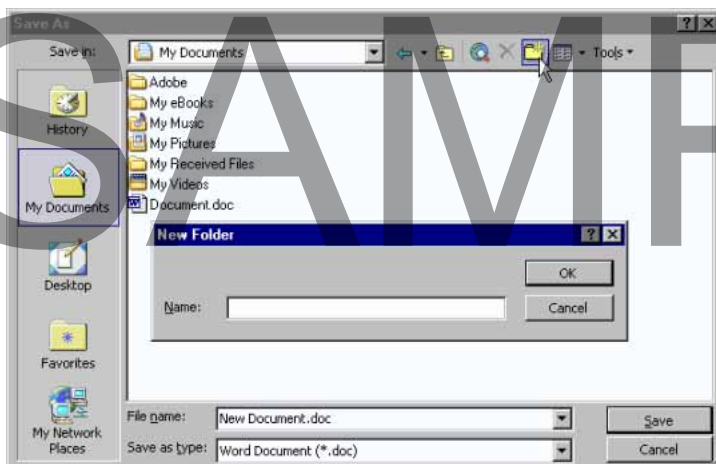
To save a document under another name and/or location

- The **Save As** command can be used to save a file under a different name, to save a file in a different word processor format, or to save a file to a different drive and/or folder. From the main menu, choose **File > Save As** command.

Note: The **File > Save As** command will rename the document on the screen so that you can keep the earlier version, as well as saving any changes you have made.

To create a new folder in which to save your document

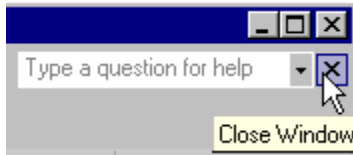
- Click on the **Create New Folder** icon, displayed within the **Save As** dialog box.
- This will display the **New Folder** dialog box. Enter the name of the new folder, and then click on the **OK** button:



Note: The folder will be created under the current folder.

Closing Files

- Click on the **Close Window** icon displayed at the top-right of the document window. Be sure to click on the **Close Window** icon, (as opposed to the **Close** icon):



Installing the Sample Files

- Use Windows Explorer to create a folder called **Excel 2003 Intermediate Samples**, in the **My Documents** folder.
- If you are installing the sample files from the CD-ROM, place the CD-ROM in the CD drive and copy the files from the **excel_2003_intermediate_usa\exercise_files** to the **My Documents\Excel 2003 Intermediate Samples** folder.
- If these files have been copied to your network server, then ask your trainer/supervisor for more information about how to copy these files to your PC's hard disk.

- **Notes for tutors:**

The above instructions are for Windows that has not been set-up for a multi-user environment (with individual profiles). The instructions above may require modification within a Windows multiuser environment. Where possible pre-install the relevant work files prior to use by students/delegates.

SAMPLE

Viewing Worksheets

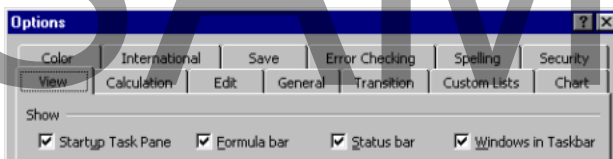
When you have completed this learning module you will have seen how to:

- Customize the Excel window display
- Customize the Comments View options
- Customize the Objects View options
- Customize the Worksheet View options
- Choose a toolbar
- Display toolbars
- Customize toolbar Options
- Add Commands to a toolbar
- Hide a Workbook
- Hide a Worksheet
- Display hidden Workbooks
- Display hidden Worksheets
- Freeze a horizontal pane
- Freeze a vertical pane
- Freeze horizontal and vertical panes
- Unfreeze panes
- Group Worksheets
- Ungroup Worksheets

Customizing View Options

Customizing the Excel window display

- From the main menu, choose **Tools > Options** to display the **Options** dialog box, click on the **View** tab, and select the following options from the **Show** area:



Startup Task Pane - Select to show the Startup task pane.

Formula bar - Select to show the Formula bar.

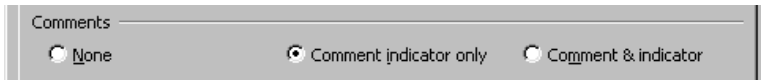
Status bar - Select to show the Status bar.

Windows in Taskbar - Select to list each open Workbook on the Taskbar.

- Click **OK** to change and save the settings.

Customizing the Comments View options

- From the main menu, choose **Tools > Options** to display the **Options** dialog box, click on the **View** tab, and select the following options from the **Comments** area:



None - Select to hide all comments.

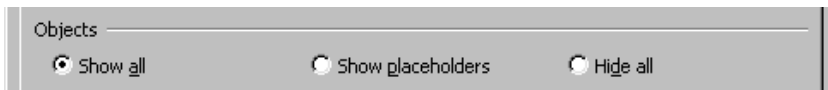
Comment indicator only - Select to indicate comments with red triangles.

Comment & indicator - Select to show the comments and its indicator.

- Click **OK** to change and save the settings.

Customizing the Objects View options

- From the main menu, choose **Tools > Options** to display the **Options** dialog box, click on the **View** tab, and select from the following options from the **Objects** area:



Show all - Select to show all objects.

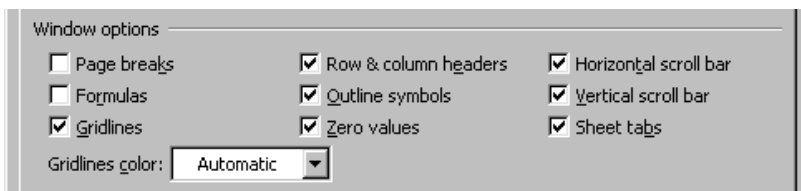
Show placeholder - Select to show a grey box in place of an object.

Hide all - Select to hide all objects.

- Click **OK** to change and save the settings.

Customizing the Worksheet View options

- From the main menu, choose **Tools > Options** to display the **Options** dialog box, click on the **View** tab, and select from the following options from the **Window options** area:



Page breaks - Select to display page breaks.

Formulas - Select to display formulas instead of results in Worksheet cells.

Gridlines - Select to display gridlines.

Gridlines color - Change the gridline color by clicking on the down arrow and selecting a new color.

Row & column headers - Select to show the row and column headers.

Outline symbols - Select to show any outline symbols.

Zero values - Select to show cells containing 0.

Horizontal scroll bar - Select to show the horizontal scroll bars.

Vertical scroll bar - Select to show the vertical scroll bars.

Sheet tabs - Select to show the sheet tabs.

- Click **OK** to change and save the settings.

Displaying and Customizing Toolbars

Choosing a toolbar

- Excel has 20 **toolbars** for you to choose from. Each toolbar contains a group of icons that are relevant to specific functions in Excel. You can use the following list to help you choose the toolbar to display:

Standard - Icons for basic Excel 2003 functions.

Formatting - Icons for cell formatting.

Borders - Icons for drawing and customizing border lines.

Chart - Icons to create and format Charts.

Control Toolbox - Icons to customize and control form elements.

Drawing - Icons to draw shapes.

External Data - Icons for querying external data.

Forms - Icons to create form elements.

Formula Auditing - Icons to troubleshoot formulas.

List - Icons to work with designated Lists, and import/export XML data.

Picture - Icons to create and manipulate pictures.

PivotTable - Icons for working with Pivot Tables.

Protection - Icons to lock and protect Worksheets.

Reviewing - Icons to create and manipulate comments.

Task Pane - Links to the some of the most common tasks in Excel.

Text to Speech - Icons to control how Excel reads cell contents.

Visual Basic - Icons for working with Visual Basic.

Watch Window - Window to track the formula results of different cells.

Web - Icons to create, manipulate, and interact with the Web.

WordArt - Icons for creating and manipulating WordArt objects.

Displaying toolbars

- From the main menu, choose **View > Toolbars** and select the toolbar you want to display (you will see a check mark beside visible toolbars)

OR right-click on any visible toolbar and choose the toolbar you want to display from the popup menu (you will see a check mark beside visible toolbars).

Customizing toolbar options

- Right-click on any visible toolbar and choose **Customize** from the popup menu. This will display the **Customize** dialog box: Click on the **Options** tab, and select from the following options:

Show Standard and Formatting toolbars on two rows

By default, Excel displays the Standard and Formatting toolbars on one row to increase the Worksheet window display. Select this option to display the toolbars on the two different rows.

Always show full menus

By default, Excel shows a condensed version of the main menus, containing the most recently used commands menu items. Select this option to show full menus.

Show full menus after a short delay

By default, Excel displays the full menus after it has been open for a few seconds. Deselect this option to prevent the full menus from appearing.

Reset menu and toolbar usage

Click on this button to restore the dropdown menus to their default settings.

Large icons

Select this option to display large icons on all toolbars.

List font names in their font

Select this option to display the actual font in the Formatting toolbar Font dropdown menu.

Show ScreenTips on toolbars

Select this option to display the descriptive name of the icon when the mouse pointer is placed over it.

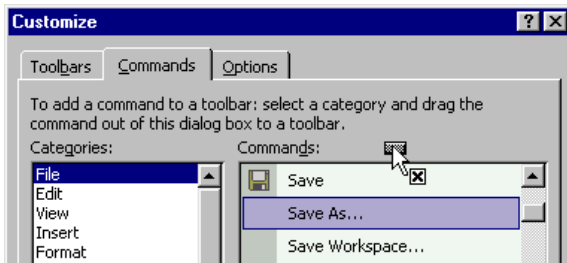
Menu animations

Select how menus appear on screen; choose from None, Random, Unfold, or Slide.

- Click **Close** to save the settings.

Adding Commands to a toolbar

- Begin by displaying the toolbar you want to customize.
- From the main menu, choose **Tools > Customize**, click on the **Commands** tab, and select a Category from the **Categories** scrolling box.
- From the **Commands** scrolling box, find the command you want to add, and drag the command onto the toolbar you want to affect:



- Your customized toolbar should now display the command you just added.

Hiding Workbooks and Worksheets

Hiding a Workbook

- Begin by displaying the Workbook you want to hide.
- From the main menu, choose **Window > Hide**.

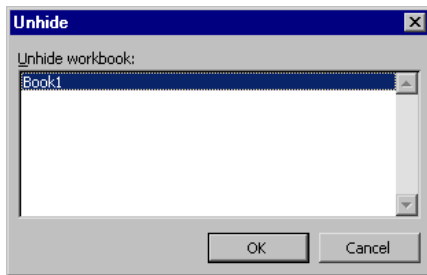
Note: If there are unsaved changes in your hidden Workbook, Excel will prompt you to save the Workbook when you exit.

Hiding Worksheets

- Begin by selecting the Worksheet(s) you want to hide by clicking on the appropriate Worksheet tab(s).
- From the main menu, choose **Format > Sheet > Hide**.

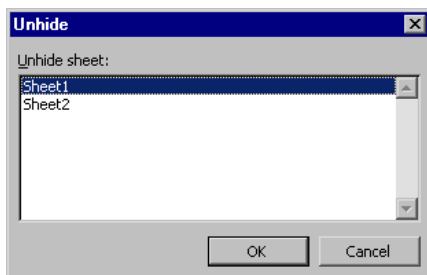
Displaying hidden Workbooks

- From the main menu, choose **Window > Unhide** to display the **Unhide** dialog box, select the hidden Workbook you want to display, and click **OK**:




Displaying hidden Worksheets

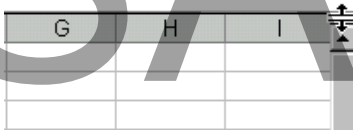
- From the main menu, choose **Format > Sheet > Unhide** to display the **Unhide** dialog box, select the hidden Worksheet you want to display, and click **OK**:



Freezing Panes


Freezing a horizontal pane

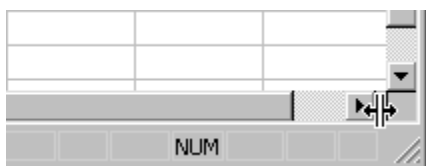
- Begin by placing the mouse pointer over the rectangle above the right scrollbar (your mouse cursor should change to the drag cursor ).
- Drag the rectangle **down** to below the row you want to freeze. From the main menu, choose **Window > Freeze Panes**:



Note: The frozen pane is marked by a horizontal black line.

Freezing a vertical pane

- Begin by placing the mouse pointer over the rectangle to the right of the bottom scrollbar (your mouse cursor should change to the drag cursor .
- Drag the rectangle **left** to the right of the column you want to freeze. From the main menu, choose **Window > Freeze Panes**:



Note: The frozen pane is marked by a vertical black line.

Freezing horizontal and vertical panes

- Begin by selecting the top-left cell that will not be part of the frozen panes.
- From the main menu, choose **Window > Freeze Panes**.
- For example, to freeze the top two rows and the left column, select cell **B3**:

	A	B	C	D	E
1					
2					
3					
4					
5					
6					

Unfreezing panes

- From the main menu, choose **Window > Unfreeze Panes**.

Note: This menu selection is available only if there are panes to unfreeze.

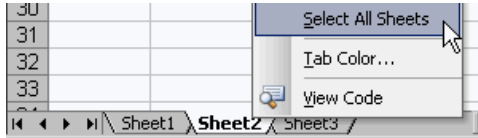
Grouping and Ungrouping Worksheets

Grouping Worksheets

- You can group Worksheets together to edit and format the sheets at the same time. Every change made to the active Worksheet will be reflected in all Worksheets in the Group. Worksheets can be grouped simply by selecting the Worksheets you want.

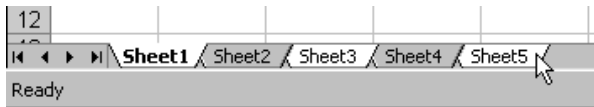
To select all Worksheets

- Right-click on a sheet tab, and choose **Select All Sheets** from the popup menu:



To select several Worksheets

- Click on the first sheet tab of the Worksheet you want to select, hold down the **Ctrl** key, and click on the other sheet tabs of the Worksheets you want to select:



Ungrouping Worksheets

- Right-click on one of the grouped Worksheet tabs, and choose **Ungroup Sheets** from the popup menu

OR hold down the **Shift** key and click on the active sheet tab.

Review Questions

How would you:

- Customize the Excel window display?
- Customize the Comments View options?
- Customize the Objects View options?
- Customize the Worksheet View options?
- Choose a toolbar?
- Display toolbars?
- Customize toolbar Options?
- Add Commands to a toolbar?
- Hide a Workbook?
- Hide a Worksheet?
- Display hidden Workbooks?

- Display hidden Worksheets?
- Freeze a horizontal pane?
- Freeze a vertical pane?
- Freeze horizontal and vertical panes?
- Unfreeze panes?
- Group Worksheets?
- Ungroup Worksheets?

SAMPLE

More Formatting Techniques

When you have completed this learning module you will have seen how to:

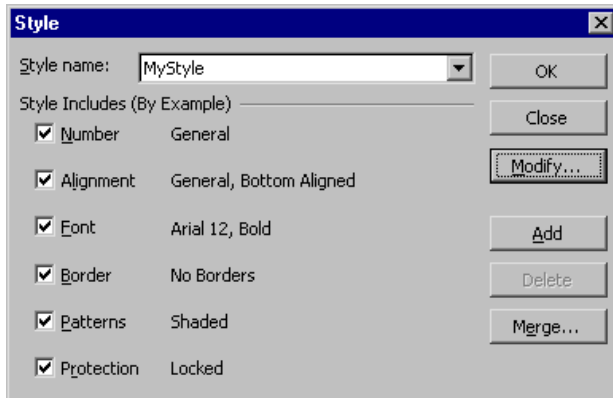
- Create a new style
- Apply a style
- Change the formatting of a style
- Remove a style from cells
- Delete a style
- Use conditional formatting
- Change conditional formatting
- Delete conditional formatting
- Find cells with conditional formatting
- Copy and apply cell formatting with the Format Painter
- Copy and apply column width or row height with the Format Painter
- Copy and apply the Format Painter in multiple locations
- Change the color of the Gridlines
- Turn off the onscreen Gridlines
- Print Gridlines
- Hide Columns
- Hide Rows
- Use the mouse to hide Columns
- Use the mouse to hide Rows
- Display hidden Columns
- Display hidden Rows
- Use the mouse to display hidden Columns
- Use the mouse to display hidden Rows

Using Styles

Creating a new style

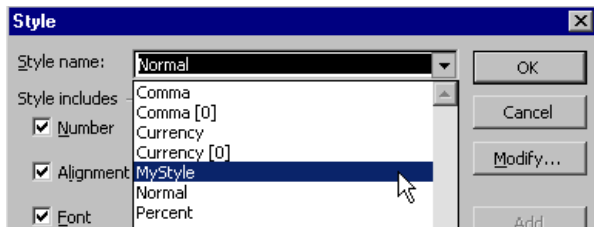
- You can create a new style based on the formatting of an existing cell. Once a style is created, you can use it repeatedly.
- Begin by selecting the cell containing the formatting you want.
- From the main menu, choose **Format > Style** to display the **Style** dialog box.
- Type a name into the **Style name** dropdown list box, and click on the **Add** button.

- Click **OK**:



Applying a style

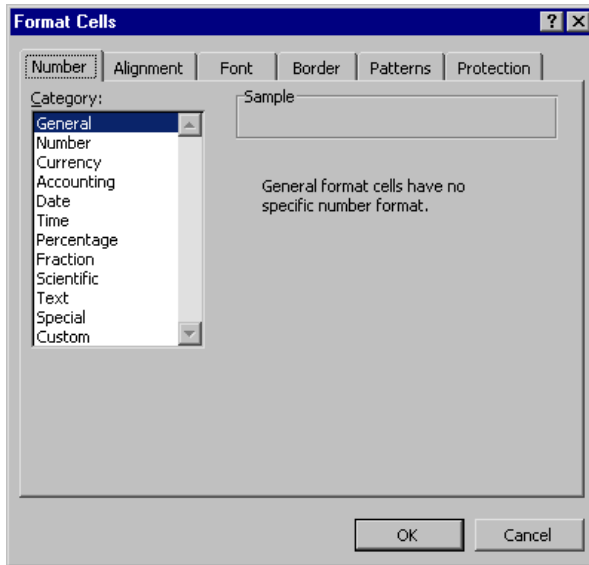
- Begin by selecting the cell(s) you want to affect.
- From the main menu, choose **Format > Style** to display the **Style** dialog box.
- Click on the **Style name** down arrow, and select the style you want.
- Click **OK**:



Changing the formatting of a style

- From the main menu, choose **Format > Style** to display the **Style** dialog box.
- Click on the **Style name** down arrow, select the style you want to change, and click on the **Modify** button to display the **Format Cells** dialog box:

SAMPLE



- Specify the formatting you want, and click **OK** to return to the **Style** dialog box.
- Click **OK**.

Note: You can also create a new style by typing a name for your style and clicking on the **Modify** button to specify the formatting of the new style.

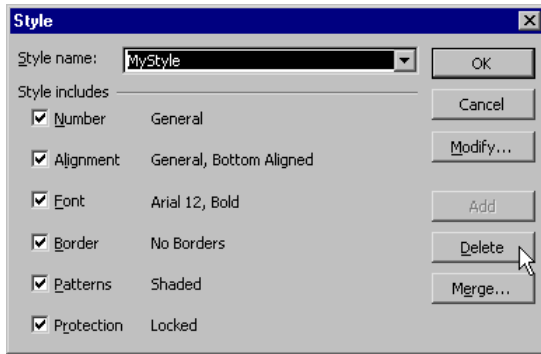
Removing a style from cells

- Begin by selecting the cell(s) you want to affect.
- From the main menu, choose **Format > Style** to display the **Style** dialog box.
- Click on the **Style name** down arrow, and select the **Normal** style.
- Click **OK**.

Deleting a style

- From the main menu, choose **Format > Style** to display the **Style** dialog box.
- Click on the **Style name** down arrow, select the style you want to delete, and click on the **Delete** button:

SAMPLE



- Click **OK**.

Note: Excel has pre-defined styles associated to the **Currency Style**, **Percent Style**, and **Comma Style** icons on the Formatting toolbar. Deleting these styles will disable the icons.

Conditional Formatting

Using conditional formatting

- Conditional formatting allows you to change the formatting of a cell depending on the value in the cell. You can set up conditional formatting to highlight data based on conditions you define.
- Begin by selecting the cell or range you want to affect.
- From the main menu, choose **Format > Conditional Formatting** to display the **Conditional Formatting** dialog box.
- Enter the condition in the **Condition** area (conditions can be defined based on the cell value or formula).
- Click on the **Format** button to display the **Format Cells** dialog box. Specify the formatting you want, and click **OK** to return to the **Conditional Formatting** dialog box. (A sample of the formatting appears in the preview box.)
- Click **OK** to apply conditional formatting:



Note: To define another condition, click **Add** instead of **OK**. You can have up to three conditions; when finished, click **OK**. Excel will evaluate the conditions in

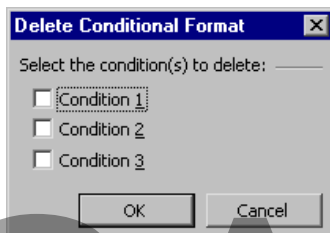
the order they are entered, and will stop evaluating once a condition is met and the associated format is applied.

Changing conditional formatting

- Begin by selecting the cell or range containing the conditional formatting you want to change.
- From the main menu, choose **Format > Conditional Formatting** to display the **Conditional Formatting** dialog box.
- Edit the condition(s) and formatting as needed.
- Click **OK**.

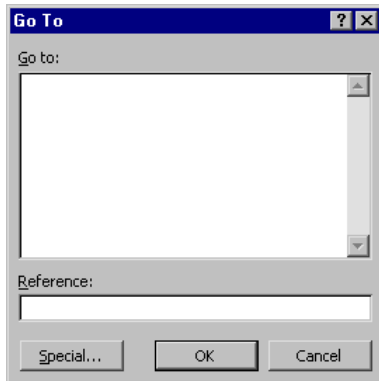
Deleting conditional formatting

- Begin by selecting the cell or range containing the conditional formatting you want to delete.
- From the main menu, choose **Format > Conditional Formatting** to display the **Conditional Formatting** dialog box.
- Click the **Delete** button to display the **Delete Conditional Format** dialog box, select the condition(s) you want to delete, and click **OK** to return to the **Conditional Formatting** dialog box.
- Click **OK**:

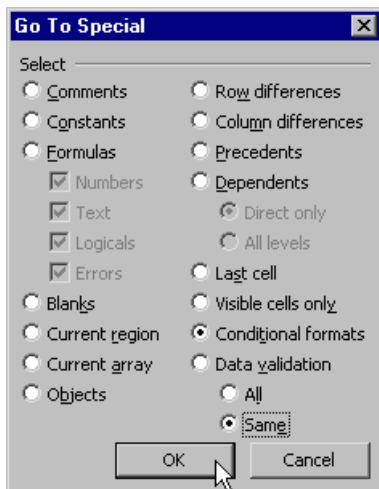


Finding cells with conditional formatting

- To find cells with specific conditional formatting, begin by selecting the cell with the conditional formatting you want to find.
- From the main menu, choose **Edit > Go To** to display the **Go To** dialog box:



- Click on the **Special** button to display the **Go To Special** dialog box.
- Select the **Conditional formats** radio button, and select the **Same** radio button below **Data validation**.
- Click **OK** to highlight the cells with the specified conditional formatting:





Note: To find cells with any conditional formatting, you can begin by selecting any cell, and follow the same instructions as above, but select the **All** instead of the **Same** radio button.

Using the Format Painter

Copying and applying cell formatting with the Format Painter


- You can use the **Format Painter** to copy the formatting (including conditional formatting) of an existing cell to other cells within Excel.
- Begin by selecting the cell or range containing the formatting you want to copy.

- Click on the **Format Painter** icon  on the **Formatting** toolbar (your mouse cursor will change to the painter cursor ).
- Click on the cell you want the formatting to be applied

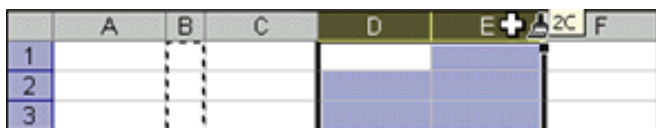
OR select the range you want the formatting to be applied.

Note: If you are copying the formatting of a range, after copying with the Format Painter, click on the top-left cell to apply the formatting to a range of the same size.


Copying and applying column width or row height with the Format Painter

- Begin by selecting the column (row) containing the width (height) you want to copy.
- Click on the **Format Painter** icon on the **Formatting** toolbar (your mouse cursor will change to the painter cursor ).
- Click on the column (row) header you want the formatting to be applied

OR select the range of columns (rows) you want the formatting to be applied:



Copying and applying the Format Painter in multiple locations

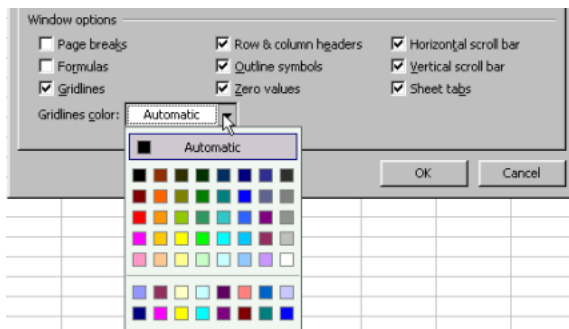
- Begin by selecting the cell or range containing the formatting you want to copy.
- Double-click on the **Format Painter** icon on the **Formatting** toolbar (your mouse cursor will change to the painter cursor ).
- Click on the cell or select the range you want the formatting to be applied (your mouse cursor stays as the painter cursor). Continue applying the copied formatting.
- When finished, click on the **Format Painter** icon to end the painter formatting.

Note: You can also use this method on column widths, row heights, objects, and conditional formatting.

Using Guidelines

Changing the color of the Gridlines

- Begin by selecting the Worksheets you want to affect.
- From the main menu, choose **Tools > Options** to display the **Options** dialog box, and click on the **View** tab.
- Click on the **Gridlines color** down arrow in the **Window options** area, and make your selection.
- Click **OK**:



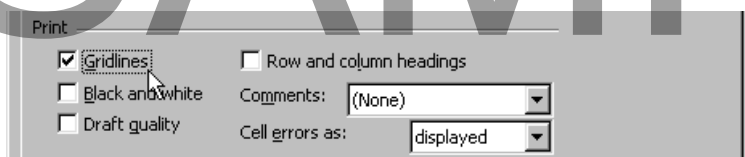
Turning off the onscreen Gridlines

- From the main menu, choose **Tools > Options** to display the **Options** dialog box, and click on the **View** tab.
- Deselect the **Gridlines** checkbox in the **Window options** area.
- Click **OK**.

Printing Gridlines

- From the main menu, choose **File > Page Setup** to display the **Page Setup** dialog box, and click on the **Sheet** tab.
- Select the **Gridlines** checkbox in the **Print** area.
- Click **OK** to exit **Page Setup**

OR click **Print** to print:



Hiding and Displaying Cells

Hiding Columns

- Begin by selecting the column(s) you want to hide.
- From the main menu, choose **Format > Column > Hide**.

Note: You can identify hidden column(s) by the missing header letters.

Hiding Rows

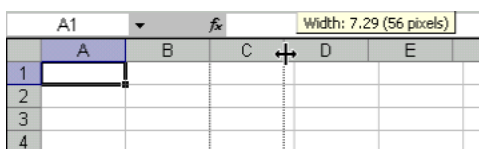
- Begin by selecting the row(s) you want to hide.
- From the main menu, choose **Format > Row > Hide**.

Note: You can identify hidden row(s) by the missing row number.

Using the mouse to hide Columns

- Begin by placing the mouse pointer on the right-most header border of the column(s) you want to hide.
- Drag the border past the left most header border of the column(s) you want to hide.

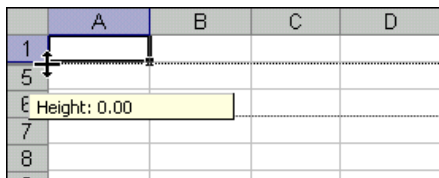
For example, if you want to hide column **B** and **C**, place your mouse pointer over the right header border of column **C**, and drag the border past the left header border of column **B**:



Using the mouse to hide Rows

- Begin by placing the mouse pointer on the bottom-most header border of the row(s) you want to hide.
- Drag the border past the top most header border of the row(s) you want to hide.

For example, if you want to hide row **2** to **4**, place your mouse pointer over the bottom header border of row **4**, and drag the border past the top header border of row **2**:



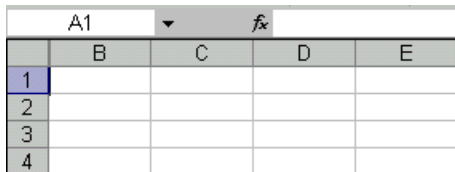
Displaying hidden Columns

- Begin by selecting the columns on either side of the hidden column(s).
- From the main menu, choose **Format > Column > Unhide**.

Note: If column **A** is hidden, you will need to navigate to cell **A1** instead of selecting the columns on either side of column **A**.

To navigate to cell A1

- From the main menu, choose **Edit > Go To**, type **A1** in the **Reference** text box, and click **OK**:



Displaying hidden Rows


- Begin by selecting the rows on either side of the hidden row(s).
- From the main menu, choose **Format > Row > Unhide**.

Note: If row **1** is hidden, you will need to navigate to cell **A1** instead of selecting the rows on either side of row **1**.

To navigate to cell A1

- From the main menu, choose **Edit > Go To**, type **A1** in the **Reference** text box, and click **OK**:


Using the mouse to display hidden Columns

- Begin by placing the mouse pointer between the two column headers where column(s) are hidden.
- Move the mouse pointer slightly to the right until it changes from a single-lined drag cursor to a double-lined drag cursor .
- Drag the column border to the right to display the hidden column:

	A	D	E	F
1				
2				
3				

Note: You can only display one hidden column at a time.

Using the mouse to display hidden Rows

- Begin by placing the mouse pointer between the two row headers where row(s) are hidden.
- Move the mouse pointer down slightly until it changes from a single-lined drag cursor to a double-lined drag cursor .
- Drag the row border to down to display the hidden row:

	A	D	E	F
1				
5				
6				
7				

Note: You can only display one hidden row at a time.

Review Questions

How would you:

- Create a new style?
- Apply a style?
- Change the formatting of a style?
- Remove a style from cells?
- Delete a style?
- Use conditional formatting?
- Change conditional formatting?
- Delete conditional formatting?
- Find cells with conditional formatting?
- Copy and apply cell formatting with the Format Painter?
- Copy and apply column width or row height with the Format Painter?

- Copy and apply the Format Painter in multiple locations?
- Change the color of the Gridlines?
- Turn off the onscreen Gridlines?
- Print Gridlines?
- Hide Columns?
- Hide Rows?
- Use the mouse to hide Columns?
- Use the mouse to hide Rows?
- Display hidden Columns?
- Display hidden Rows?
- Use the mouse to display hidden Columns?
- Use the mouse to display hidden Rows?

SAMPLE

More Formulas and Functions

When you have completed this learning module you will have seen how to:

- Use the Series Command
- Apply a list series
- Apply a numeric series
- Apply a basic numeric series
- Create a custom list series
- Display the Insert Function wizard
- Choose a function from the Insert Function wizard
- Enter Function Arguments in the Insert Function wizard
- Use the Most Recently Used function category
- Use the Financial function category
- Use the Date & Time function category
- Use the Math & Trig function category
- Use the Statistical function category
- Use the Lookup & Reference function category
- Use the Database function category
- Use the Text function category
- Use the Logical function category
- Use the Information function category
- Find and correct errors in Formulas
- Find error values
- Correct error values
- Use the Formula error checker
- Recheck ignored errors
- Customize the Formula error checker
- Display the Formula Auditing toolbar
- Use the Formula Auditing toolbar
- Trace Precedents
- Remove Precedent Arrows
- Trace Dependents
- Remove Dependent Arrows
- Add a new comment
- Evaluate Formulas one step at a time
- Use the Watch Window
- Add a Watch to a cell
- Add a Watch to all cells with Formulas
- Display a cell in the Watch Window
- Delete a Watch
- Hide the Watch Window

Using the Series Command

Using the Series Command

- Excel 2003 recognizes three different types of series:

Linear: series increases or decreases by a constant value.

Growth: series increases or decreases by a constant multiple.

AutoFill: Excel 2003 can extend various types of data by predicting the next items in the series. For example, Q1, Q2, Q3, and Q4.

Applying a list series

- Type the first item of the list series into the cell you want.
- Place the mouse over the small square at the bottom-right corner of the selected cell (your mouse pointer will appear as a bold plus (+) sign).
- Drag in any direction and release the mouse button when you have reached the last cell in your list series:

	A	B
1	Q1	
2		
3		
4		
5		
6		Q4

Note: As you drag the mouse, a screen tip displays the last item in your series. When you release the mouse button, the selected cells will be filled with the list series:

	A	B
1	Q1	
2	Q2	
3	Q3	
4	Q4	
5		
6		

Applying a numeric series

- Excel can create a linear or growth numeric series based on two starting numbers.
- Type the first number of the series into the cell you want, and type the second number of the series into the cell adjacent to the first number.
- Select both cells.
- Place the mouse over the small square at the bottom-right corner of the selected cells (your mouse pointer will appear as a bold plus (+) sign).
- Drag in any direction and release the mouse button when you have reached the last cell in your numeric series. When you release the mouse button, the selected cells will be filled with the numeric series:

	A	B	C	D	E	F	G
1	1	4					
2						16	
3							

Note: As you drag the mouse, a screen tip displays the last item in your series. To increment a series, drag the mouse down or to the right. To decrement a series, drag the mouse up or to the left.

Applying a basic numeric series

- Excel can create a basic numeric series by incrementing or decrementing the starting number by one.
- Type the starting number of the basic numeric series into the cell you want.
- Place the mouse over the small square at the bottom-right corner of the selected cell (your mouse pointer will appear as a bold plus (+) sign).
- Hold down the **Ctrl** key, drag in any direction, and release the mouse button when you have reached the last cell in your basic numeric series. When you release the mouse button, the selected cells will be filled with the numeric series:

	A	B	C
1			
2			
3			
4			
5			
6			
7		128	
8			123
9			

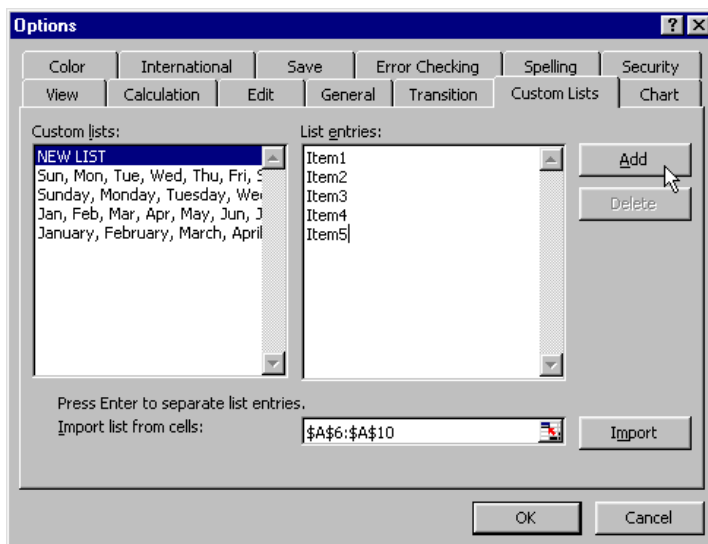
Note: To increment a series, drag the mouse down or to the right. To decrement a series, drag the mouse up or to the left.

Creating a custom list series

- With Excel, you can create a custom list series for future use.
- From the main menu, choose **Tools > Options** to display the **Options** dialog box, and click on the **Custom Lists** tab.
- Select **NEW LIST** from the **Custom lists** text area, enter the list entries into the **List entries** text area, and click **Add** to add the series

OR enter a range in the **Import list from cells** text box, and click **Import** to import an existing series.

- Click **OK**:



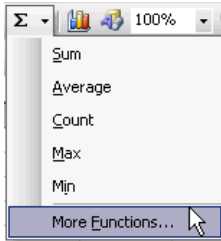
Using the Insert Function Wizard

Displaying the Insert Function wizard

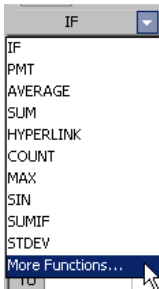
- A function can be inserted into a formula using the **Insert Function** wizard.
- To access the Insert Function wizard, begin by selecting the cell you want.
- From the main menu, choose **Insert > Function** to display the **Insert Function** wizard

OR click on the **Insert Function** icon  on the **Formula bar**

OR click on the **AutoSum** down arrow on the **Standard** toolbar, and choose **More Functions**:



OR type the equal (=) sign into the cell, click on the **Functions** down arrow, and choose **More Functions**:

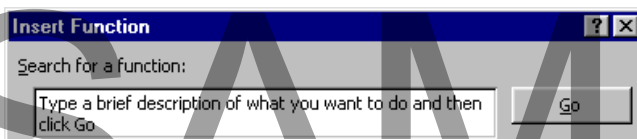


Choosing a function from the Insert Function wizard

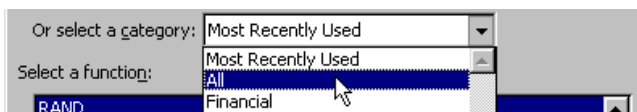
- From the **Insert Function** wizard, locate the function you want, and click **OK** to display the **Function Arguments** dialog box.

Note: You can use the following features of the Insert Function wizard to help you find the function you want.

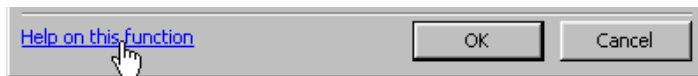
- Type in a brief description of the function in the **Search for a function** text box, and click on the **Go** button:



- Click on the **Select a category** down arrow and choose a category to display the functions in a category or choose **All** to display all functions:

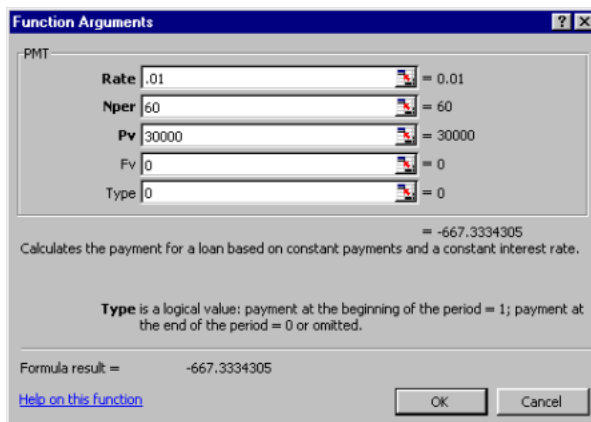



- Click on a function in the **Select a function** text area to display a brief description of the function and its arguments. Click on **Help on this function** to see the detailed description of the function and its arguments:



Entering Function Arguments in the Insert Function wizard

- After selecting a function to insert, the **Insert Function** wizard will prompt you for arguments with the **Function Arguments** dialog box. Each argument in the function will be listed with its own text box. Arguments that are in bold typeface are required for the function; arguments in normal typeface are optional.
- Click in an argument text box to display a brief description of the argument.
- Enter a value, cell reference, or range reference into the argument text box.
- Check the **Formula result** area to see the results, and adjust the arguments as needed.
- Click **OK** to insert the function into the selected cell:



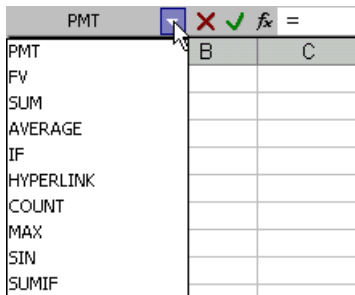
Note: You can click on the **Minimize Dialog** icon  to the right of the argument text boxes to minimize the **Function Arguments** dialog box, and select the cell or range you want to use from the Workbook window. Press the **Enter** key to return to the **Function Arguments** dialog box.

Using the Excel Function Categories

Using the Most Recently Used function category

- Excel organizes its database of Functions into categories, and keeps track of your most recently used functions so that you can access them quickly. You can display the functions in this category by using the following methods.

- Type the equal (=) sign into the cell, click on the **Functions** down arrow, and choose the most recently used function you want:



OR you can access this category from the **Insert Function** wizard.

Note: The Insert Function wizard defaults to display the **Most Recently Used** function.

Financial functions

- The **Financial** function category has the most common financial calculations including the following:

db

Calculates the fixed-declining depreciation of an asset.

ddb

Calculates the double-declining depreciation of an asset.

fv

Calculates the future value of an investment.

ipmt

Calculates the interest payment of an investment.

irr

Calculates the internal rate of return for a series of cash flows.

ispmt

Calculates the interest paid of an investment.

mirr

Calculates the internal rate of return for a series of cash flows, including cost of investment and interest on reinvestment.

nper

Calculates the number of periods for an investment.

Npv

Calculates the new present value of an investment.

pmt

Calculates the payment for a loan.

ppmt

Calculates the payment on the principal for an investment.

pv

Calculates the present value of an investment.

rate

Calculates the interest rate per period of a loan or an investment.

sln

Calculates the straight-line depreciation of an asset.

syd

Calculates the sum-of-year digits depreciation of an asset.

vdb

Calculates the depreciation of an asset for any period you specify using the double-declining balance method or some other method.

Date & Time functions

- The **Date & Time** category has functions for working with date and time. Excel uses serial numbers to store dates, giving each day of each year a unique number. The serial numbers then can be manipulated mathematically.
- For example, to find out a date that is 45 days from December 12, 2001, you would use the **DATE** function to convert the date into a serial number then add 45. In this example, the formula would be: **=DATE(2001,12,3)-45**
- The following lists the Date & Time functions in Excel:

DATE

Returns the serial number of a particular date.

DATEVALUE

Converts a date in the form of text to a serial number.

DAY

Converts a serial number to a day of the month.

DAYS360

Calculates the number of days between two dates based on a 360-day year.

HOUR

Converts a serial number to an hour.

MINUTE

Converts a serial number to a minute.

MONTH

Converts a serial number to a month.

NOW

Returns the serial number of the current date and time.

SECOND

Converts a serial number to a second.

TIME

Returns the serial number of a particular time.

TIMEVALUE

Converts a time in the form of text to a serial number.

TODAY

Returns the serial number of the current date.

WEEKDAY

Converts a serial number to a day of the week.

YEAR

Converts a serial number to a year.

Math & Trig functions

- The **Math & Trig** function category has the most common mathematical and trigonometry calculations including the following:

ABS

Returns the absolute value of a number.

ACOS

Returns the arccosine of a number in radians.

ACOSH

Returns the inverse hyperbolic cosine of a number.

ASIN

Returns the arcsine of a number in radians.

ASINH

Returns the inverse hyperbolic sine of a number.

ATAN

Returns the arctangent of a number in radians.

ATAN2

Returns the arctangent of the specified x- and y- coordinates in radians.

ATANH

Returns the inverse hyperbolic tangent of a number.

CEILING

Rounds a number up, to the nearest integer or to the nearest multiple of significance.

COMBIN

Returns the number of combinations for a given number of items.

COS

Returns the cosine of an angle.

COSH

Returns the hyperbolic cosine of a number.

DEGREES

Converts radians to degrees.

EVEN

Rounds a number to the nearest even integer.

EXP

Returns e raised to the power of a given number.

FACT

Returns the factorial of a number.

FLOOR

Rounds a number down, toward zero, to the nearest multiple of significance.

INT

Rounds a number down to the nearest integer.

LN

Returns the natural logarithm of a number.

SAMPLE

LOG

Returns the logarithm of a number to the base you specify.

LOG10

Returns the base-10 logarithm of a number.

MDETERM

Returns the matrix determinant of an array.

MINVERSE

Returns the inverse matrix for the matrix stored in an array.

MMULT

Returns the matrix product of two arrays.

MOD

Returns the remainder of a division.

ODD

Rounds a number to the nearest odd integer.

PI

Returns the value of Pi.

POWER

Returns the result of a number raised to a power.

PRODUCT

Multiplies all the arguments.

RADIANS

Converts degrees to radians.

RAND

Returns a random number between 0 and 1.

ROMAN

Converts an Arabic numeral to Roman.

ROUND

Rounds a number to a specified number of digits.

ROUNDDOWN

Rounds a number down, toward zero.

ROUNDUP

Rounds a number up.

SAMPLE

SIGN

Returns the sign of a number.

SIN

Returns the sine of an angle.

SINH

Returns the hyperbolic sine of a number.

SQRT

Returns the square root of a number.

SUBTOTAL

Returns a subtotal in a list or database.

SUM

Adds all the numbers in a range of cells.

SUMIF

Adds the cells specified by a given condition or criteria.

SUMPRODUCT

Returns the sum of the products of corresponding ranges or arrays.

SUMSQ

Returns the sum of squares of the arguments.

SUMX2MY2

Sums the difference between the squares of two corresponding ranges or arrays.

SUMX2PY2

Returns the sum total of the sums of squares of numbers in two corresponding ranges or arrays.

SUMXMY2

Sums the squares of the differences in two corresponding ranges or arrays.

TAN

Returns the tangent of an angle.

TANH

Returns the hyperbolic tangent of a number.

TRUNC

Truncates a number to an integer.

SAMPLE

Statistical functions

- The **Statistical** function category has a wide range of statistical calculations.
- Excel 2003 has a large number of new statistical functions, as well as changes to existing functions in order to make them more accurate.

The following provides a sample of the calculations available:

AVEDEV

Returns the average of data point absolute deviations from their mean.

AVERAGE

Calculates the average of the arguments.

AVERAGEA

Calculates the average of its arguments, which includes the evaluation of text and logical values.

BETADIST

Returns the cumulative beta probability density function.

BETAINV

Returns the inverse of the cumulative beta probability function.

BINOMDIST

Returns the individual term binomial distribution probability.

CHIDIST

Returns the one-tailed probability of the chi-squared distribution.

CHIINV

Returns the inverse of the one-tailed probability of the chi-squared distribution.

CHITEST

Returns the test for independence.

CONFIDENCE

Returns the confidence interval for a population mean.

CORREL

Returns the correlation coefficient between two sets of data.

COUNT

Counts the number of cells containing data.

COUNTA

Counts the number of cells that are not empty.

COUNTBLANK

Counts the number of empty cells in a range.

COUNTIF

Counts the number of cells that meet the given condition.

COVAR

Returns the covariance of two data sets.

CRITBINOM

Returns the smallest value of which the cumulative binomial distribution is equal to or greater than a criterion value.

DEVSQ

Returns the sum of squares of deviations of data points from the mean.

EXPONDIST

Returns the exponential distribution.

FDIST

Returns the F probability distribution for two data sets.

FINV

Returns the inverse of the F probability distribution.

FISHER

Returns the Fisher transformation.

FISHERINV

Returns the inverse of the Fisher transformation.

FORECAST

Predicts a future value using existing values.

FREQUENCY

Calculates how often values occur.

FTEST

Returns the result of an F-test.

GAMMADIST

Returns the gamma distribution.

GAMMAINV

Returns the inverse of the gamma cumulative distribution.

GAMMALN

SAMPLE

Returns the natural logarithm of the gamma function.

GEOMEAN

Returns the geometric mean of an array.

GROWTH

Returns numbers in an exponential growth trend matching known data points.

HARMEAN

Returns the harmonic mean of a positive number data set.

HYPGEOMDIST

Returns the hypergeometric distribution.

INTERCEPT

Calculates the point at which a line will intersect the y-axis using best-fit regression.

KURT

Returns the kurtosis of data sets.

LARGE

Returns the k-th largest value, where k is the level.

LINEST

Returns parameters of a linear trend.

LOGEST

Returns statistics that describe exponential curves.

LOGINV

Returns the inverse of the lognormal distribution.

LOGNORMDIST

Returns the cumulative lognormal distribution.

MAX

Returns the largest value in a range.

MAXA

Returns the largest value in a values set.

MEDIAN

Returns the median.

MIN

Returns the smallest value in a range.

SAMPLE

MINA

Returns the smallest value in a values set.

MODE

Returns the most frequently occurring value in a range.

NEGBINOMDIST

Returns the negative binomial distribution.

NORMDIST

Returns the normal cumulative distribution for a specified mean and standard deviation.

NORMINV

Returns the inverse of the normal cumulative distribution.

NORMSDIST

Returns the standard normal cumulative distribution.

NORMSINV

Returns the inverse of the standard normal cumulative distribution.

PEARSON

Returns the Pearson product moment correlation coefficient.

PERCENTILE

Returns the k-th percentile of values in a range.

PERCENTRANK

Returns the rank of data set value as a percentage of the data set.

PERMUT

Returns the number of permutations for a given number of objects that can be selected from the total number of objects.

POISSON

Returns the Poisson distribution.

PROB

Returns the probability that values in a range are between two limits or equal to a lower limit.

QUARTILE

Returns the quartile of a data set.

RANK

Returns the rank of a number in a numbers list.

RSQ

Returns the square of the Pearson product moment correlation coefficient.

SKEW

Returns the skewness of a distribution.

SLOPE

Returns the slope of a linear regression line.

SMALL

Returns the k-th smallest value, where k is the level.

STANDARDIZE

Returns a normalized value from a distribution.

STDEV

Estimates standard deviation based on a sample.

TDEVA

Estimates standard deviation based on a sample, which includes logical values and text.

STDEVP

Returns standard deviation based upon an entire population, but ignores logical values and text.

STDEVPA

Returns standard deviation based on an entire population – including logical values and text.

STEYX

Returns the standard error of the predicted y-value for each x in a regression.

TDIST

Returns the Student's t-distribution.

TINV

Returns the inverse of the Student's t-distribution.

TREND

Returns numbers in a linear trend using the least squares method.

TRIMMEAN

Returns the mean of the interior portion of a data values set.

TTEST

Returns the probability associated with a Student's t-Test.

SAMPLE

VAR

Estimates variance based on a sample.

VARA

Estimates the variance based upon a sample – including logical values and text.

VARP

Calculates variance based upon an entire population, but ignores logical values and text.

VARPA

Calculates variance based upon an entire population – including logical values and text.

WEIBULL

Returns the Weibull distribution.

ZTEST

Returns the two-tailed P-value of a z-test.

Lookup & Reference functions

- The **Lookup & Reference** category has the functions to access information. For example, the **HLOOKUP** and **VLOOKUP** functions can be used to look up values in a table, or use the **CHOOSE** function to select a value from a list based on an index number. The following is a list of the Lookup & Reference functions:

ADDRESS

Creates a cell reference as text.

AREAS

Returns the number of areas in a reference.

CHOOSE

Chooses a value or action to perform from a list of values.

COLUMN

Returns the column number of a reference.

COLUMNS

Returns the number columns in an array or reference.

GETPIVOTDATA

Extracts data stored in a Pivot Table.

HLOOKUP

Returns the value of the specified row in a particular column heading.

HYPERLINK

Creates a link that opens a document locally or from the Internet.

INDEX

Returns the value of a particular row and column.

INDIRECT

Returns the reference specified by a text string.

LOOKUP

Looks up a value from a one-row or one-column range or from an array

MATCH

Returns the relative position of an array item that matches a specified value and order.

OFFSET

Returns a reference that is off a given number of rows and columns from the starting reference.

ROW

Returns the row number of a reference.

ROWS

Returns the number of rows in an array or reference.

RTD

Retrieves real-time data from an application with COM automation support.

TRANSPOSE

Converts a vertical range to a horizontal range, or vice versa.

VLOOKUP

Returns the value of the specified column in a particular row heading.

SAMPLE

Database functions

- The **Database** category has database manipulation functions, including the following:

DAVERAGE

Averages the record values that match specific conditions.

DCOUNT

Counts the cells containing numbers in the record values that match specific conditions.

DCOUNTA

Counts non-empty cells in the record values that match specific conditions.

DGET

Extracts a record that matches specific conditions.

DMAX

Returns the largest number in the record values that matches specific conditions.

DMIN

Returns the smallest number in the record values that matches specific conditions.

DPRODUCT

Multiplies the record values that matches specific conditions.

DSTDEV

Estimates the standard deviation based on a sample of records.

DSTDEVP

Calculates the standard deviation based on all the records.

DSUM

Adds the numbers in the record values that match specific conditions.

DVAR

Estimates variance based on a sample of records.

DVARP

Estimates variance based on all the records.

Text functions

- The **Text** category has the text manipulation functions, including the following:

BAHTTEXT

Converts a number to text.

CHAR

Returns the character specified by the code number.

CLEAN

Removes all nonprintable characters form text.

CODE

Returns a numeric code for the first character in a text string.

CONCATENATE

Joins several text items into one text item.

DOLLAR

Converts a number to text, using currency format.

EXACT

Checks to see if two text values are identical.

FIND

Finds one text value within another (case-sensitive).

FIXED

Formats a number as text with a fixed number of decimals.

LEFT

Returns the left-most characters from a text string.

LEN

Returns the number of characters in a text string.

LOWER

Converts text to lowercase.

MID

Returns a specific number of characters from a text string starting at the position you specify.

PROPER

Capitalizes the first letter in each word of a text string.

REPLACE

Replaces characters within a text string.

REPT

Repeats text a given number of times.

RIGHT

Returns the right-most characters from a text string.

SEARCH

Finds one text string within another (not case-sensitive).

SUBSTITUTE

Replaces new text for old text in a text string.

SAMPLE

T

Converts its arguments to text.

TEXT

Formats a number and converts it to text.

TRIM

Removes spaces from text.

UPPER

Converts text to uppercase.

VALUE

Converts a text string to a number.

Logical functions

- When carrying out calculations, you may need to make decisions based on the results. The **Logical** category has a number of functions that allow you to evaluate logical tests and make decisions based on the result of the evaluation. **Logical operators**, equal to (=), greater than (>), less than (<), greater than or equal to (>=), and less than or equal to (<=), are used to evaluate logical tests.
- The following is a list of the Logical functions:

AND

Returns TRUE if all arguments are TRUE.

FALSE

Returns the logical value FALSE.

IF

Checks condition and returns the specified value for TRUE or FALSE.

NOT

Changes FALSE to TRUE, and vice versa.

OR

Returns TRUE if any one of the arguments are TRUE.

TRUE

Returns the logical value TRUE.

SAMPLE

Information functions

- Functions to validate data and to provide information on values.

CELL

Returns information about the formatting, location, or contents of the upper-left cell in a reference.

ERROR,TYPE

Returns a number matching an error value.

INFO

Returns information about the current operating environment.

ISBLANK

Returns TRUE if the value is blank.

ISERR

Returns TRUE if the value is an error value (except #N/A).

ISERROR

Returns TRUE if the value is any error value.

ISLOGICAL

Returns TRUE if the value is a logical.

ISNA

Returns TRUE if the value is a #N/A value.

ISNONTXT

Returns TRUE if the value is not text.

ISNUMBER

Returns TRUE if the value is a number.

ISREF

Returns TRUE if the value is a reference.

ISTEXT

Returns TRUE if the value is text.

N

Converts non-numeric values to a number.

NA

Returns the error value #N/A.

TYPE

Returns information on the data type of a value.


SAMPLE

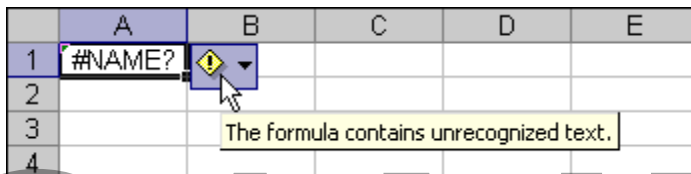
Correcting Formulas

Finding and correcting errors in Formulas

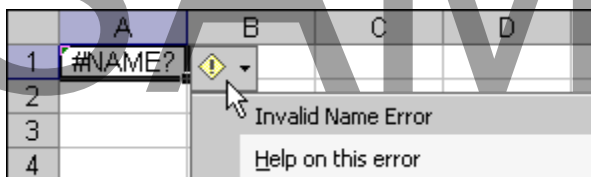
- Excel provides the following tools to help you find and correct errors in formulas.
- **Error values** identify formulas that cannot be evaluated, for example **#NAME?**.
- **Formula error checker** identifies formulas with common problems using predefined rules.
- Use the **Formula Auditing toolbar** to calculate your formula one step at a time and to trace relationships between cells as defined by formulas.
- **Watch Window** watches the formula and results of cells you identify.

Finding error values

- When Excel cannot evaluate a formula result, an **error value** is displayed. The error value displayed depends on the type of error. Cells with error values are marked at the top-left corner with a triangle (usually green).
- To see the reason for the error value, begin by selecting the cell with the error value you want to correct.
- Place your mouse over the warning icon  to display the screen tip description:

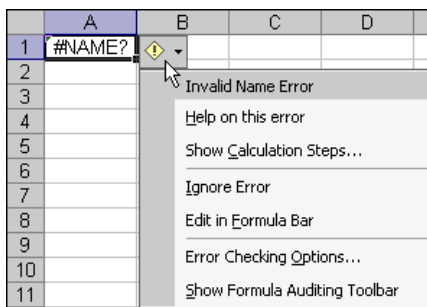


OR click on the warning icon to display the reason at the top of the popup menu:



Correcting error values


- You can correct an **error value** by selecting an option from the warning icon popup menu. For some error values, the popup menu will include corrective actions to correct the error.
- To correct an error value, begin by selecting the cell with the error value you want to correct. Click on the warning icon, and select a corrective action or one of the following options.
- Help on this error:** get a detailed explanation of the error.
- Show Calculation Steps:** calculate your formula one step at a time to identify the location of the error.
- Ignore Error:** ignore the error and remove the top-left triangle.
- Edit in Formula Bar:** place the mouse cursor in the Formula Bar to edit the formula.
- Error Checking Options:** display the Error Checking Options dialog box.
- Show Formula Auditing Toolbar:** display the Formula Auditing toolbar:

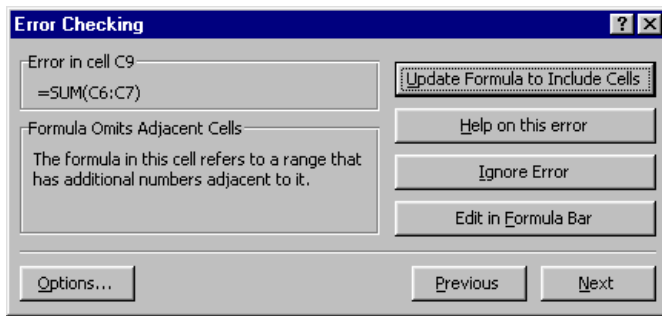


Using the Formula Error Checker

Using the Formula error checker

- The **Formula error checker** identifies formulas with common problems using predefined rules. Begin by selecting the Worksheet you want to check.
- From the main menu, choose **Tools > Error Checking**

OR from the **Formula Auditing** toolbar, click on the **Error Checking** icon . If an error is found, the **Error Checking** dialog box appears:



- Resolve the error by selecting a corrective action (**Update Formula to Include Cells** is the corrective action in the above example), or by ignoring the error.
- Click **Next**.
- Continue until the error check is complete message appears:



Note: Once a problem is ignored, it will not appear in future error checks.

SAMPLE

End of the preview sample



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