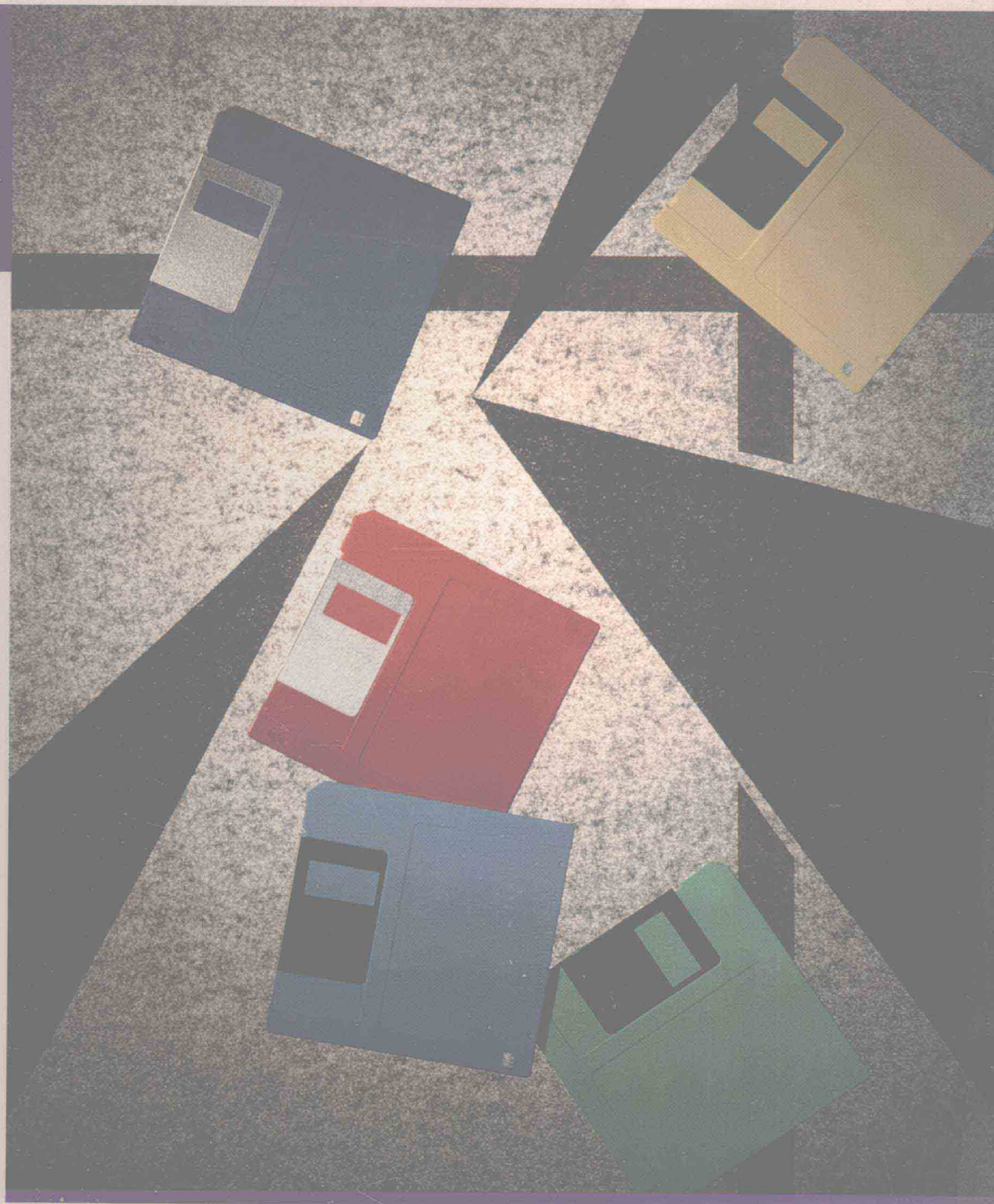


IRWIN
ADVANTAGE
SERIES FOR
COMPUTER
EDUCATION

HUTCHINSON
SAWYER
COULTHARD



Excel 3.0 for Windows

EXCEL[®] 3.0 FOR WINDOWS[®]

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**THE IRWIN ADVANTAGE SERIES
FOR COMPUTER EDUCATION**



IRWIN

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USING THIS GUIDE

This tutorial is one in a series of learning guides that lead you through the most popular microcomputer software programs available. Concepts, skills, and procedures are grouped into session topics and are presented in a logical and structured manner. Commands and procedures are introduced using hands-on examples, and you are encouraged to perform the steps along with the guide. Although you may turn directly to a later session, be aware that some sessions require, or at least assume, that you have completed the previous sessions. For maximum benefit, you should work through the short-answer and hands-on exercises appearing at the end of each session.

The exercises and examples in this guide use several standard conventions to indicate menu instructions, keystroke combinations, and command instructions.

MENU INSTRUCTIONS

In Windows, all Menu bar options and pull-down menu commands have an underlined letter in each option. When you need to execute a command from the Menu bar—the row of menu choices across the top of the screen—the tutorial's instruction line uses a comma to separate the Menu bar option from the command. For example, the command for quitting Windows is shown as:

CHOOSE: File, Exit

This instruction tells you to choose the File option on the Menu bar and then to choose the Exit command from the File pull-down menu. The actual steps for choosing a menu command are discussed later in this session.

KEYSTROKES AND KEYSTROKE COMBINATIONS

When you must press two keys together, the tutorial's instruction line shows the keys joined with a plus sign (+). For example, you execute a command in Windows by holding down (**Alt**) and then pressing the key with the underlined letter of the desired command in the Menu bar.

To illustrate this type of keystroke combination, the following statement shows how to access the File menu option:

PRESS: **Alt**+F

In this instruction, you press the **Alt** key first and then hold it down while you press the F key. Once both keys have been pressed, they are then immediately released.

COMMAND INSTRUCTIONS

This guide indicates with a special typeface data that you are required to type in yourself. For example:

TYPE: George Washington

When you are required to enter unique information, such as the current date or your name, the instructions appear in italics. The following instruction directs you to type your name in place of the actual words: "your name."

TYPE: *your name*

Instructions that use general directions rather than a specific option or command name appear italicized in the regular typeface.

SELECT: *a different pattern for the chart*

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SESSION 1

MICROSOFT EXCEL 3.0: FUNDAMENTALS

Be thankful for the electronic spreadsheet, one of the most commonly used tools in business! A few years ago, the spreadsheet was made out of paper and its 7,500 or so tiny spaces had to be filled in by hand. Many a manager, accountant, and business planner consumed several pencils and cups of coffee revising this paper instrument. Today, the electronic spreadsheet, such as Microsoft Excel, enables you to insert and change numbers with ease. This session shows you how to begin using this valuable tool.

PREVIEW

When you have completed this session, you will be able to:

Explain the applications for electronic spreadsheets.

•

Explain the process of creating a spreadsheet.

•

Load Windows and start Excel.

•

Move around a worksheet using the mouse and keyboard.

•

Use the Excel menu system.

•

Enter and edit text, numbers, and formulas in a worksheet.

•

Perform the Undo command.

•

Access the Help facility.

•

Exit Microsoft Excel and Windows.

SESSION OUTLINE

- Why Is This Session Important?
- The Windows Advantage
- Working with Electronic Spreadsheets
- Working with Microsoft Excel
 - How the Mouse Is Used in Excel
 - How the Keyboard Is Used in Excel
- Starting Excel
- The Guided Tour
 - Application Window
 - Document Window
 - Menu Bar
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 - Dialog Box
- Moving the Cell Pointer
- Overview of Data Entry
 - Entering Text
 - Entering Dates
 - Entering Numbers
 - Entering Formulas
- Editing a Cell
- Erasing a Cell
- Using the Undo Command
- Getting Help
- Leaving Excel
- Summary
 - Command Summary
- Key Terms
- Exercises
 - Short Answer
 - Hands-On

WHY IS THIS SESSION IMPORTANT?

This guide leads you step-by-step through one of the most popular spreadsheet programs available, Microsoft Excel 3.0 for Windows. You will initially concentrate on spreadsheet fundamentals, and then explore the basic procedures, commands, and functions required to work effectively with the Excel spreadsheet.

The electronic spreadsheet has been available for personal computers since the introduction of VisiCalc in 1978. Having sold over 400,000 copies, the VisiCalc program has been credited with driving the market for personal computers. With the arrival of Lotus 1-2-3 in 1983, the second generation of spreadsheet software was launched. Lotus expanded the perceived use of the electronic spreadsheet from a visual calculator (VisiCalc) to an all-around business tool, incorporating spreadsheet, graphing, and database capabilities into a single product. Microsoft Excel for Windows leads the electronic spreadsheet into its third generation, adding a graphical user interface, presentation quality output, outlining capabilities, and single-step functionality.

For years, people used calculators and long scraps of paper to perform numerical calculations. However, the introduction of the electronic spreadsheet has almost rendered these tools obsolete. Accountants, engineers, statisticians, and business people now use spreadsheet programs to analyze financial and statistical results.

An electronic spreadsheet is much more than a glorified calculator! Spreadsheets are often the primary tool used in financial decision-making, forecasting, and scenario analysis. Even though the capabilities of a spreadsheet can seem overwhelming, the basics of creating a spreadsheet can be mastered quite quickly.

An electronic spreadsheet is similar to a manual worksheet, such as an accountant's pad. With a manual worksheet, item descriptions are usually listed in the first column with their related numbers entered under adjacent column headings. An electronic spreadsheet is also composed of rows and columns. The intersection of a row and a column in an electronic spreadsheet is called a **cell**. To build a spreadsheet, you simply enter information into the individual cells.

One of the primary advantages of an electronic spreadsheet over a manual worksheet is the ability to perform **what-if analysis**. The term *what-if* refers to your ability to change information in the spreadsheet and

immediately see the effects of the change on other calculations. In other words, "What if my sales were only 5,000 units? How would that affect my net income?" or "What if the interest rate was 8.5%? How would that affect my mortgage payment?" Once the data has been entered into the spreadsheet, formulas can be created to sum a column of numbers, to calculate percentages, or to perform any number of calculations. These formulas often refer to cell **addresses**, or locations of cells in a worksheet, as opposed to the numbers themselves. When the data in a spreadsheet is changed, formulas are automatically recalculated.

Some additional advantages of using electronic spreadsheets over manual worksheets include:

1. *Electronic spreadsheets can be much larger than manual worksheets.*
While a manual worksheet is limited to the size of the paper, an electronic spreadsheet can often contain more than four million cells. A spreadsheet is typically organized into 256 columns and more than 8,000 rows. This expansive area allows you to keep related information together to produce reports that are larger than a normal piece of paper. The computer screen can be thought of as a window upon this large sheet of paper.
2. *Electronic spreadsheets can perform mathematical calculations.*
A spreadsheet is used to calculate financial, statistical, and mathematical formulas. A **formula** is a mathematical expression, such as $200+350$, that is entered into a cell on the spreadsheet to display a result. This result may then be used in other formulas or printed out in a report. Any application that requires a calculator or scratch pad can be handled by a spreadsheet.
3. *Cells in electronic spreadsheets can reference other cells in the spreadsheet.*
A spreadsheet cell may contain a text label, number, formula, or function. A formula may consist solely of numbers or it may refer to other cells in the spreadsheet. Rather than containing the equation $200+350$, a formula can specify references to the cells that contain these numbers. As a result, a new calculation is computed by simply entering new values in the cells where the old values appeared. As soon as the new numbers are entered, the spreadsheet recalculates the formula. Furthermore, you can create a spreadsheet before you accumulate all your information. Once the data is received and placed into the appropriate cells, the formulas will automatically perform the calculations.

4. *In electronic spreadsheets, calculations are immediate.*

When you are working with a manual worksheet, changing a single number in a column can mean hours of extra work in recalculating totals, averages, and percentages by hand. Fortunately, an electronic spreadsheet allows you to create formulas using cell addresses rather than the actual numbers. Therefore, changing a number in a cell produces a ripple effect of recalculations for all formulas depending on that one cell.

5. *Electronic spreadsheets can be stored and retrieved for repeated use.*

An electronic spreadsheet can be permanently saved on diskettes, hard disks, tape drives, and several other types of media for safe storage. Rather than having to search through endless filing cabinets for manual worksheets created months before, you can use your computer's electronic filing system to retrieve files instantaneously. An electronic spreadsheet can be retrieved, edited, updated, printed, and then saved under a new name quickly and easily.

THE WINDOWS ADVANTAGE

Microsoft Excel 3.0 is the best-selling spreadsheet software program for the Windows environment. With over 10 million copies of Windows sold in the last few years, Windows is fast becoming the environment of choice for many personal computer users. This section explains some of the benefits and shortcomings of working in the Windows environment.

Microsoft Windows is a software program that works with DOS to provide a **graphical user interface** (GUI) for programs. A graphical interface makes using computers easier and more intuitive. With Windows, you use a pointing device called a **mouse** to select from **icons** (pictures that represent programs or functions) rather than having to type lengthy commands. However, Windows is not simply another shell to hide you from the unforgiving world of **DOS**. The Microsoft mandate for Windows is to provide a standardized interface for all programs, whether they are word processing, spreadsheet, or database applications. In other words, once you have learned one Windows product, you can use that knowledge in working with other Windows products.

Some other advantages of working in the Windows environment include:

1. *The ability to run more than one application at a time.*
Windows is a **multitasking** environment whereby more than one application or program may be running at the same time. This feature is especially important for electronic mail, modem, or fax programs that must be running to inform you of incoming messages or transactions. For example, multitasking allows you to simultaneously receive an electronic mail message, calculate an Excel spreadsheet, and write a report in Word for Windows.
2. *The ability to exchange information among applications.*
Windows provides a program called the ClipBoard to copy and move information within an application or among applications. Because more than one application can be running at the same time, it is very easy to copy a budget from an Excel spreadsheet to the ClipBoard, and then paste that budget from the ClipBoard into a report written in Word for Windows.
3. *The ability to display on the screen what you will get from the printer.*
This feature is called **WYSIWYG** ("What You See Is What You Get"); it allows different fonts, borders, and graphics to be displayed on the screen at all times. Most DOS programs provide a print preview feature, but do not display the true WYSIWYG capabilities of Windows programs.

The primary disadvantage of working in the Windows environment is that the program requires a powerful computer to maintain a reasonable processing speed. The minimum system requirements, from a practical point of view, are a 386-based computer with 2 MB of RAM and 6 MB of free disk space. Increasing the RAM memory and using a disk caching software utility program, such as SMARTDRV.EXE, can greatly improve performance.

WORKING WITH ELECTRONIC SPREADSHEETS

Would you build a house or an apartment building without an architect's plans? Probably not! Even experienced developers and builders rely heavily on the planning phase before breaking ground. Likewise, would you create a spreadsheet without a clear objective? Obviously, the risks are much greater when you build a house or an apartment than when you create a

spreadsheet. Or are they? For instance, a single formula entered incorrectly can ripple through an entire spreadsheet, causing erroneous results. If that spreadsheet happened to be the financial statements of a client, the lawsuit he or she may bring against you is a much greater risk than a misplaced doorway. The moral to the story is simply this: *never underestimate the importance of planning when creating a spreadsheet!*

Use the following steps to plan and develop a spreadsheet:

1. *Establish your objectives.*

Ask yourself why you are creating a spreadsheet. Is it to save time on lengthy calculations or to provide a regular template for a monthly report? By expressly stating your objectives, you gain a better understanding of the requirements of the spreadsheet. Remember — not everything needs to be computerized!

2. *Define the output requirements.*

The layout or structure of a spreadsheet is largely determined by the type of reports required. Attempt to mock up the reports on paper before creating the spreadsheet. This process will help you produce the best layout for the electronic spreadsheet.

3. *Construct the spreadsheet.*

Having completed your needs assessment in steps 1 and 2, begin constructing the spreadsheet. The majority of spreadsheet users enter the known information first, whether text or numbers, and then proceed with creating formulas. This process allows you to see the results of a formula calculation immediately upon its entry.

4. *Test the spreadsheet.*

Testing involves performing manual calculations on separate parts of the spreadsheet and then comparing those values with the spreadsheet's results. Do not take it for granted that the spreadsheet calculations are correct. As mentioned previously, a simple mistake in typing can cause a ripple effect of incorrect results across an entire spreadsheet.

5. *Use the spreadsheet.*

A spreadsheet is often designed with unclear objectives, or the objectives may change after the spreadsheet is constructed. Therefore, the use and reuse of a spreadsheet is important for feedback toward enhancements and modifications. A spreadsheet is a dynamic tool; it must be updated and maintained to remain relevant. However, before modifying a spreadsheet, ensure that you have made backup copies of the original.