EXCEL 2002 (XP)

FOCUS ON: DESIGNING SPREADSHEETS AND WORKBOOKS

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LESSON 1 -
WORKING WITH MULTIPLE WORKSHEETS

In this lesson, you will learn how to:

- Use multiple worksheets
- Navigate between worksheets
- Select worksheets
- Rename worksheets
- Select multiple worksheets
- Color worksheet tabs
- Insert worksheets
- Delete worksheets
- Print selected worksheets

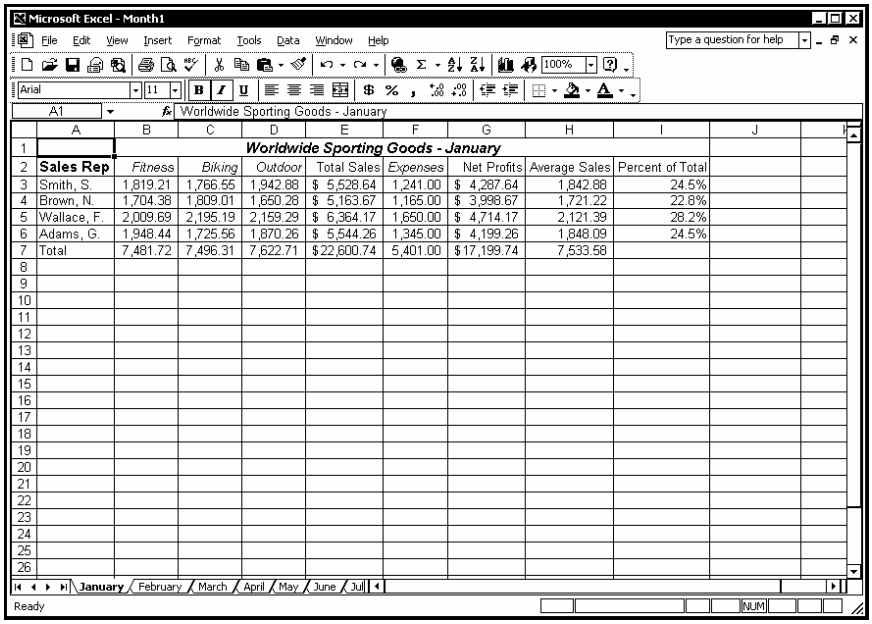
USING MULTIPLE WORKSHEETS

Discussion

Workbook files can contain multiple worksheets. Using multiple worksheets is a convenient way to manage related data in the same workbook. For example, you can enter sales data for individual months, quarters, or regions in separate worksheets. You also can create summary worksheets that add numbers from each of the worksheets in a workbook. In addition, you can group worksheets to apply consistent formatting, as well as to print all the worksheets as a group.

By default, a new workbook contains three worksheets. The name of each worksheet appears on a tab above the status bar. The default name is **Sheet**, followed by a number. You can change the name to indicate the type of information on the worksheet. For example, if your worksheet contained your weekly expenses, you could rename the default worksheet **Expenses**. You can also add color to a worksheet tab.

A workbook can contain up to 255 worksheets. Worksheets can be moved and copied within the current workbook.



A workbook with multiple worksheets

To change the number of default worksheets, select the **General** page in the Options dialog box.

NAVIGATING BETWEEN WORKSHEETS

Discussion

The active worksheet is the worksheet that is currently displayed. You can display a worksheet by clicking its tab; however, by default, only six worksheet tabs appear in the workbook window. If you have more than six worksheets, you cannot see all the worksheet tabs at one time. For example, in a workbook that contains worksheets for every month of the year, the tabs for the last few months of the year would be hidden, depending on how the months are named. If the worksheet tab you want to view is not visible, you can use the tab scrolling buttons to display hidden tabs.

Button	Function
	Displays the next worksheet tab to the right.
	Displays the previous worksheet tab to the left.
	Displays the last worksheet tab in the workbook.
	Displays the first worksheet tab in the workbook.

You can drag the tab split box located to the left of the horizontal scroll bar as desired to display more or fewer tabs. You can double-click the tab split box to return the tab display to the default number of tabs.

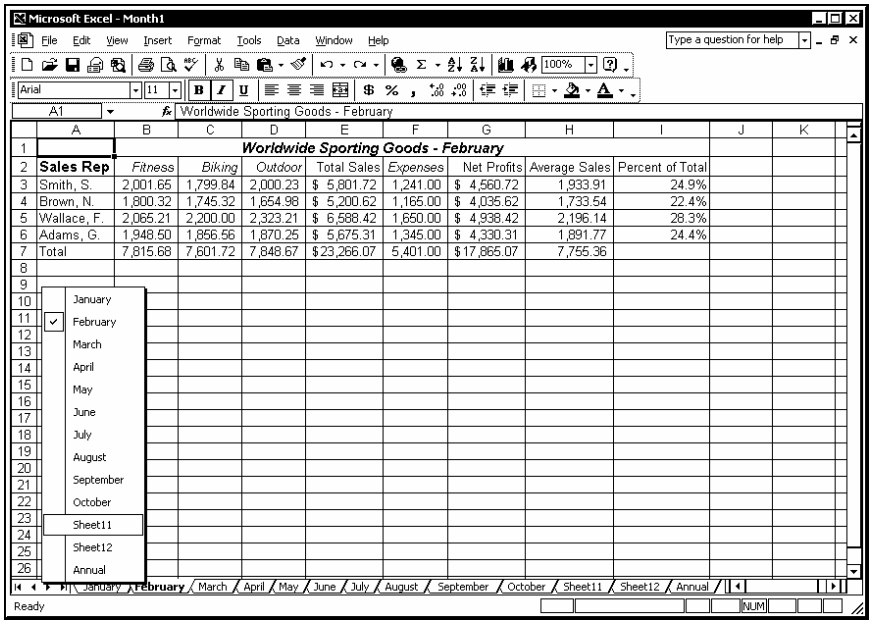
Procedures

1. To view the next tab to the right, click the **Next Tab** button .
2. To view the next tab to the left, click the **Previous Tab** button .
3. To view the last worksheet tab, click the **Last Tab** button .
4. To view the first worksheet tab, click the **First Tab** button .
5. To view the contents of a worksheet, click the desired worksheet tab.

SELECTING WORKSHEETS

Discussion

You can select a worksheet at any time by displaying the sheet list. The sheet list contains the name of all the worksheets in a workbook. It is a convenient tool when using a workbook with a large number of worksheets. For example, in an annual workbook containing monthly worksheets, you can use the sheet list to quickly select and view the third month in each quarter, one at a time.



The sheet list

Procedures

1. Right-click any tab scrolling button.
2. Select the desired worksheet.

RENAMING WORKSHEETS

Discussion

You can replace the default worksheet names with descriptive names. For example, a worksheet containing January sales figures can be named **January**. Worksheet names can be up to 31 characters long, but cannot include colons (**:**), slash marks (/), backslashes (\), question marks (**?**), or asterisks (*****). In addition, the name cannot be enclosed in square brackets (**[]**). Each worksheet name in a workbook must be unique.

Procedures

1. Double-click the worksheet tab you want to rename.
2. Type the desired worksheet name.
3. Press **[Enter]**.

SELECTING MULTIPLE WORKSHEETS

Discussion

Before you can apply a command to a worksheet, you must select the worksheet. If you select multiple worksheets, you can apply a command to all the worksheets at the same time. For example, you can copy, move, delete, and print all the worksheets in a selected group at the same time. In addition, when you insert new sheets, the number of sheets you select determines the number of sheets inserted.

	To deselect a selected worksheet without deselecting the group, hold the **[Ctrl]** key and click the worksheet tab you want to deselect**.**

	When multiple worksheets are selected, the text **[Group]** appears next to the title of the workbook.

	To deselect worksheet tabs, click any unselected worksheet tab.

Procedures

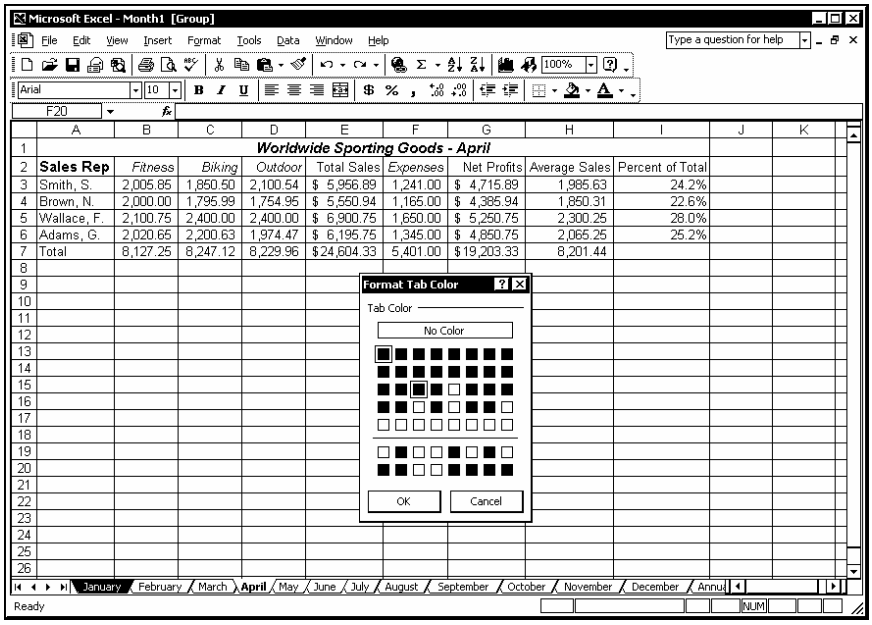
1. Click the tab of the first worksheet you want to select.
2. Hold **[Shift]** and click the tab of the last adjacent worksheet you want to select.
3. To add non-adjacent worksheets to the group, hold **[Ctrl]** and click the tab of each worksheet you want to add.

COLORING WORKSHEET TABS

Discussion

Excel allows you to add color to worksheet tabs. If color has been added to a worksheet tab, a horizontal line of the selected color appears below the worksheet name while the tab is selected; the entire sheet tab displays the color whenever the tab is not selected.

You can select single or multiple worksheets when adding color to worksheet tabs. For example, you may want to add the color red to all worksheets containing sales figures for the first quarter and add a different color for each of the second quarter worksheets.



Adding color to a worksheet tab

You can also right-click a worksheet tab and select the **Tab Color** command from the shortcut menu to display the **Format Tab Color** palette.

Procedures

1. Select the worksheet tab to which you want to add a color.
2. Select the **Format** menu.
3. Point to the **Sheet** command.
4. Select the **Tab Color** command.
5. Select the desired color.
6. Select **OK**.

INSERTING WORKSHEETS

Discussion

You can insert new worksheets into a workbook. For example, in a workbook containing worksheets for each month of the year, you can add worksheets for each quarter of the year. New worksheets are inserted to the left of the active worksheet. Excel gives new worksheets a default worksheet name, which you can change, if desired.

If you select multiple, adjacent worksheets, multiple worksheets are inserted. You cannot insert non-adjacent worksheets.

Procedures

1. Select the worksheet to the left of which you want to insert a new worksheet.
2. Select the **Insert** menu.
3. Select the **Worksheet** command.

DELETING WORKSHEETS

Discussion

You can delete unwanted worksheets. For example, you can delete a worksheet used for temporary calculations. When you delete a worksheet, the entire worksheet and the data it holds are permanently removed from the workbook.

> If you select multiple worksheets, multiple worksheets are deleted.

> If the worksheet you are deleting contains data, you will be prompted to confirm the deletion. You will not be prompted for a blank worksheet.

Procedures

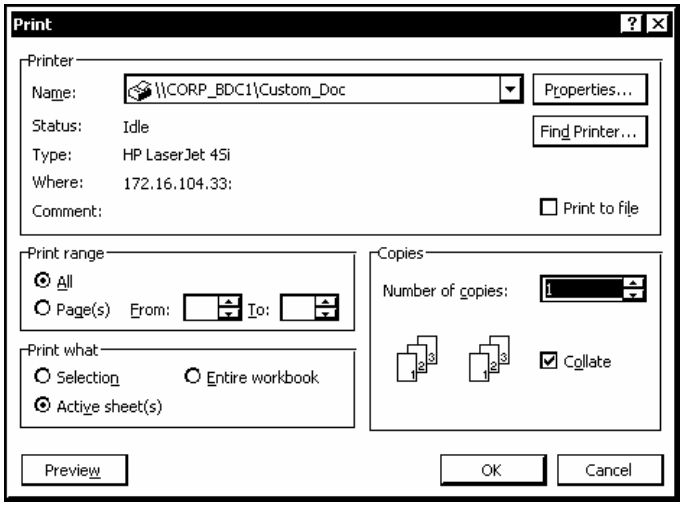
1. Right-click the tab of the worksheet you want to delete.
2. Select the **Delete** command.
3. Select **Delete**, if prompted.

PRINTING SELECTED WORKSHEETS

Discussion

You can print some or all the worksheets in a workbook. For example, in an annual workbook containing monthly worksheets, you may want to print only the worksheets for the most recent months.

When printing one or more worksheets instead of the entire workbook, you must select the worksheets you want to print prior to opening the Print dialog box.



Printing selected worksheets

	You can print and preview the entire workbook by selecting the **Entire workbook** option in the Print dialog box.

	After selecting the desired worksheets, you can see how they will look printed by clicking the **Print Preview** button on the **Standard** toolbar.

Procedures

1. Select the first worksheet you want to print.
2. Hold **[Shift]** and click the tab of the last adjacent worksheet you want to print.
3. Select the **File** menu.
4. Select the **Print** command.
5. Select the **Active Sheet(s)** option, if necessary.
6. Select **OK**.

LESSON 2 -
MANAGING WORKSHEETS

In this lesson, you will learn how to:

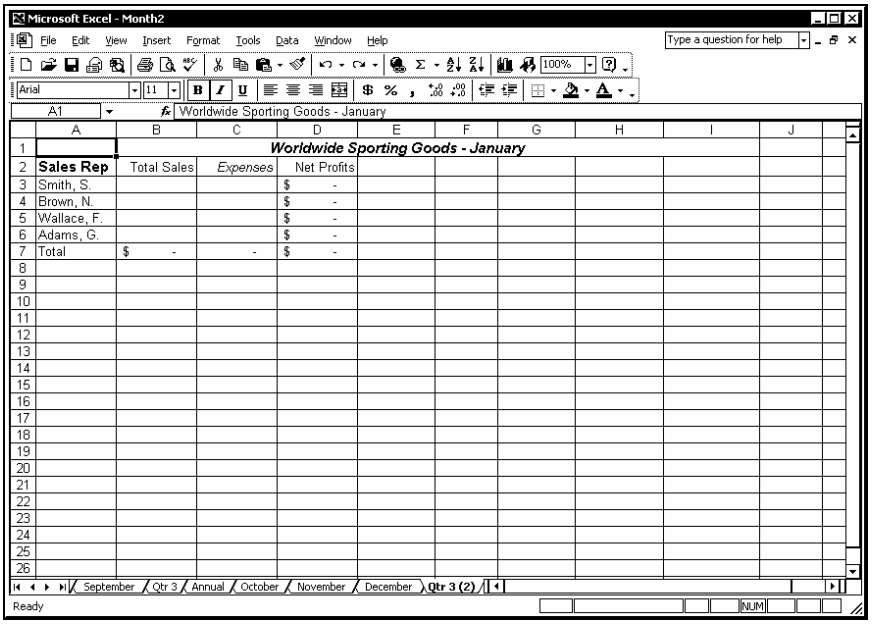
- Copy worksheets
- Move worksheets
- Use grouped worksheets
- Move data between worksheets
- Copy data between worksheets
- Create 3-D formulas
- Use 3-D ranges in functions

COPYING WORKSHEETS

Discussion

You can copy a worksheet and its contents to a new location. This option is useful after you have designed a framework for a worksheet (e.g., monthly column headings, row headings, formatting, and formulas) and you want to use that framework for several similarly structured worksheets.

When you copy a worksheet, the new copy is given the name of the original worksheet followed by a sequential number. You can also copy multiple, grouped worksheets. After the worksheets have been copied, they are automatically ungrouped.



A copied worksheet

When copying multiple worksheets, you must drag the tab for the first worksheet in the group, which appears in bold type. Otherwise, if you hold the **[Ctrl]** key and click the tab of another worksheet in the selected group, that worksheet is deselected.

If you cannot view the destination location for the copied worksheet, drag the copy beyond the edge of the displayed worksheet tabs. The tabs scroll to display additional worksheets.

Procedures

1. Select the tab of each worksheet you want to copy.
2. Hold **[Ctrl]** and drag the selected worksheet tabs to the desired location.

MOVING WORKSHEETS

Discussion

You can move a worksheet to a new location in a workbook and still have it retain the same name and contents. Moving worksheets allows you to rearrange them or to place new worksheets in a desired location in the workbook. For example, in an annual workbook containing monthly worksheets, you may want to reorder the worksheets so that the first, second, and third months in each quarter are adjacent.

You can also move multiple, grouped worksheets. After multiple grouped worksheets have been moved, they are automatically ungrouped.

Procedures

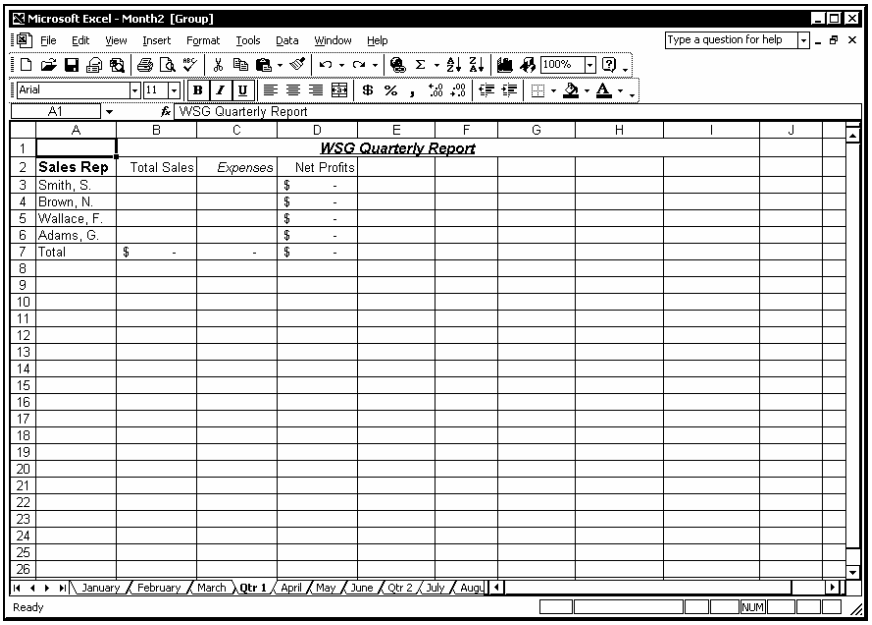
1. Select the tab of each worksheet you want to move.
2. Drag the selected worksheet tabs to the desired location.

USING GROUPED WORKSHEETS

Discussion

When multiple worksheets are selected, the worksheets are grouped. If you type, edit, create formulas, or format entries in one of the grouped worksheets, entries in the same cell in all the grouped worksheets change.

Grouping is useful when you want to create the same structure and appearance in all the worksheets in a workbook. For example, when creating monthly worksheets in a workbook, you can group the worksheets so that you can enter and format all the column headings, row headings, and formulas in the group at one time.



Adding data to grouped worksheets

Procedures

1. Select the first worksheet you want to group.
2. Hold **[Ctrl]** and click the tab of each additional worksheet you want to add to the group.
3. Select the cell in which you want to enter data.
4. Type the desired data.
5. Press **[Enter]**.
6. Select the cell to which you want to apply formatting.
7. Apply the desired formatting.

MOVING DATA BETWEEN WORKSHEETS

Discussion

If a worksheet contains data that can be better utilized on another worksheet, you can move data from one worksheet to the other.

The most common reason for moving data is to break up a single large worksheet into several smaller ones. For example, if a workbook consists of one large worksheet containing data for each month of the year, you can move the monthly data to separate worksheets.

	You can drag to move data between worksheets by holding the **[Alt]** key as you drag.

	When you move data between worksheets, the **Paste Options** button may appear, allowing you to control how the data is pasted.

Procedures

1. Select the worksheet containing the data you want to move.
2. Select the cells you want to move.
3. Click the **Cut** button .
4. Select the destination worksheet.
5. Select the first cell in the paste range.
6. Click the **Paste** button .

COPYING DATA BETWEEN WORKSHEETS

Discussion

You can copy data between worksheets, using the same techniques you use to copy and move data within a worksheet. For example, if one worksheet contains information you want to include on each worksheet in the workbook, you can copy the information as needed.

When copying data between worksheets, formulas update to the new locations, just as they do when you copy information within a worksheet.

	You can also copy data to another worksheet by dragging. Select the data, press the **[Ctrl]** and **[Alt]** keys, and drag the selection by its border, first to the worksheet tab, and then when the worksheet appears, to the desired location.

	When you copy data between worksheets, the **Paste Options** button may appear, allowing you to control how the data is pasted.

Procedures

1. Select the worksheet containing the data you want to copy.
2. Select the cells you want to copy.
3. Click the **Copy** button .
4. Select the destination worksheet.
5. Select the first cell in the paste range.
6. Click the **Paste** button .

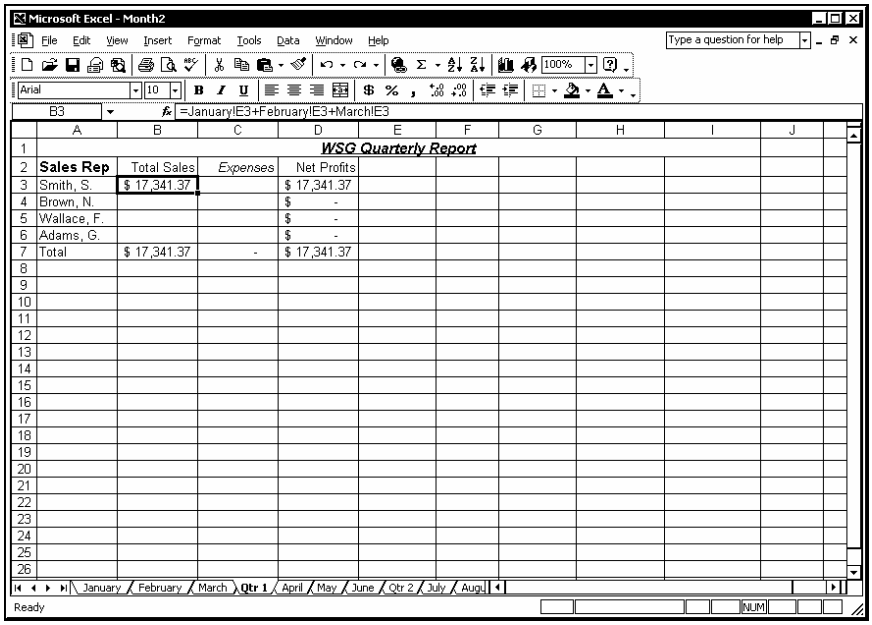
CREATING 3-D FORMULAS

Discussion

You can create formulas on one worksheet that refer to numbers on other worksheets in the same or different workbooks. You can use 3-D formulas to summarize data from all the worksheets in a workbook. For example, you can create quarterly worksheets in an annual workbook that summarize data from each month. Like all formulas, 3-D formulas update whenever the data used in the formula changes.

In 3-D formulas, the worksheet names are separated from the cell address by an exclamation point (**!**). For example, the following formula adds the number in cell E3 in each of four quarterly worksheets:

=Qtr 1!E3+Qtr 2!E3+Qtr 3!E3+Qtr 4!E3



A 3-D formula

Procedures

1. Select the worksheet in which you want to create a 3-D formula.
2. Select the cell in which you want to create the formula.
3. Type =.
4. Select the worksheet containing the data you want to use in the formula.
5. Select the cell containing the data you want to use in the formula.
6. Type the desired mathematical operator.
7. Select the worksheet containing the next piece of data you want to use in the formula.
8. Select the cell containing the data you want to use in the formula.
9. Continue adding mathematical operators and cell addresses as needed to complete the formula.
10. Press **[Enter]**.

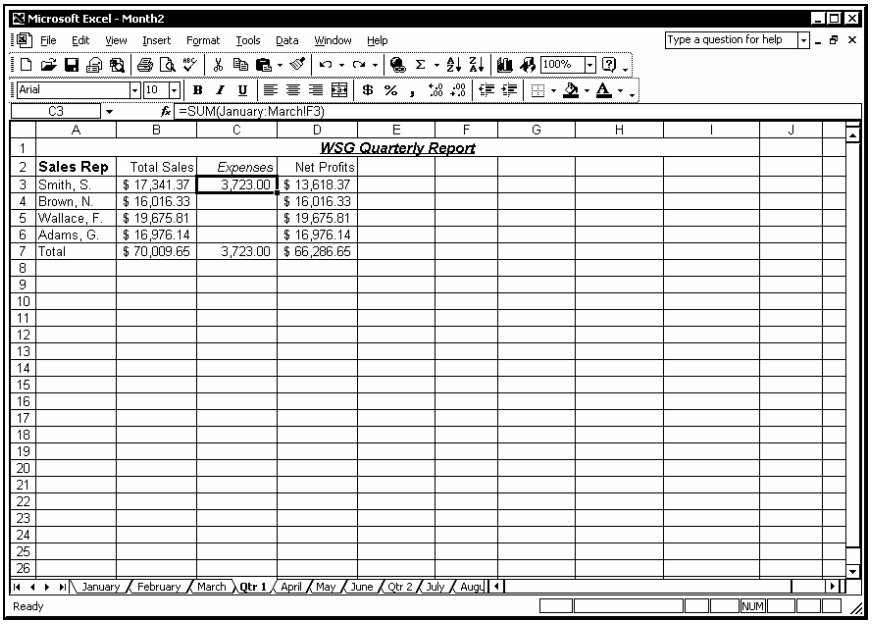
USING 3-D RANGES IN FUNCTIONS

Discussion

You can perform calculations on cells in multiple, adjacent worksheets by creating functions that use 3-D ranges. For example, you can use a 3-D range to sum the monthly totals that appear at the same cell address in multiple, adjacent worksheets. Since the function refers to the same cell address in adjacent worksheets, you can group the worksheets and then create the function. This technique can save time in creating functions such as **SUM** and **AVERAGE**.

In formulas that contain 3-D ranges, the worksheet names are separated from the cell address by an exclamation point (!). For example, in the following formula, the **SUM** function adds the numbers in cell F3 in four quarterly worksheets:

=SUM(Qtr 1:Qtr 4!F3)



A 3-D range in a SUM function

Procedures

1. Select the worksheet in which you want to enter the function.
2. Select the cell in which you want to enter the formula.
3. Type =, followed by the function name and an open parenthesis (**(**).

4. Select the first worksheet containing the data you want to use in the function.
5. Select the cell that contains the data you want to use in the function.
6. Hold **[Shift]** and select the last worksheet you want to include in the 3-D range.
7. Type the closing parenthesis (**)**).
8. Press **[Enter]**.

LESSON 3 -
COPYING AND MOVING DATA

In this lesson, you will learn how to:

- Copy/Cut and paste data
- Use the Paste Options button
- Using the Paste list
- Use the Clipboard task pane

COPYING/CUTTING AND PASTING DATA

Discussion

When you are creating a worksheet, you can save time by copying cell contents from one location to another. The **Copy** feature copies the selected cell contents to the Office Clipboard. The **Paste** feature pastes the contents from the Office Clipboard into the current selection on the worksheet.

When you copy cells that contain text or numbers, Excel creates an exact copy of the contents when they are pasted to another location. When you copy cells containing formulas, Excel adjusts the cell references to the row or column where the formula is pasted. For example, if the formula **=B1+B2+B3** calculates the total of three cells in column B and you copy that formula to the adjacent cell in column C, Excel adjusts the formula to **=C1+C2+C3** so that the total of the three corresponding cells in column C are calculated.

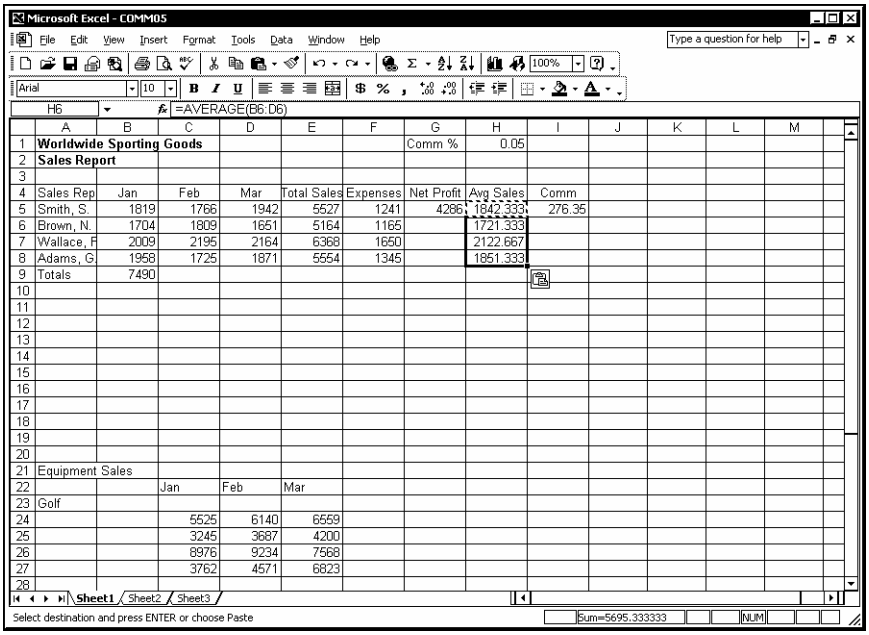
Excel assumes that the paste range exactly matches the copied range. For example, if the copied range consists of three cells, Excel assumes that the paste range will consist of three cells. As a result, you need only select the cell in the upper, left corner of the desired paste range to paste the entire copied range. If the copied range is a single cell and you select a paste range of multiple cells, the contents of the copied cell are pasted into each cell in the paste range.

You can also use the **Cut** and **Paste** features to move cell contents on a worksheet. The **Cut** feature cuts the cell contents from the worksheet, placing them on the Office Clipboard. The **Paste** feature pastes the contents of the Office Clipboard into the current selection. The contents of the cut range are then deleted from the worksheet.

When you move cells containing formulas, Excel does not adjust the cell references in the formulas. The formulas still refer to the original cells for the calculation. If you move both the formula and the cells containing the data, the cell references in the formula adjust to the new location of the data.

The **Paste** button on the **Standard** toolbar provides a **Paste** list. Clicking the **Paste** arrow displays a list of paste options. You can choose to paste a formula, paste the resulting value of a formula, paste a link, paste data without border formatting, or transpose a range of cells from a horizontal range to a vertical range or vice versa.

After an item has been pasted, the **Paste Options** button appears in the document next to the pasted text. You can use paste options to choose whether source or destination formatting should be applied, or you can press the **[Esc]** key to hide the button.



Copying and pasting data

	A blinking marquee remains around the copied range after it has been pasted to let you know which cells were copied. Pressing the **[Esc]** key removes the blinking marquee.

	If the Office Clipboard is set to appear automatically, the **Clipboard** task pane appears as soon as a second item is cut or copied.

	You should be careful when pasting data into a range, because pasting overwrites any existing cell contents in that range.

Procedures

1. Select the cell you want to copy.
2. Click the **Copy** button on the **Standard** toolbar.
3. Select the range into which you want to paste the cell contents.
4. Click the **Paste** button on the **Standard** toolbar.

5. Select the cell you want to cut.
6. Click the **Cut** button on the **Standard** toolbar.
7. Select the range into which you want to paste the cell contents.
8. Click the **Paste** button on the **Standard** toolbar.

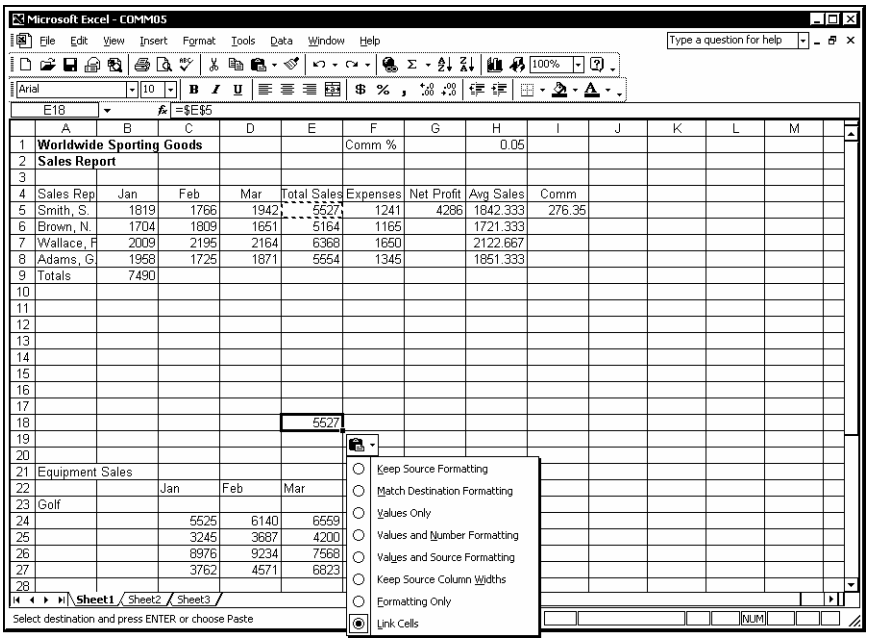
USING THE PASTE OPTIONS BUTTON

Discussion

The **Paste Options** button appears on the worksheet adjacent to the pasted cell or range of cells after you have pasted a cut or copied item. Paste options allow you to decide how formatting differences should be applied to the pasted cells. It also allows you to link the pasted data to the original cut or copied cell, if desired.

The available commands are determined by the data being pasted. When copying formatted text, you can select the **Keep Source Formatting** option to paste the text with its original formatting. When the **Match Destination Formatting** option is selected, the formatting in the paste location is applied to the pasted text. When pasting numeric data or a copied formula, you have additional options, such as pasting both values and source formatting, formatting only, or values only.

You can hide the **Paste Options** button by pressing the **[Esc]** key.



The Paste Options list

> The **Paste Options** button can be turned off by selecting the **Tools** menu and the **Options** command. In the Option dialog box, select the **Edit** page and deselect the **Show Paste Options buttons** option.

Procedures

1. Select the cell or range you want to move or copy.
2. Cut or copy the cells as desired.
3. Select the cell or range into which you want to paste the cut or copied contents.
4. Click the **Paste** button .
5. Click the **Paste Options** button .
6. Select the desired option.
7. To hide the **Paste Options** button, press **[Esc]**.

USING THE PASTE LIST

Discussion

When you copy text, numbers, or formulas, you can use the **Paste** button to paste the data into a new location. However, you can also use the **Paste** list to select other options for pasting text and formulas.

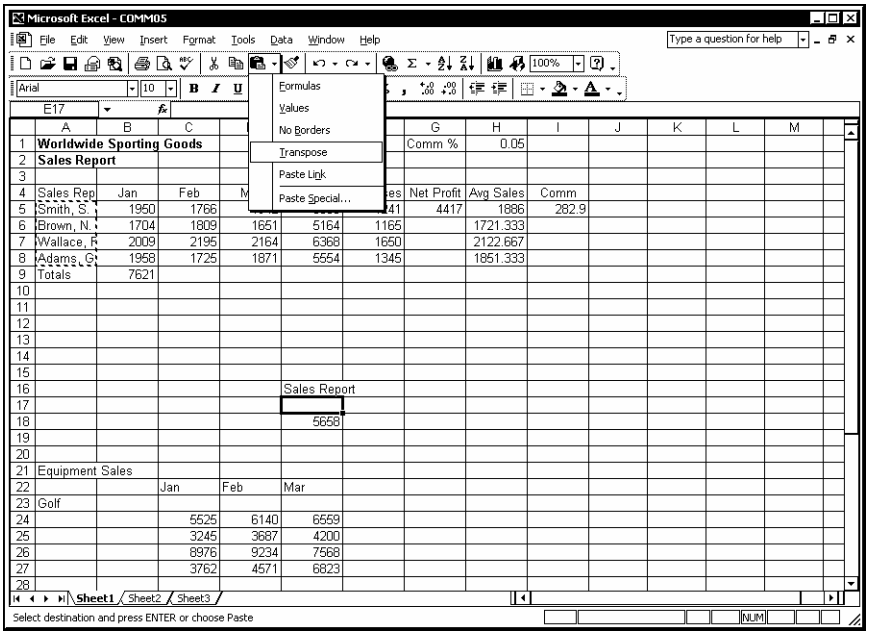
The **Formulas** command is the default paste command for the **Paste** button. Formulas are pasted into the new location and, if the referenced data is also copied, cell references are changed.

You can use the **Values** command to paste the results of a formula rather than the formula itself into a cell. This is useful if you want to paste just the current value of a formula and do not want the pasted data to be affected by new changes made to the original cell references.

The **No Borders** command allows you to copy a cell with borders and paste the contents of the cell without borders.

The **Transpose** command is used to switch a vertical range of cells to a horizontal range or visa versa. For example, you can copy the row headings in column A and transpose them to create column headings across row 15.

The **Paste Link** command pastes a link to the copied cell. If you paste cell B9 into cell D15 and select the **Paste Link** command, Excel pastes the link **=B9** into cell D15. Thereafter, cell D15 will always display the same value as cell B9.



The Paste list

> The **Paste Special** command in the **Paste** list opens the Paste Special dialog box, which provides additional options for pasting formats and data, and combining values.

Procedures

1. Select the cells you want to cut or copy.
2. Cut or copy the data as desired.
3. Select the cell or range into which you want to paste the cut or copied contents.
4. Click the arrow on the **Paste** button .

5. Select the desired command.

USING THE CLIPBOARD TASK PANE

Discussion

The Office Clipboard stores multiple cut or copied items, including graphics, from various worksheets or other Windows programs. You can then paste the items into one or more worksheets.

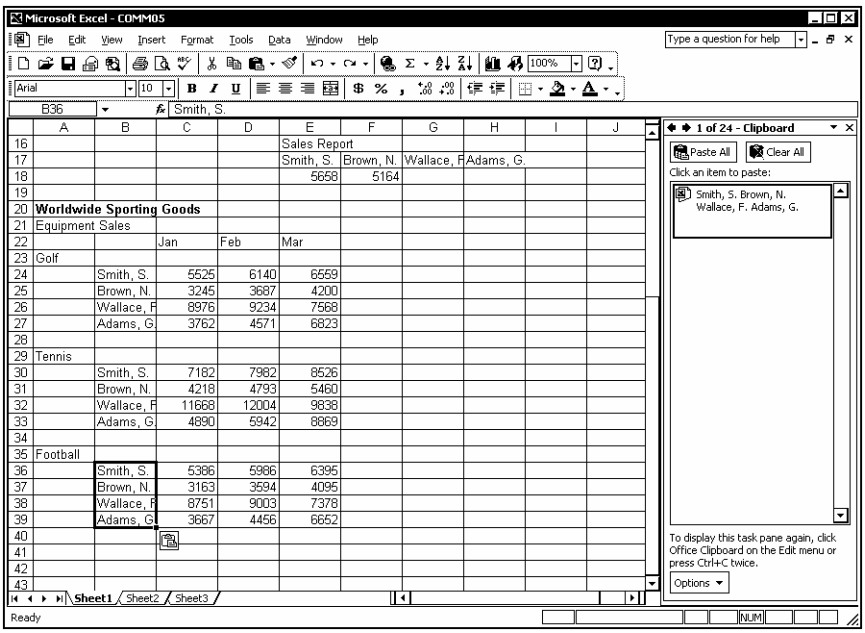
The Office Clipboard is accessed by opening the **Clipboard** task pane. When you first open the **Clipboard** task pane, it displays the last item cut or copied to the Windows Clipboard. As you continue to cut or copy items, they are collected on the **Clipboard** task pane and remain available to all Office XP products.

For each of the cut or copied items, the **Clipboard** task pane displays an icon and a portion of the text. You can click an item to paste it at the insertion point, or you can use the **Paste All** button to paste all the items at once. Right-clicking an item displays a shortcut menu containing options to paste or delete the item.

After pasting text, the **Paste Options** button appears in the worksheet, allowing you to control the formatting of the pasted item.

Once you have finished a particular copying sequence, you can clear the Office Clipboard of all items by clicking the **Clear All** button in the **Clipboard** task pane. In addition, the Office Clipboard clears automatically when you close all Office XP programs.

You can continue pasting text or numbers to different locations by clicking the item in the **Clipboard** task pane. Formulas, however, are not copied to the Office Clipboard; only the result of the formula is copied. Therefore, you can use the **Clipboard** task pane only to paste the resulting value into the destination cell, not the formula itself.



Using the Clipboard task pane

If the task pane is open, you can display the **Clipboard** task pane by selecting the **Clipboard** command from the **Other Task Panes** list on the task pane title bar.

You can also open the **Clipboard** task pane by pressing **[Ctrl+C]** twice, since the **Clipboard** task pane opens automatically as soon as a second item is cut or copied.

The **Clipboard** task pane stores up to 24 items. If you cut or copy more than 24 items, the oldest item on the Clipboard is removed. Undo cannot restore items removed from the Clipboard.

Procedures

1. Select the **Edit** menu.
2. Select the **Office Clipboard** command.
3. To clear all items from the Office Clipboard, click the **Clear All** button in the **Clipboard** task pane.
4. Cut or copy the item you want to paste.

5. Select the cell into which you want to paste the item.
6. Point to the item you want to paste in the **Clipboard** task pane.
7. Click the item to paste it into the current cell.
8. To paste all the items in the **Clipboard** task pane, click the **Paste All** button.
9. To remove an item from the Clipboard, right-click it in the **Clipboard** task pane.
10. Select the **Delete** command.

LESSON 4 -
WORKING WITH RANGES

In this lesson, you will learn how to:

- Work with ranges
- Select ranges with the keyboard
- Select ranges with the mouse
- Select non-adjacent ranges
- Enter values into a range
- Use the Auto Fill feature

WORKING WITH RANGES

Discussion

Many Excel commands are executed after selecting one or more cells. The command then effects all the selected cells. A group of selected cells is called a range. A range can contain adjacent or non-adjacent cells. A non-adjacent range consists of two or more separate blocks of cells that can be adjoining (contiguous), non-contiguous, or overlapping.

Ranges are identified by the addresses of the cells in the upper left and lower right corners of the selected block of cells, separated by a colon. For example, the range A4:C10 has cell A4 in the upper left corner and cell C10 in the lower right corner. To identify non-adjacent ranges, you must separate the range addresses with a comma. For example, A4:A10,C4:C10 refers to the range A4:A10 as well as the range C4:C10.

Selecting a range before executing a command is especially useful if you are using a toolbar or keyboard shortcut to perform an action. If a dialog box opens when you execute a menu command, however, you can specify the desired range in the dialog box. In this case, you do not have to select a range before you execute the command.

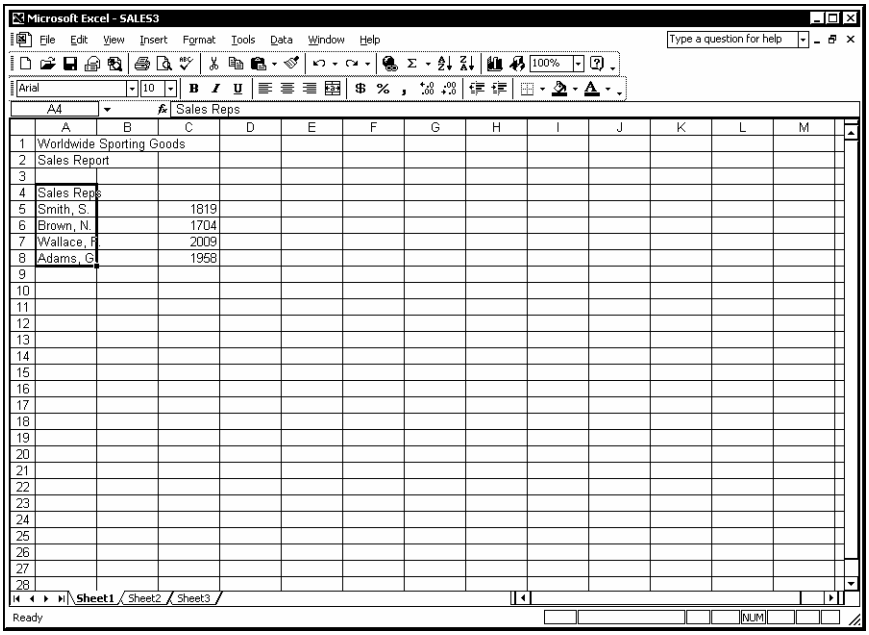
A selected range has a heavy black border around it, and all the cells within the range, except for the active cell, are shaded.

A range remains selected until another cell or range is selected.

SELECTING RANGES WITH THE KEYBOARD

Discussion

You can select ranges with the keyboard. Keyboard selection techniques are useful when you are working with small ranges. A range can be deselected by pressing any arrow key or by clicking any cell in the worksheet.



A selected range

> You can select a large range of cells quickly by pressing the **[Shift+Page Up]** or **[Shift+Page Down]** key combination.

Procedures

1. Move the active cell to the first cell in the range.
2. Hold **[Shift]** and press the desired arrow key as necessary to extend the selection.

SELECTING RANGES WITH THE MOUSE

Discussion

You can use the mouse to select a range. This method is especially effective when you are selecting large ranges in which you must scroll the display in order to see the last cell in the range. A range can be deselected by pressing any arrow key or by clicking any cell in the worksheet.

> You can select a large range quickly by clicking the upper left cell in the range, pressing the **[Shift]** key, and clicking the lower right cell in the range. All cells between the two corner cells are selected.

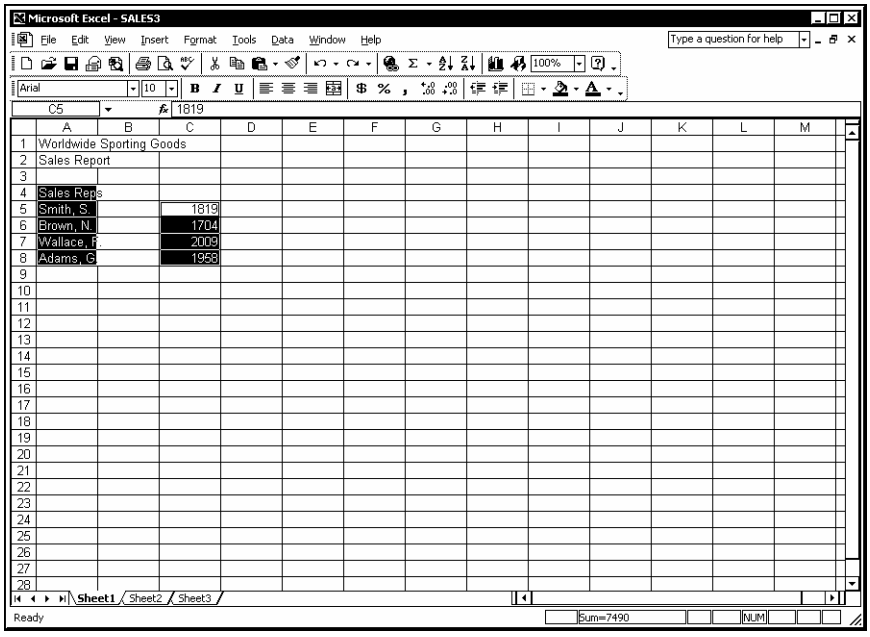
Procedures

1. Drag from the first cell in the range to the last.

SELECTING NON-ADJACENT RANGES

Discussion

You use the mouse in conjunction with the **[Ctrl]** key to add non-adjacent cells to a selected range. This method is useful when you want to execute a command that affects ranges in different sections of a worksheet. You may want to apply the same format to the titles in row 1 and the summary totals in row 10. By selecting the two non-adjacent ranges, you can apply the same format to both of the rows at once.



Selected non-adjacent ranges

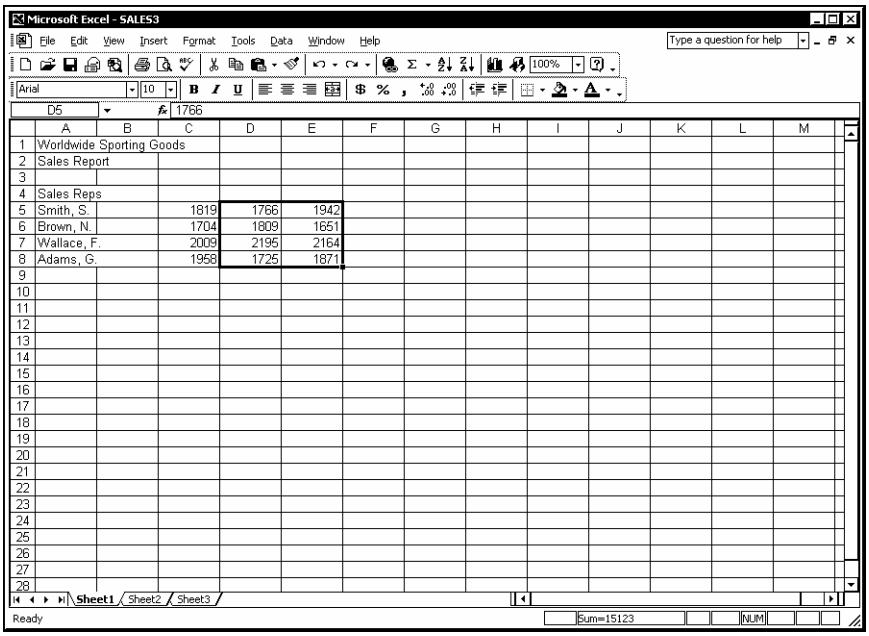
Procedures

1. Drag from the first cell in the range to the last adjacent cell.
2. Hold **[Ctrl]** and drag to select the non-adjacent range.

ENTERING VALUES INTO A RANGE

Discussion

You can quickly enter data into a selected range using the shortcut method. As you type each entry into the range and press the **[Enter]** key, the active cell automatically moves vertically to the next cell in the range, even if the range spans several columns. When the active cell reaches the last selected cell in the current column, it automatically moves to the first selected cell in the next column. In a non-adjacent range, when the active cell reaches the last cell at the bottom right corner of the first block of cells, it advances to the first cell at the top left corner of the next non-adjacent block of cells.



Entering values into a range

The active cell in a selected range appears without shading. Any data you enter appears in the active cell.

You can use another data entry shortcut to enter data horizontally across a row, without selecting the cells in the range. Type the data and use the **[Tab]** key to move horizontally to the next cell in the same row. After entering data in the last cell in the row, press the **[Enter]** key and the active cell automatically moves to the first column in the next row.

Procedures

1. Select the range into which you want to enter data.
2. Type the data into the first cell of the range.
3. Press **[Enter]**.
4. Continue entering data as desired.

USING THE AUTO FILL FEATURE

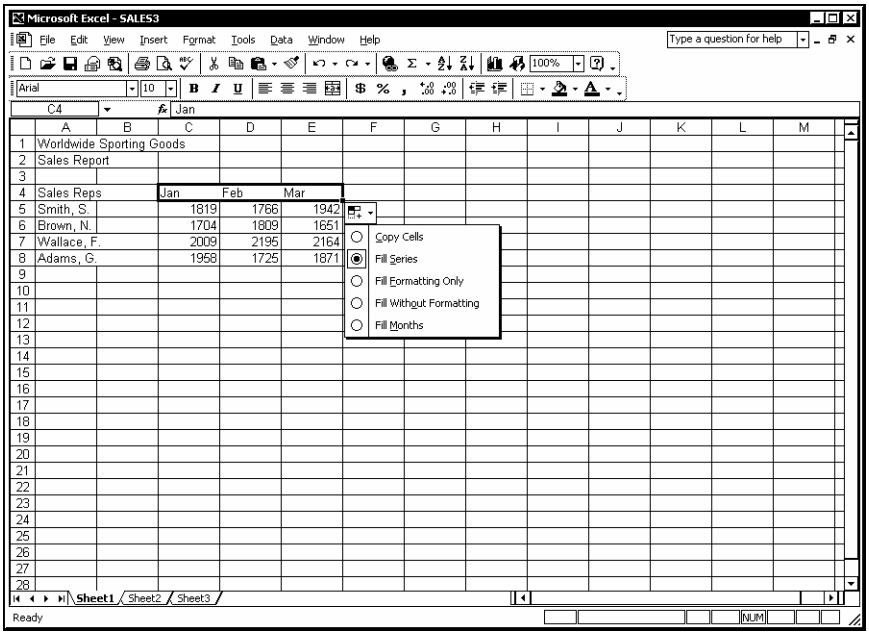
Discussion

You can use the **Auto Fill** feature in Excel to create a standard series of labels on a worksheet. Examples of standard series include months of the year, days of the week, and quarters of the year.

When you select a cell or range, a small, black box called the fill handle displays in the lower right corner of the cell or range. When the mouse pointer is positioned on the fill handle, it changes into a solid, black plus sign (+). If the cell contains a label that Excel recognizes as the first item in a standard series, a ScreenTip appears displaying the next item in the series as you drag the fill handle.

When you release the mouse button, Excel fills the range based on the contents of the first cell in the range, and the **Auto Fill Options** button appears in the lower right corner of the last cell. Clicking the **Auto Fill Options** button displays a list of available Auto Fill options.

Auto Fill options include: **Copy Cells**, which copies the first cell in the selected range instead of filling it; **Fill Formatting Only**, which copies the formatting only from the first cell without the contents; and **Fill Without Formatting**, which excludes the formatting of the first cell when filling the range. Other options may appear depending upon the text in the first cell.



Using Auto Fill options

If Excel does not recognize the label in the first cell as the beginning of a standard series, the cell contents are copied into the range instead.

The **Auto Fill Options** button automatically closes when you perform another action, such as entering data into another cell or saving the workbook.

Procedures

1. Select the cell containing the starting label in the series.
2. Point to the fill handle at the bottom right corner of the active cell.
3. Drag the fill handle to select the range you want to fill.
4. Click the **Auto Fill Options** button .
5. Select the desired Auto Fill option.

LESSON 5 -
USING MULTIPLE WORKBOOKS

In this lesson, you will learn how to:

- Open multiple workbook windows
- Cascade open workbook windows
- Activate cascaded workbook windows
- Tile open workbook windows
- Activate tiled workbook windows
- Copy data between workbooks
- Save a workspace
- Close all open workbooks
- Open a workspace
- Link workbooks
- Open linked workbooks

OPENING MULTIPLE WORKBOOK WINDOWS

Discussion

You can open more than one workbook at a time. This option is useful for comparing data or moving and copying information between workbooks. For example, you could open files from several regional sales representatives and then consolidate and compare the data in the workbooks.

When you open multiple workbooks, each workbook appears in its own window. You can arrange the windows in the workspace so that you can view the data in each, if desired. The name of each open workbook appears as a button on the Windows taskbar.

No matter how many workbooks are open, only one can be active at a time. The title bar of the active workbook is highlighted. Any command you execute or data you enter affects only the active workbook.

> Files listed consecutively can be selected by clicking the first file in the series, holding the **[Shift]** key, and clicking the last file in the series.

Procedures

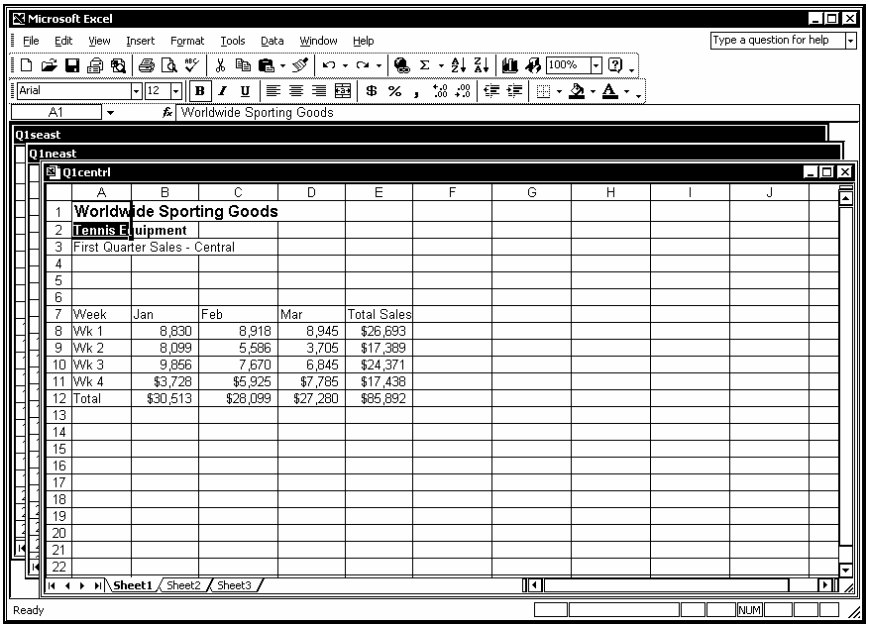
1. Click the **Open** button on the **Standard** toolbar.
2. Select the **Look in** list.
3. Select the drive where the files you want to open are stored.
4. Open the folder where the files you want to open are stored.
5. Select the first file you want to open.
6. Hold **[Ctrl]** and select each additional file you want to open.
7. Select **Open**.

CASCADING OPEN WORKBOOK WINDOWS

Discussion

Excel provides several different methods of arranging multiple workbook windows in the workspace. One method is to cascade the windows. Cascaded windows are stacked, with only the title bar of each window visible. The active window appears at the front of the stack.

Cascading windows allows you to move easily from one to another and still display a large portion of the active window. For example, you can cascade workbooks containing sales data from several regional representatives so that you can move easily between the workbooks when comparing and contrasting data.



Cascaded open workbook windows

Procedures

1. Open multiple workbooks.
2. Select the **Window** menu.
3. Select the **Arrange** command.
4. Select the **Cascade** option.
5. Select **OK**.

ACTIVATING CASCADED WORKBOOK WINDOWS

Discussion

In Excel, only one window can be active at a time. You can click in any portion of a window to activate it. At times, however, the window you want to activate may not be visible.

Excel maintains a list of all open workbooks at the bottom of the **Window** menu. You can activate any workbook window by selecting its name from this list. For example, if you have multiple workbooks open, you can activate the workbook containing the data with which you want to work.

> You can also activate any workbook window by clicking its associated button on the Windows taskbar.

> You can disable the option that displays all open workbooks on the taskbar by deselecting the **Windows in Taskbar** option on the **View** page in the Options dialog box. To open the Options dialog box, select the **Tools** menu and the **Options** command.

Procedures

1. Open multiple workbook windows.
2. Select the **Window** menu.
3. Select the workbook you want to view.

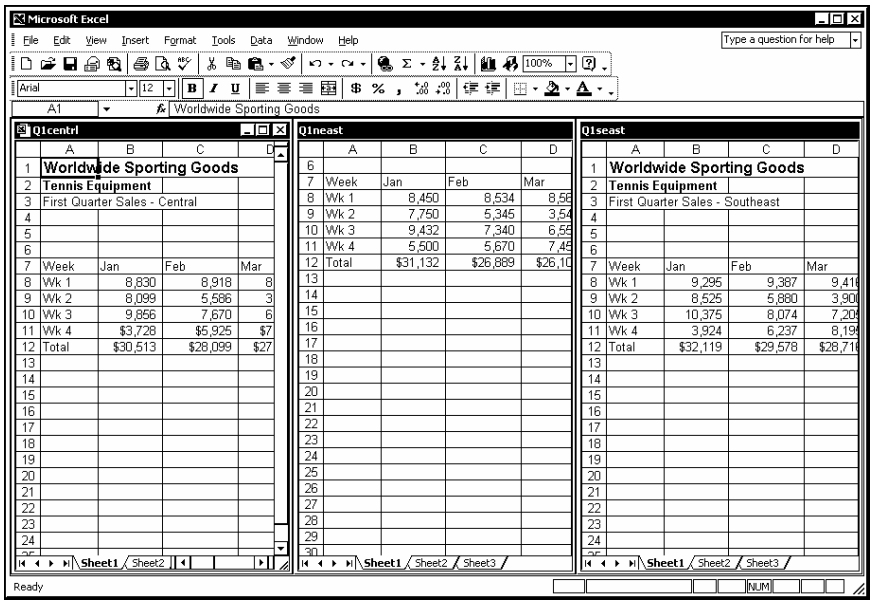
TILING OPEN WORKBOOK WINDOWS

Discussion

Tiling workbook windows arranges open windows so that they are all visible in the workspace. In order to accomplish this, the windows must be resized to fit in the workspace. For example, you can tile all the open workbooks so that you can view at

least some portion of each workbook. When windows are tiled, you can click in any window to activate it.

Excel provides three tiling options. The **Tiled** option arranges the windows in a grid in the workspace and places the active window in the upper left corner. The **Horizontal** option places the windows top-to-bottom in the workspace. The **Vertical** option places the windows side-by-side in the workspace.



Workbook windows tiled vertically

> To untile windows, double-click the title bar of the window you want to activate or click the **Maximize** button in its title bar.

Procedures

1. Open multiple workbook windows.
2. Select the **Window** menu.
3. Select the **Arrange** command.
4. Under **Arrange**, select the desired option.
5. Select **OK**.

ACTIVATING TILED WORKBOOK WINDOWS

Discussion

When windows are tiled, you can see at least a portion of each open workbook; you can click in any window to activate it. For example, you may want to activate a single workbook out of many open workbooks containing data from regional sales representatives so that you can work on the data it contains.

> To untile windows, double-click the title bar of the window you want to activate or click the **Maximize** button in its title bar.

Procedures

1. Open multiple workbook windows.
2. Tile the open workbook windows.
3. Click the workbook window you want to activate.

COPYING DATA BETWEEN WORKBOOKS

Discussion

You can copy data between open workbooks in the same way you copy data between worksheets in a single workbook. For example, you can copy data from several workbooks containing regional sales data to a single consolidation workbook. By default, the cell format is copied as well as the data.

> You can also drag to copy data to another workbook.

> Information copied in another Office application (such as Microsoft Word or PowerPoint) can be pasted into Excel, and information copied in Excel can be pasted into other Office applications.

Procedures

1. Open multiple workbook windows.
2. Click in the workbook window containing the data you want to copy.
3. Select the data you want to copy.
4. Click the **Copy** button on the **Standard** toolbar.
5. Activate the workbook in which you want to paste the data.
6. Select the paste range.
7. Click the **Paste** button on the **Standard** toolbar.

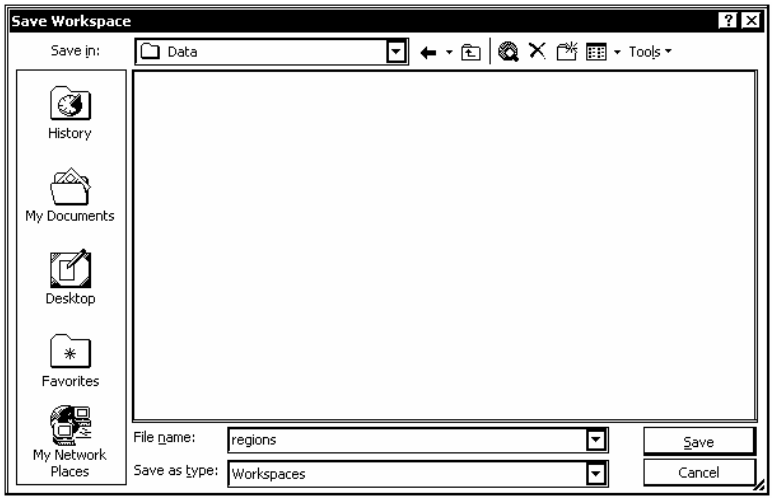
SAVING A WORKSPACE

Discussion

You can save multiple, open workbooks as a workspace. A workspace saves information about which workbooks are open, as well as their size and the positions they occupy in the workspace.

Workspaces are useful when you have several, related workbooks. If you save related workbooks as a workspace, you can open the workspace instead of having to open each workbook individually, and the workbooks will open in the configuration saved with the workspace. For example, if you usually open separate workbooks provided by several regional sales representatives and work with them simultaneously, you can arrange the workbooks in the desired screen configuration and save them as a workspace.

When a workspace is open, you can make changes as needed to any of the workbooks and then save the changes in the usual manner. If you make changes to the appearance of the workspace, however, you must use the **Save Workspace** command on the **File** menu to save the workspace; you will not be prompted to save it. For instance, if you decide to tile the workbooks in a workspace horizontally instead of vertically, you must manually save the workspace in order to save its new configuration.



Saving a workspace

Procedures

1. Open the workbooks you want to save as a workspace, arrange them as desired, and save any changes made to them.
2. Select the **File** menu.
3. Select the **Save Workspace** command.
4. Type the desired workspace name in the **File name** box.
5. Select the **Save in** list.
6. Select the drive where you want to save the workspace.
7. Open the folder where you want to save the workspace.
8. Select **Save**.

CLOSING ALL OPEN WORKBOOKS

Discussion

You can use the **Close All** command to close all open workbooks at one time. If you have made changes to any workbook since it was last saved, Excel will prompt you to save or reject the changes.

Closing all workbooks at once can save time when you have multiple workbooks open.

Procedures

1. Open multiple workbook windows.
2. Hold **[Shift]** and select the **File** menu.
3. Select the **Close All** command.

OPENING A WORKSPACE

Discussion

When you open a workspace, all the workbooks stored in it open in the defined workspace configuration.

A workspace stores information regarding the location of the workbooks, as well as their size and position in the workspace. Consequently, a workspace can open the workbooks even if they are stored in different folders. If you move a workbook saved in a workspace, however, Excel will not be able to locate and open the workbook with the workspace. In this case, the workspace opens only the workbooks it can find.

Procedures

1. Click the **Open** button on the **Standard** toolbar.
2. Select the **Look in** list.
3. Select the drive where the workspace file is stored.
4. Open the folder where the workspace file is stored.
5. Select the desired workspace file.
6. Select **Open**.

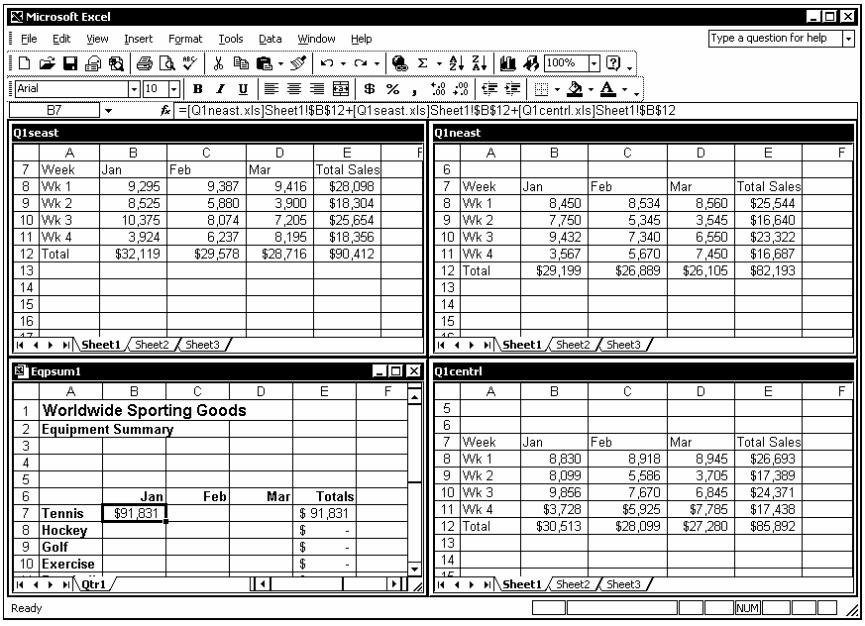
LINKING WORKBOOKS

Discussion

Linking workbooks allows one workbook to retrieve data saved in another. You can create a linked formula that calculates using data in other workbooks. For instance, if you have the first quarter sales of three regional offices in three separate workbooks, you can create formulas in a fourth summary workbook to calculate and display the summarized data from the three regional workbooks.

The workbooks that contain the original data are called the source files. The easiest way to create a linked formula is to open all the workbooks that contain the data you need, as well as the workbook containing the linked formula. Then, you can select the cells you want to calculate as you create the formula. When you create a formula linked to other workbooks, each reference includes the workbook name in square brackets, the worksheet name, an exclamation point, and then the cell reference.

When changes are made to linked data, Excel automatically updates the links with the new information; linked files do not need to be open for the links to be updated. In addition, Excel automatically updates links when the workbook is opened.



A linked formula

> Linked references are created as absolute references. If you want to copy the formula to other cells, you can edit the formula to remove the absolute references, if desired.

> You can also use the **Paste Link** button in the Paste Special dialog box to copy a link to another workbook.

> You can also create a linked formula by typing the formula. If the source workbook is not open, you must also include its path; the path, workbook name, and sheet must be enclosed in a set of single quotation marks.

Procedures

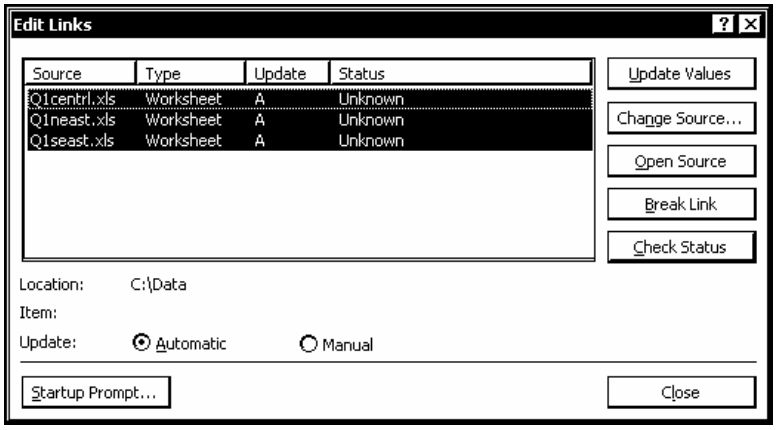
1. Open all workbooks you want to link, and activate the workbook in which you want to create a linked formula.
2. Select the cell in which you want to create the linked formula.
3. Type an equal sign (=) to start the formula.
4. Activate the window containing the first cell reference.
5. Select the data you want to link.
6. Complete the formula.
7. Press **[Enter]**.

OPENING LINKED WORKBOOKS

Discussion

Excel allows you to link data and consolidate information stored in other workbooks. The workbooks containing the data are called the source files. When you open a workbook with a linked formula, you can use the Edit Links dialog box to open the source file links.

In addition, the Edit Links dialog box can be used to update links, if necessary; designate a different source file; or change the location of a source file.



The Edit Links dialog box

The **Change Source** button can be used to replace one source file with another or to select the new location of a source file that has been moved.

You can use the **[Shift]** and **[Ctrl]** keys in the Links dialog box to select multiple source files.

Procedures

1. Open a workbook with a linked formula.
2. Select the **Edit** menu.
3. Select the **Links** command.
4. Select the source files you want to open.
5. Select the **Open Source** command.

LESSON 6 -
USING SCENARIOS AND GOAL SEEKING

In this lesson, you will learn how to:

- Use the Scenario Manager
- Create a scenario
- Display a scenario
- Edit a scenario
- Create a scenario summary report
- Use Goal Seek

USING THE SCENARIO MANAGER

Discussion

The ability to perform a what-if analysis is one of the most powerful functions Excel provides. A what-if analysis allows you to substitute differing values and data in a worksheet so that you can compare various, possible outcomes. The Scenario Manager allows you to create various scenarios to perform what-if analyses.

With the Scenario Manager, you can create a variety of scenarios; in each scenario, the worksheet data is modified to produce a specific set of results. Different scenarios yield different results. For example, you can compare best case scenarios to worst case scenarios.

The first step in creating a scenario is to select the changing cells; changing cells store the data you want to replace in creating a what-if analysis. Changing cells usually play a key part in the formula. You can define up to 32 changing cells per scenario. You can identify changing cells by their address or by a range name. Each changing cell in a scenario is then assigned a projected what-if value.

Once you have created a scenario, you can view it in the worksheet. Each scenario should be saved with a unique, descriptive name.

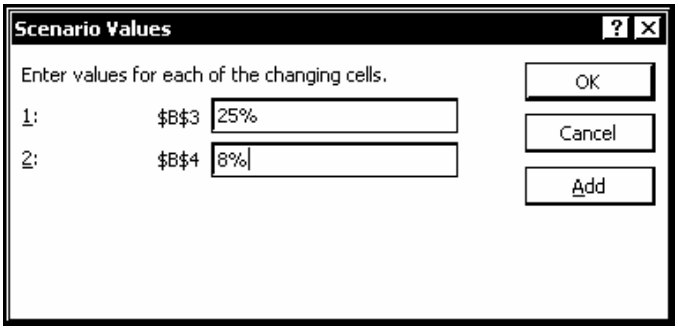
Once you have created a group of scenarios in a worksheet, you can then create a report to compare them.

CREATING A SCENARIO

Discussion

Each scenario displays the result of inputting a different set of values into the changing cells of a worksheet. You should give each scenario you create a unique, descriptive name.

You must also indicate the changing cells, which can be adjacent or non-adjacent. If you select the changing cells before you open the Scenario Manager, their addresses or names will appear in the **Changing cells** box by default. If preferred, you can select the changing cells from the Add Scenario dialog box as well.



Entering changing cell values

> You can create a scenario for the original set of worksheet values, so that you can easily switch back to that display, as well as use the original values in scenario reports.

Procedures

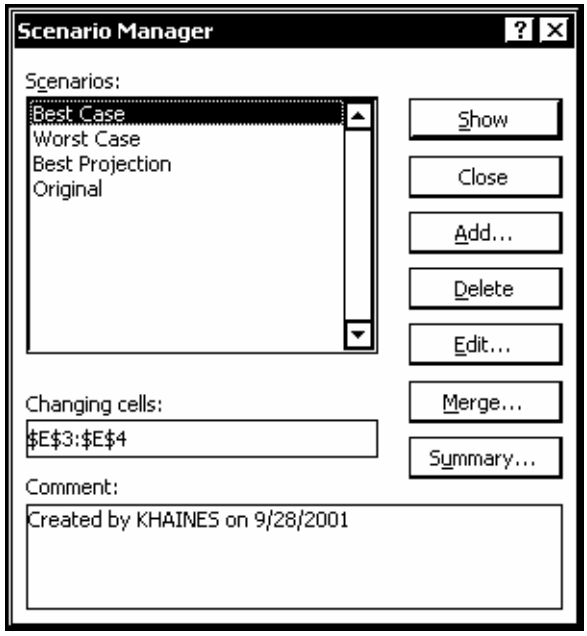
1. Select the desired changing cells.
2. Select the **Tools** menu.
3. Select the **Scenarios** command.
4. Select **Add**.
5. Type the desired scenario name.
6. Select **OK**.
7. Type the desired value for the first changing cell.
8. Type the desired value for the each remaining changing cell.
9. Select **OK**.
10. Select **Close**.

DISPLAYING A SCENARIO

Discussion

After you have created one or more scenarios, you can view each of them. You can view more than one scenario without closing the Scenario Manager dialog box, as

well as move the Scenario Manager dialog box on the screen as necessary to view the data.



The Scenario Manager dialog box

Procedures

1. Select the **Tools** menu.
2. Select the **Scenarios** command.
3. Select the scenario you want to view in the **Scenarios** list box.
4. Select **Show**.

EDITING A SCENARIO

Discussion

You can edit any scenario you have created. You can change the values in the changing cells, or you can indicate different changing cells altogether.

Procedures

1. Select the **Tools** menu.
2. Select the **Scenarios** command.
3. Select the name of the scenario you want to edit in the **Scenarios** list box.
4. Select **Edit**.
5. Select **OK**.
6. Select the text in the box of the changing cells you want to edit.
7. Type the desired value.
8. Select **OK**.
9. Select **Show** to view the edited scenario.
10. Select **Close**.

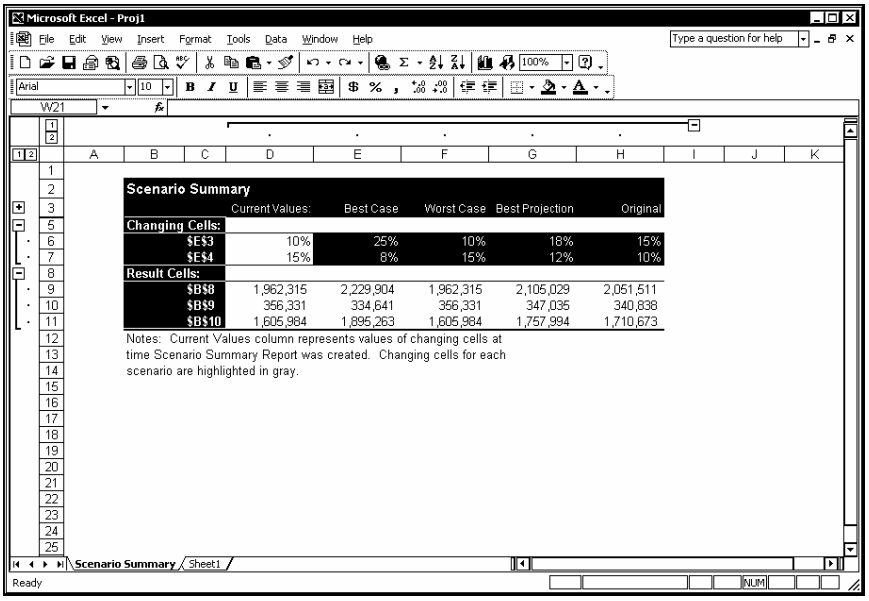
CREATING A SCENARIO SUMMARY REPORT

Discussion

You can create a scenario summary report. A scenario summary report lists all the scenarios you have created in a side-by-side format so that you can compare them.

When you create a scenario summary report, the Scenario Manager automatically inserts a **Scenario Summary** sheet in the workbook and places the report on it. This sheet allows you to easily view and print the scenario summary report.

A scenario summary report appears in an outline format.



A scenario summary report

Procedures

1. Select the **Tools** menu.
2. Select the **Scenarios** command.
3. Select **Summary**.
4. Under **Report type**, select the desired option.
5. Click the **Collapse Dialog** button in the **Result cells** box.
6. Select the cells you want to display in the scenario summary report.
7. Click the **Expand Dialog** button.
8. Select **OK**.

USING GOAL SEEK

Discussion

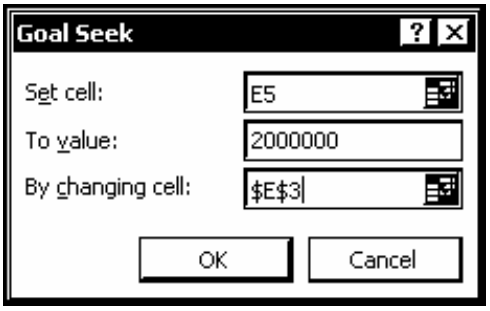
Often a situation arises in which you know the value you want a formula to return, but not the values needed to arrive at that result. For example, you may want to borrow money to purchase a $3000 computer system; you can afford to borrow the money at

$150 per month for two years. You can use Goal Seek to determine the interest rate needed to meet your requirements.

When you use Goal Seek, Excel performs the time-consuming task of trial-and-error experimentation by changing the variable value until it arrives at the desired result.

In order to use Goal Seek, you must specify the following parameters:

Parameters	Description
Set cell	The cell containing the formula
To value	The value you want the formula to return
By changing cell	The cell containing the value to be changed



Using Goal Seek

Procedures

1. Select the **Tools** menu.
2. Select the **Goal Seek** command.
3. Select the cell containing the formula.
4. Select the **To value** box.
5. Type the value you want the formula to return.
6. Select the **By changing cell** box.
7. Select the cell containing the changing cell.
8. Select **OK**.
9. Select **OK**.

LESSON 7 -
USING DATA TABLES

In this lesson, you will learn how to:

- Use data tables
- Place formulas in data tables
- Create a one-variable table
- Create a two-variable table

USING DATA TABLES

Discussion

You can use a data table to vary one or two values in a formula and display all possible results in a table format. For example, you can use a data table to display all possible projected sales based on total sales and various growth percentages.

To create a data table, you must first indicate the input cells (the cells containing the variable values in the formula). In the previous sales growth example, the input cells are the cells containing the total sales and those containing the percentage growth figures. The input values are then substituted in the formula and the result of each calculation is placed into an output cell in the data table.

PLACING FORMULAS IN DATA TABLES

Discussion

When you create a data table, the placement of the formula used in the calculation varies, depending on the type of data table you are creating.

If a one-variable data table is arranged in columns, the formula used in the calculation is placed in the cell at the top of the output column. In the following diagram, column B is the output column and the formula must be placed in cell B1.

	A	B
1		***FORMULA***
2	25.67	
3	12.50	
4	35.42	
5	97.16	

A one-variable data table arranged in columns

If a one-variable data table is arranged in rows, the formula is placed in the cell to the left of the output row. In the following diagram, row 2 is the output row and the formula must be placed in cell A2.

	A	B	C	D	E
1		25.67	12.50	35.42	97.16
2	***FORMULA***				

A one-variable data table arranged in rows

In a two-variable data table, both rows and column are used for input data, and the formula used in the calculations must be placed above the column input cells and to the left of the row input cells. In the following diagram, column A contains one set of variable input values and row 1 contains the other set of input values. Therefore, the formula must be placed in cell A1.

	A	B	C	D	E
1	***FORMULA***	25.67	12.50	35.42	97.16
2	5				
3	10				
4	15				
5	20				

A two-variable data table

CREATING A ONE-VARIABLE TABLE

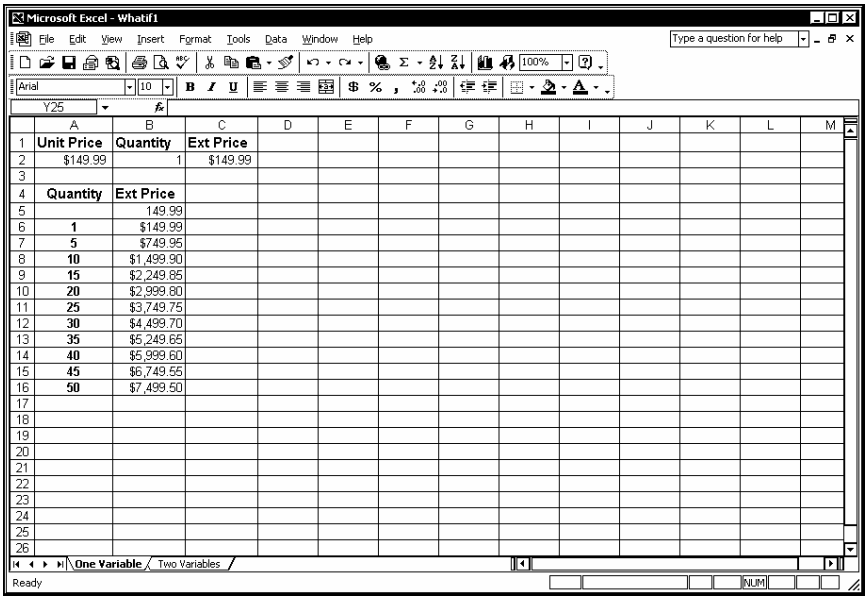
Discussion

When you create a one-variable data table, you can enter the input values either across a row or down a column.

If the one-variable data table consists of two columns, the first column is the input column and contains all possible values for the variable. The second column is the output column. In addition, the cell directly above the output column must contain the formula used in calculating the data table.

If the one-variable data table consists of two rows, the top row is the input row, the second row is the output row, and the cell to the left of the output row must contain the formula.

The input cell is critical when creating a data table. It is the cell containing the variable value and must be included in the formula. As the variable values are entered into the data table, the result of each calculation appears in the corresponding cell in the output column.



	A	B	C
1	**Unit Price**	**Quantity**	**Ext Price**
2	$149.99	1	$149.99
3			
4	**Quantity**	**Ext Price**	
5		149.99	
6	**1**	$149.99	
7	**5**	$749.95	
8	**10**	$1,499.90	
9	**15**	$2,249.85	
10	**20**	$2,999.80	
11	**25**	$3,749.75	
12	**30**	$4,499.70	
13	**35**	$5,249.65	
14	**40**	$5,999.60	
15	**45**	$6,749.55	
16	**50**	$7,499.50	

A one-variable data table

Procedures

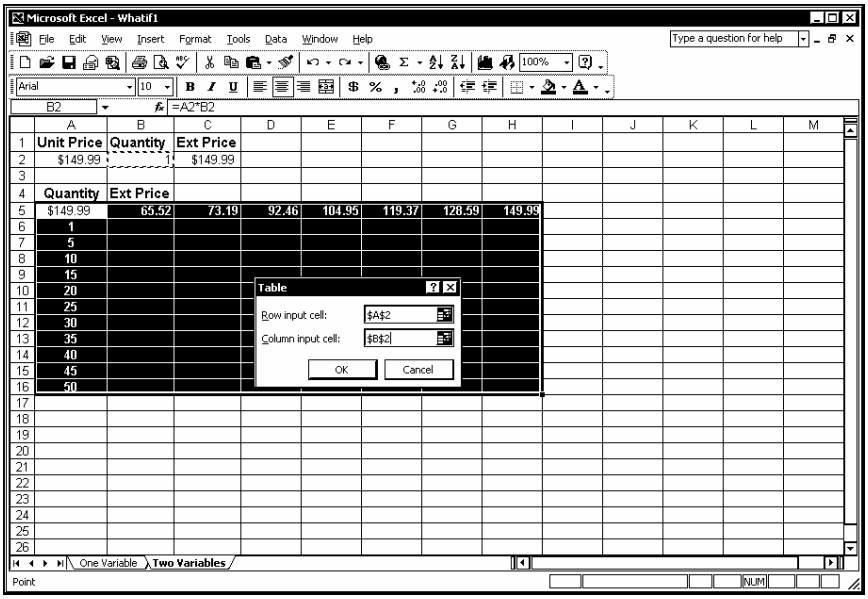
1. Select the cell immediately above the output column.
2. Type the formula you want to evaluate.
3. Press **[Enter]**.
4. Select the entire range containing the formula, the input column, and the output column.
5. Select the **Data** menu.
6. Select the **Table** command.
7. Select the **Column input cell** box.
8. Select the input cell.
9. Select **OK**.

CREATING A TWO-VARIABLE TABLE

Discussion

You can create a two-variable data table that evaluates two different values in a formula. A two-variable data table uses both an input column and an input row. The input row is the first row and the input column is the first column in the data table. You enter the formula you want to calculate in the cell above the input column and to the left of the input row.

A two-variable data table references two input cells: one for column input data and one for row input data; both input cells must be included in the formula. The formula calculates each of the possible combinations of the row and column input cells and places the results in the corresponding, intersecting cell in the data table.



Creating a two-variable data table

Procedures

1. Select the cell above the column input values and to the left of the row input values.
2. Type the formula you want to evaluate.
3. Press **[Enter]**.
4. Select the entire data table.

5. Select the **Data** menu.
6. Select the **Table** command.
7. Select the row input cell.
8. Select the **Column input cell** box.
9. Select the column input cell.
10. Select **OK**.

LESSON 8 -
USING WORKSHEET PROTECTION

In this lesson, you will learn how to:

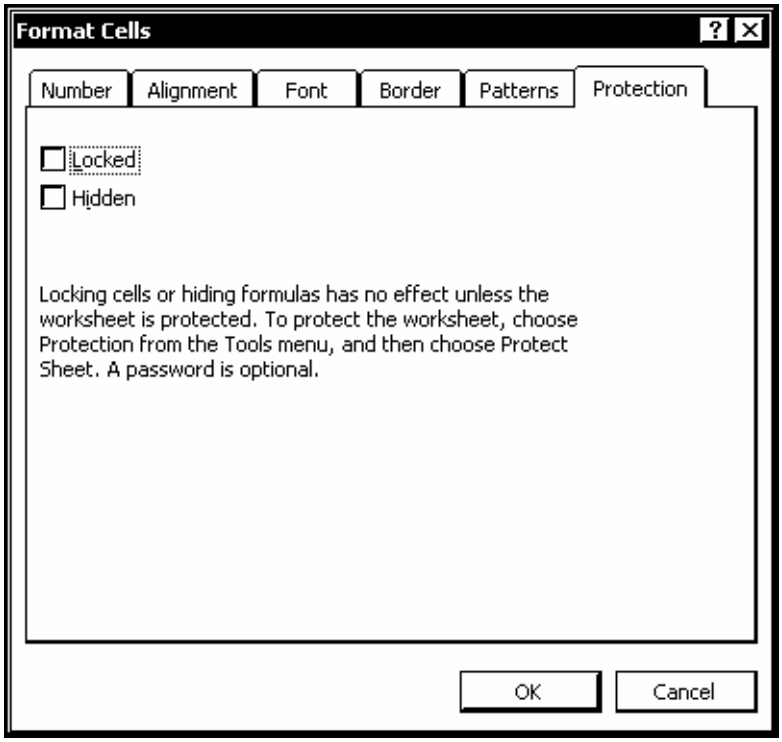
- Unlock cells in a worksheet
- Protect a worksheet
- Unprotect a worksheet
- Create allow-editing ranges
- Delete allow-editing ranges
- Protect workbook windows
- Unprotect workbook windows
- Assign a password
- Open a password-protected file
- Remove a password
- Set manual calculation
- Reset automatic calculation
- Use the Document Recovery pane

UNLOCKING CELLS IN A WORKSHEET

Discussion

You can control access to a worksheet by locking or unlocking individual cells in it. If worksheet protection is activated, you cannot change the contents of any locked cell. If you want to allow changes to some cells, however, you can unlock those cells before you activate worksheet protection.

As a rule, the cells you want to use for data entry are unlocked, and the cells that have formulas in them are locked so that the formulas cannot be changed. For example, you can lock all cells in a sales worksheet, except for those cells in which sales figures need to be entered. You can also lock cells containing text.



Unlocking cells

Although cells are locked by default, this option has no effect on a worksheet unless the worksheet is protected.

Procedures

1. Select the cells you want to unlock.
2. Select the **Format** menu.
3. Select the **Cells** command.
4. Select the **Protection** tab.
5. Deselect the **Locked** option.
6. Select **OK**.

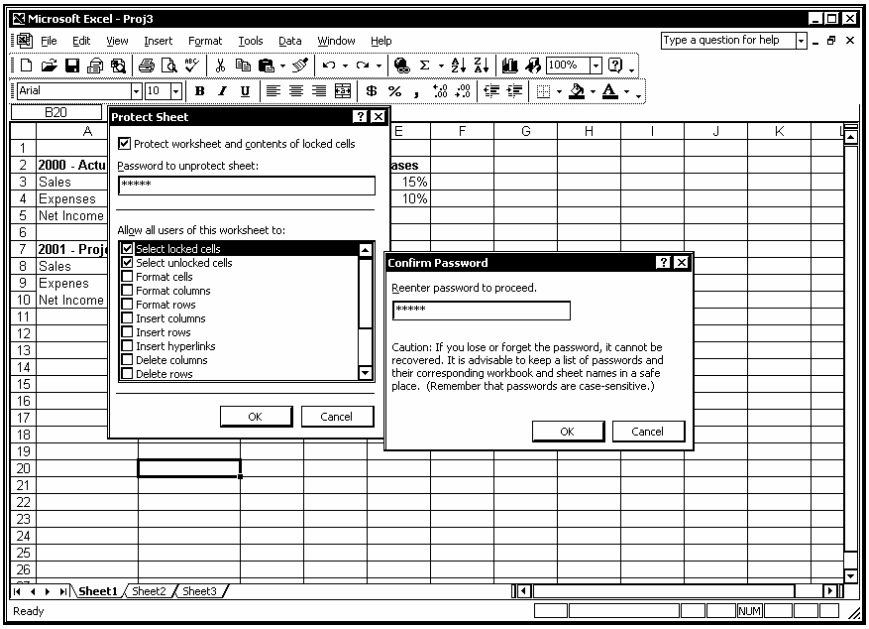
PROTECTING A WORKSHEET

Discussion

Once you have unlocked cells, you can prevent changes to the rest of the worksheet by protecting it. Protecting a worksheet prevents unauthorized or accidental changes to formulas. For example, you can unlock only cells E3 and E4, leaving the rest of the cells in the worksheet locked; if you then protect the worksheet, you will be able to enter data in cells E3 and E4, but you will not be able to access any other cells.

You can assign an optional password to a protected worksheet. Passwords are case-sensitive. A password is any combination of letters, numbers, symbols, and spaces, and can be up to 255 characters long. For example, **CLASS** is a different password than **class**.

You can select what features and functions of the worksheet you want to protect. For example, you can allow users to select locked or unlocked cells, or format, insert, or delete cells, columns, and rows.



Protecting a worksheet

Many commands and toolbar buttons are not available in a protected worksheet.

You can protect the worksheet structure from being deleted, hidden, or moved or the worksheet window from being hidden, moved, or resized by assigning a password to the workbook in the Protect Workbook dialog box. To open the Protect Workbook dialog box, select the **Tools** menu, point to the **Protection** command, and then select the **Protect Workbook** command.

If you forget the password for a protected worksheet, you cannot unprotect the worksheet.

Procedures

1. Select the **Tools** menu.
2. Point to the **Protection** command.
3. Select the **Protect Sheet** command.
4. Type a password, if desired.

5. Select **OK**.
6. Type the password again, if necessary.
7. Select **OK**.

UNPROTECTING A WORKSHEET

Discussion

You can unprotect a protected worksheet. If you used a password to protect the worksheet, however, you must know the password to unprotect it.

After you have unprotected the worksheet, you can make changes to any cell in it.

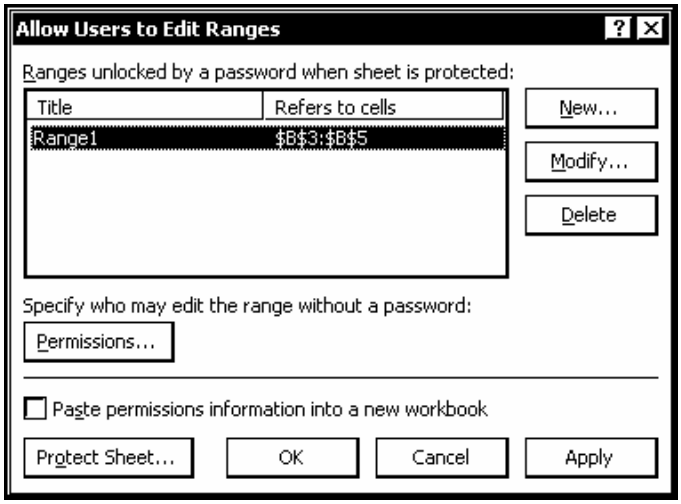
Procedures

1. Select the **Tools** menu.
2. Point to the **Protection** command.
3. Select the **Unprotect Sheet** command.
4. Type the required password, if necessary.
5. Select **OK**.

CREATING ALLOW-EDITING RANGES

Discussion

If you want only certain users to be able to access specified cells in a worksheet, you can identify those cells as an allow-editing range. You control access to this range by first locking the cells in it and then assigning a password to it. After activating worksheet protection, users are prompted for the assigned password when they select any cell in the allow-editing range. If the correct password is entered, the range is unlocked for editing; the allow-editing range is not locked again, however, until the workbook is closed.



The Allow Users to Edit Ranges dialog box

	Remember to unlock the cells you want all users to be able to edit before enabling worksheet protection.

	You can select the allow-editing range before you open the Allow Users to Edit Ranges dialog box; the range will then appear in the New Range dialog box when it opens.

Procedures

1. Select the **Tools** menu.
2. Point to the **Protection** command.
3. Select the **Allow Users to Edit Ranges** command.
4. Select **New**.
5. Click the **Collapse Dialog** button in the **Refers to cells** box.
6. Select the range in which you want to allow editing.
7. Click the **Expand Dialog** button.
8. Select the **Range password** box.
9. Type the desired password.
10. Select **OK**.
11. Type the password again.

12. Select **OK**.
13. Select **Protect Sheet**.
14. Type the desired password.
15. Select **OK**.
16. Type the password again.
17. Select **OK**.

DELETING ALLOW-EDITING RANGES

Discussion

When a worksheet no longer needs an allow-editing range, it can be removed from the worksheet. The worksheet must first be unprotected before you can remove the unlocked range.

Procedures

1. Select the **Tools** menu.
2. Point to the **Protection** command.
3. Select the **Unprotect Sheet** command.
4. Type the required password.

5 Select **OK**.

6. Select the **Tools** menu.
7. Point to the **Protection** command.
8. Select the **Allow Users to Edit Ranges** command.
9. Select the range you want to delete from the **Ranges unlocked by a password when sheet is protected** list box.
10. Select **Delete**.
11. Select **OK**.

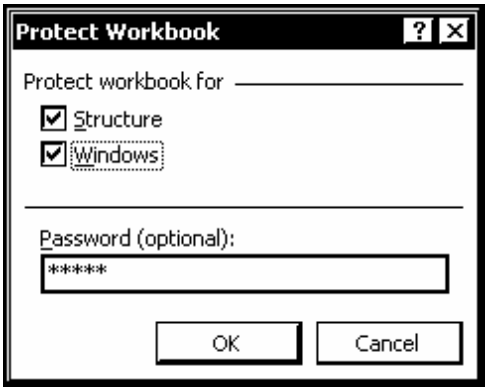
PROTECTING WORKBOOK WINDOWS

Discussion

You can protect workbook windows. When you protect a workbook window, the **Minimize**, **Maximize**, and **Close** buttons are removed; as a result, the window cannot be moved or resized. This option is useful if you have arranged the windows and want to prevent them from being rearranged.

In addition to protecting a window, you can prevent structural changes to a workbook. For example, if a workbook structure is protected, you cannot insert, delete, or move worksheets contained in it.

You can assign an optional password. Passwords are case-sensitive. For example, **CLASS** is a different password than **class**.



The Protect Workbook dialog box

> If you forget the password for a protected workbook, you cannot unprotect the workbook.

Procedures

1. Select the **Tools** menu.
2. Point to the **Protection** command.
3. Select the **Protect Workbook** command.
4. Type a password, if desired.
5. Under **Protect workbook for**, select the desired options.

6. Select **OK**.
7. Type the password again, if necessary.
8. Select **OK**.

UNPROTECTING WORKBOOK WINDOWS

Discussion

When you unprotect a workbook window, the **Maximize**, **Minimize**, and **Close** buttons are restored, and the window can be resized. You can also perform structural changes (such as inserting, deleting, or moving worksheets) in an unprotected workbook.

If a password has been used to protect a workbook, you must know the password to unprotect it.

> If you forget the password, you cannot unprotect the workbook.

Procedures

1. Select the **Tools** menu.
2. Point to the **Protection** command.
3. Select the **Unprotect Workbook** command.
4. Type the required password, if necessary.
5. Select **OK**.

ASSIGNING A PASSWORD

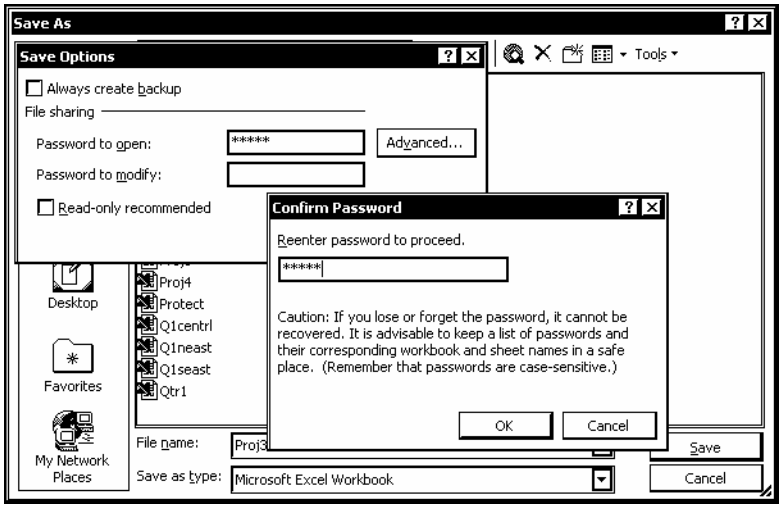
Discussion

Passwords are used to protect a file. You can assign one password to open a file, and a different password to modify a file. If you assign both types of passwords to a file,

only those users who know the open password can open the file, and only those users who know both the open and modify passwords can save changes to it.

Passwords are case-sensitive and can be any combination of letters, numbers, symbols, and spaces, up to 15 characters long. After a password has been assigned, you will be prompted for the password each time you open the document and/or each time you try to save it, depending on the type of password.

Passwords are often assigned to files that contain sensitive data, such as salaries or bonuses. They can also be used to secure files stored on a network.



Assigning a password

> You can also use the **Security** page in the Options dialog box to assign a password.

> If you forget an assigned password, you cannot open and/or save the file.

Procedures

1. Select the **File** menu.
2. Select the **Save As** command.
3. Select the **Tools** menu in the Save As dialog box.
4. Select the **General Options** command.

5. Type the desired password.
6. Select **OK**.
7. Type the password again.
8. Select **OK**.
9. Select **Save**.
10. Select **Yes**.

OPENING A PASSWORD-PROTECTED FILE

Discussion

Once a file is password-protected, you must know the password to open it. Whenever you try to open a password-protected file, the Password dialog box prompts you to enter the assigned password.

The Password dialog box

If you forget the assigned password, you cannot open the file.

Procedures

1. Click the **Open** button on the **Standard** toolbar.
2. Select the **Look in** list.
3. Select the drive where the file is stored.
4. Open the folder where the file is stored.
5. Select the file you want to open.

6. Select **Open**.
7. Type the required password.
8. Select **OK**.

REMOVING A PASSWORD

Discussion

If a password is no longer needed, you can remove it from a file. You can then open the file at any time without a password.

When you remove a password, you must save the file to replace the protected version.

You can also use the **Security** page in the Options dialog box to remove a password.

Procedures

1. Select the **File** menu.
2. Select the **Save As** command.
3. Select the **Tools** menu in the Save As dialog box.
4. Select the **General Options** command.
5. Press **[Delete]**.
6. Select **OK**.
7. Select **Save**.
8. Select **Yes**.

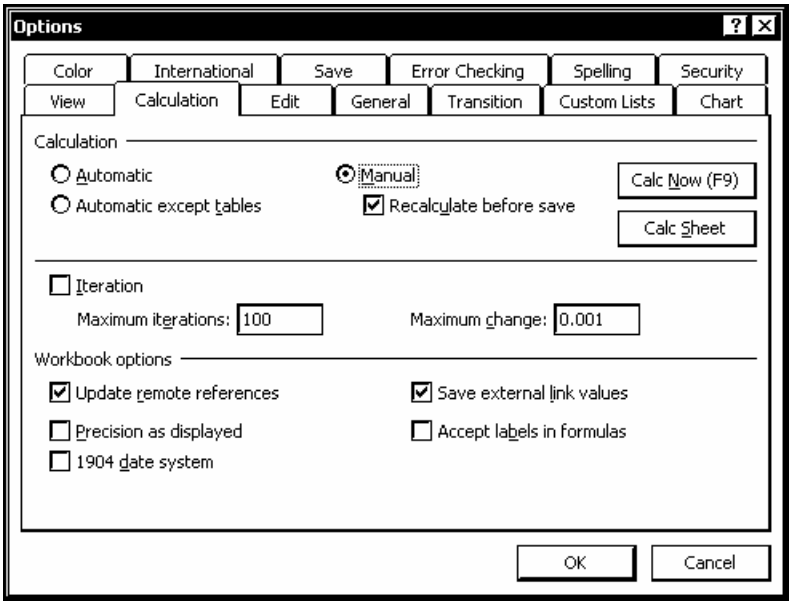
SETTING MANUAL CALCULATION

Discussion

When you change any number in a worksheet, all formulas that refer to that number are automatically recalculated. You can configure the worksheet to recalculate manually instead. Manual recalculation allows you to change numbers as needed and then recalculate the worksheet only when desired. This option can save time when you are working in large, complex worksheets.

When recalculation is set to manual, the **Calculate** indicator appears on the status bar when values have changed and formulas need to be recalculated. If the **Calculate** indicator appears on the status bar, the worksheet figures may not be accurate. For this reason, it is a good idea to always recalculate before you print the worksheet.

Calculation options are system settings rather than workbook settings. Consequently, once you have enabled manual calculation, all worksheets will have to be manually recalculated until you change the calculation back to automatic.



Setting manual calculation

Even if calculation is set to manual, worksheets will automatically recalculate each time you save them, if the **Recalculate before save** option is selected on the **Calculation** page in the Options dialog box.

You can recalculate all open workbooks by selecting the **Calc Now** button on the **Calculation** page in the Options dialog box or pressing the **[F9]** key. To recalculate only the current worksheet, select the **Calc Sheet** button on the **Calculation** page in the Options dialog box.

Procedures

1. Select the **Tools** menu.
2. Select the **Options** command.
3. Select the **Calculation** tab.
4. Under **Calculation**, select the **Manual** option.
5. Select **OK**.

RESETTING AUTOMATIC CALCULATION

Discussion

Calculation options are system settings rather than workbook settings. As a result, if you select manual recalculation for one workbook, you will have to manually recalculate all workbooks until you change the calculation back to automatic.

Procedures

1. Select the **Tools** menu.
2. Select the **Options** command.
3. Select the **Calculation** tab.
4. Under **Calculation**, select the **Automatic** option.
5. Select **OK**.

USING THE DOCUMENT RECOVERY PANE

Discussion

Office XP provides a file recovery feature that can recover data lost when an error prevents the normal saving and closing of a file (such as when your computer suddenly crashes or loses power). The next time you start Excel after a system halt, the **Document Recovery** pane appears on the left side of the application window, with a list of all workbooks that were open when the error occurred. For each workbook, the task pane shows the file name, as well as when you last saved the workbook. If the workbook is marked as recovered, it is probably a more recent version of the original workbook than the last saved version.

Right-clicking a workbook in the **Document Recovery** pane displays a list of available recovery options. The **Open** option opens the recovered file. The **Save As** option allows you to save the recovered file with a new name; if you save the file with the same name, the original file is overwritten. If the workbook is marked as recovered, you can select the **Delete** option to delete the recovered file or the **Show Repairs** option to view the repairs that were made to the file.

> You can also open a file by clicking it in the **Document Recovery** pane.

Procedures

1. Restart your computer, if necessary.
2. Open Excel.
3. Right-click the workbook you want to recover in the **Document Recovery** pane.
4. Select the desired recovery option.

LESSON 9 -
CONSOLIDATING WORKSHEETS

In this lesson, you will learn how to:

- Consolidate worksheets
- Consolidate by category
- Consolidate by position

CONSOLIDATING WORKSHEETS

Discussion

You can consolidate data from several worksheets into a single worksheet or from many different workbooks into a single workbook. For example, if you record sales data on several different worksheets, you can quickly consolidate the sum of all the data into a single worksheet.

To consolidate data, you must first select the range where you want to display the consolidated information (the consolidation table). The consolidation table can be on the same worksheet as the source data, in a separate worksheet, or even in a separate workbook. You must then select each range from which you want to consolidate information (the data sources). You can consolidate data from a maximum of 255 source ranges. You must also select the desired summary function; Excel provides eleven different summary functions, including **Sum**, **Count**, and **Average**.

The source data can be copied or linked to the consolidation table. If the source data is linked to the consolidation table, the consolidation table will be automatically updated each time the source data changes.

When Excel consolidates data, a row is added to the consolidation table for each source range. Although these rows are collapsed by default, you can expand them to view the source data.

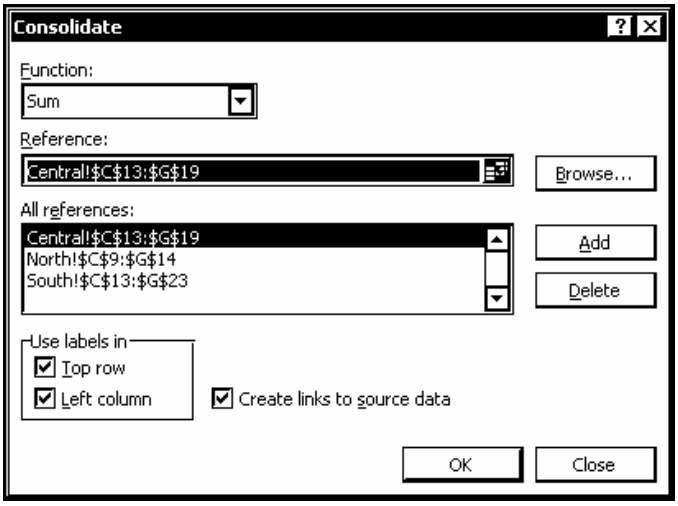
CONSOLIDATING BY CATEGORY

Discussion

You can consolidate information based on categories. This method is useful when the column or row headings are the same for all the data you want to consolidate, but are positioned differently in each source area. For example, in a workbook tracking sales for several regions, the sales products may be organized differently in each worksheet. You can consolidate by category to sum all the sales products, regardless of their order on the individual worksheets.

When you consolidate by category, Excel matches the column or row labels to consolidate the data. Consequently, you must select the column and/or row headings in the consolidation table, as well as in all source areas.

A source area can contain categories of information not included in the consolidation table. Excel will only extract source information from categories that appear in the consolidation table.



Consolidating data by category

> When you consolidate by category, the labels across each category must be identical; if any one label is misspelled or capitalized differently, that data will not be consolidated.

Procedures

1. Open all workbooks from which you want to consolidate data.
2. Select the range for the consolidation table.
3. Select the **Data** menu.
4. Select the **Consolidate** command.
5. Select the **Function** list.
6. Select the desired function.
7. Select the **Top row** option under **Use labels in**.
8. Select the **Left column** option under **Use labels in**.
9. Select the **Create links to source data** option, if desired.
10. Click the **Collapse Dialog** button in the **Reference** box.
11. Select the first worksheet or workbook containing a source area you want to consolidate.
12. Select the desired source area, including the row and column labels.

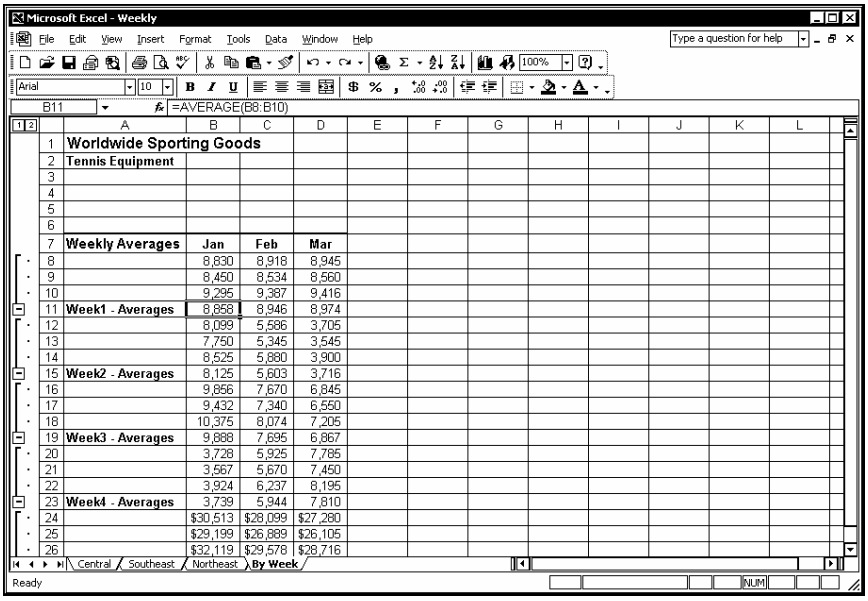
13. Click the **Expand Dialog** button .
14. Select **Add**.
15. Click the **Collapse Dialog** button in the **Reference** box.
16. Select the next worksheet or workbook containing a source area you want to consolidate.
17. Select the desired source area, including the row and column labels.
18. Click the **Expand Dialog** button .
19. Select **Add**.
20. Select additional source areas as desired.
21. Select **OK**.

CONSOLIDATING BY POSITION

Discussion

You can consolidate information based on the position of the source data. This method is useful when the data appears in the same location or relative position on all the worksheets you want to consolidate. For example, if you have three identical worksheets for three different products in which only the data varies, you can consolidate based on position.

When you consolidate by position, you do not need to include the row or column headings when specifying the destination and source ranges.



Data consolidated by position

Source data does not need to be located in identical locations; it can be arranged in the same relative location. For example, the **Phone**, **Hotel**, and **Meals** data can be located in columns B, C, and D in one source and in columns G, H, and I in another.

Procedures

1. Open all workbooks from which you want to consolidate data.
2. Select the range for the consolidation table, not including row or column labels.
3. Select the **Data** menu.
4. Select the **Consolidate** command.
5. Select the **Function** list.
6. Select the desired function.
7. Select the **Create links to source data** option.
8. Click the **Collapse Dialog** button in the **Reference** box.
9. Select the first worksheet you want to consolidate.
10. Select the desired source data.

11. Click the **Expand Dialog** button .
12. Select **Add**.
13. Add other source data ranges to the **All references** list box, as necessary.
14. Select **OK**.

LESSON 10 -
WORKING WITH OUTLINES

In this lesson, you will learn how to:

- Apply an outline
- Collapse/Expand an outline
- Modify outline settings
- Clear an outline
- Use Auto Outline

APPLYING AN OUTLINE

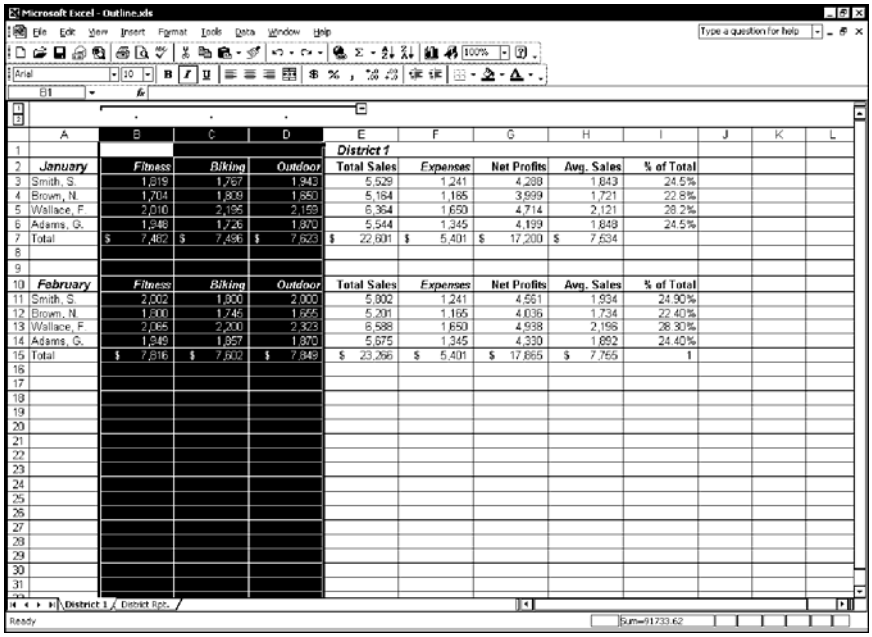
Discussion

Outlining a worksheet makes it easier to understand and analyze information. Outlines divide a worksheet into logical units or levels. Lower levels usually contain the detail data associated with a higher level (such as a row or column of summary data).

You can use outline levels to group similar information together. Then, you can collapse and expand the outline to control the level of detail that appears.

Outlines allow you to see the relationships between detail data and summary data. For example, if a formula in cell A10 totals the numbers in cells A1 through A9, you can use the **Outline** feature to display a symbol on the left side of the worksheet, showing that the total in row 10 is based on the detail data in rows 1 through 9.

Outlining is a convenient way to display summary data. A complex sheet (such as one that contains monthly sales figures for each region of a company) can be large and difficult to use. You must often scroll through detail data to locate the summary data. When you use an outline, you can hide the detail data in order to display only the desired information. In addition, you can print just the summary data.



	A	B	C	D	E	F	G	H	I
1					District 1				
2	January	Fitness	Biking	Outdoor	Total Sales	Expenses	Net Profits	Avg. Sales	% of Total
3	Smith, S.	1,819	1,767	1,943	5,529	1,241	4,288	1,843	24.5%
4	Brown, N.	1,704	1,809	1,650	5,164	1,165	3,999	1,721	22.8%
5	Wallace, F.	2,010	2,195	2,159	6,364	1,650	4,714	2,121	28.2%
6	Adams, G.	1,948	1,726	1,870	5,544	1,345	4,199	1,848	24.5%
7	Total	$ 7,482	$ 7,496	$ 7,623	$ 22,601	$ 5,401	$ 17,200	$ 7,534	
8									
9									
10	February	Fitness	Biking	Outdoor	Total Sales	Expenses	Net Profits	Avg. Sales	% of Total
11	Smith, S.	2,002	1,800	2,000	5,802	1,241	4,561	1,934	24.90%
12	Brown, N.	1,800	1,746	1,655	5,201	1,165	4,036	1,734	22.40%
13	Wallace, F.	2,085	2,200	2,303	6,588	1,650	4,938	2,196	28.30%
14	Adams, G.	1,949	1,857	1,870	5,675	1,345	4,330	1,892	24.40%
15	Total	$ 7,816	$ 7,602	$ 7,848	$ 23,266	$ 5,401	$ 17,865	$ 7,755	1

Applying an outline

An outline can have up to eight levels of detail.

Excel assumes that the detail data for rows and columns appears above or to the left of the summary rows and columns. If this is not the case, you can change the direction by selecting the **Data** menu, pointing to the **Group and Outline** command, and selecting the **Settings** command.

If you select a group of cells in a worksheet, rather than an entire group of columns or rows, you can indicate how you want the cells grouped by selecting the **Rows** or **Columns** option in the Group dialog box. You can open the Group dialog box by selecting the desired cells and then selecting the **Data** menu, pointing to the **Group and Outline** command, and then selecting the **Group** command.

Procedures

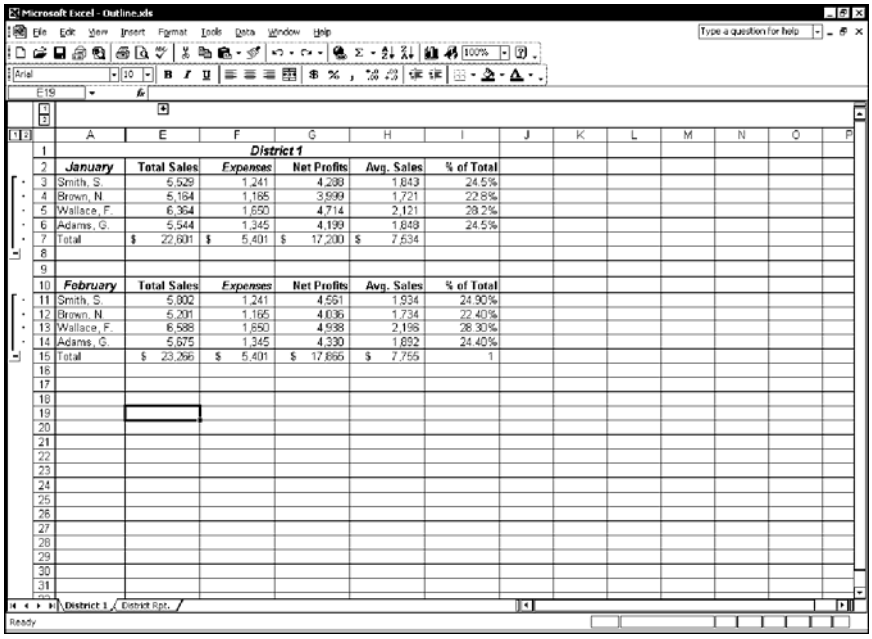
1. Select the rows or columns that contain the detail data.
2. Select the **Data** menu.
3. Point to the **Group and Outline** command.
4. Select the **Group** command.

COLLAPSING/EXPANDING AN OUTLINE

Discussion

Once you have grouped rows and/or columns into an outline, you can then collapse and expand the outline levels. Collapsing a level hides the detail data for that level. Expanding a level displays the detail data for that level.

Expanding and collapsing outline levels allows you to control how much data appears on the screen as well as how much data is printed.



Collapsing an outline

> You can also use the row and column level outline symbols at the top left corner of the worksheet to expand and collapse an outline. The symbols represent the number of outline levels you want to display. For example, you can click the **1** to display only the data on level 1, the highest level. When you click the **2**, the data on both levels 1 and 2 appears.

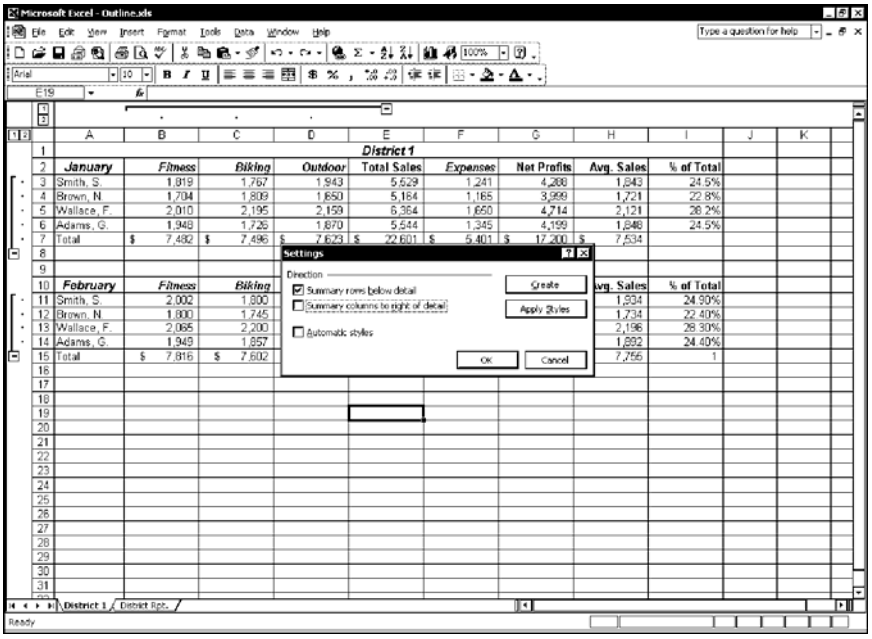
Procedures

1. To collapse an outline level, click the hide detail outline symbol.
2. To expand an outline, click the show detail outline symbol.

MODIFYING OUTLINE SETTINGS

Discussion

When you apply an outline to a worksheet, Excel assumes that the summary data is below the detail rows or to the right of the detail columns. If your worksheet is set up differently, you can change the default settings. You should change the settings before you apply the outlines.



Modifying outline settings

Procedures

1. Select the **Data** menu.
2. Point to the **Group and Outline** command.
3. Select the **Settings** command.
4. Select or deselect the desired options.
5. Select **OK**.

CLEARING AN OUTLINE

Discussion

You can remove all outline levels to clear an outline from a worksheet. Although all the data remains on the worksheet, the distinctions between detail and summary data are removed.

> You can clear specific parts of an outline by selecting the grouped rows or columns and ungrouping them. This action moves the rows or columns to the next highest level. If you want to clear the entire outline, do not select any cells.

> If you clear an outline by mistake, you must recreate it. You cannot use the **Undo** feature to reverse the action.

Procedures

1. Select the **Data** menu.
2. Point to the **Group and Outline** command.
3. Select the **Clear Outline** command.

USING AUTO OUTLINE

Discussion

You can create an outline automatically on a worksheet using Auto Outline. Excel analyzes your worksheet and creates levels based on the summary formulas it finds.

To use Auto Outline, the worksheet must be set up according to the following criteria:

1. The worksheet must have rows or columns that summarize detail data.
2. The orientation of the summary rows or columns to the detail data must be consistent across the worksheet. That is, the summary rows or columns must be consistently above, below, to the right, or to the left of the detail data.

> If a range is selected, Auto Outline creates an outline for that range only. If only one cell is selected, Auto Outline creates an outline for the entire worksheet.

Procedures

1. Select the **Data** menu.
2. Point to the **Group and Outline** command.
3. Select the **Auto Outline** command.

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