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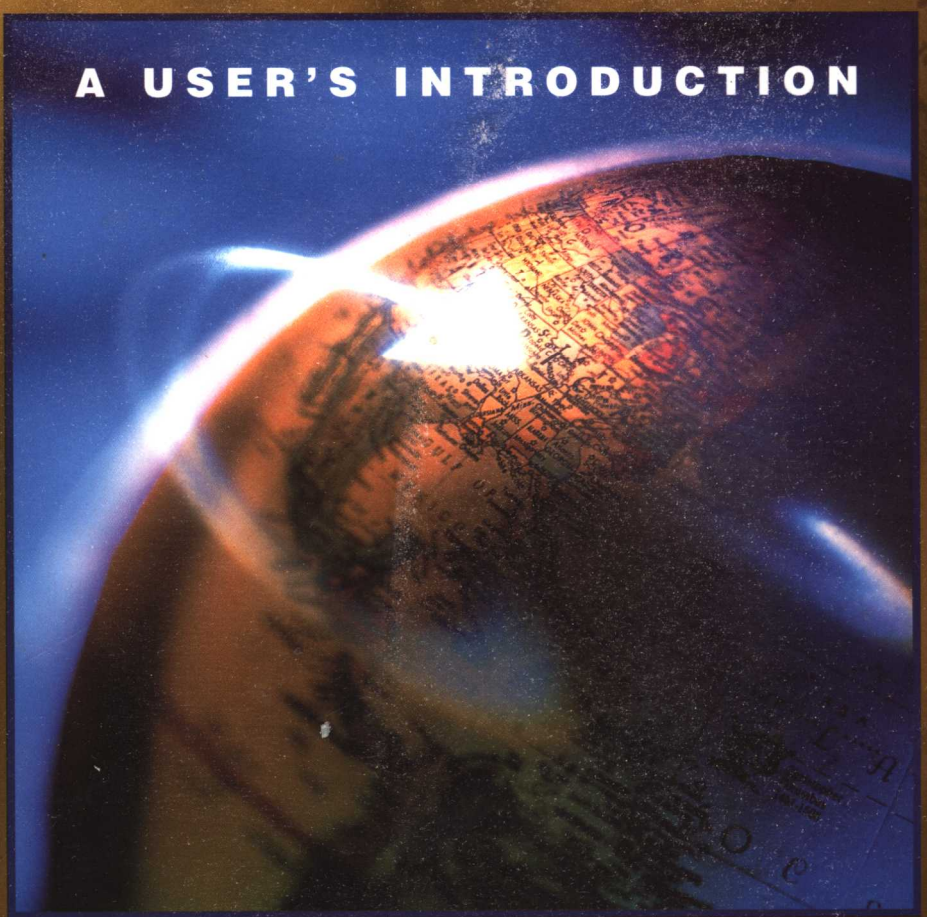

COMPREHENSIVE VERSION

02

Sarah E. Hutchinson • Stacey C. Sawyer

SEVENTH EDITION

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A USER'S INTRODUCTION

COMPREHENSIVE VERSION

SEVENTH EDITION

Sarah E. Hutchinson

Stacey C. Sawyer

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PREFACE

Instructor's Guide to *Computers, Communications, and Information:* Goals/Philosophy

This book is written for future computer users—people who will use the computer as an everyday tool for working with reports, spreadsheets, databases, and, of course, telecommunications. It is not intended only for students who will eventually write programs or design computer systems.

We wrote this book to provide instructors and students with the most useful information possible in an introductory computer course. Specifically, we offer the following five important features:

1. Two versions—Core Version of 8 chapters, and Comprehensive Version of 14 chapters
2. Complete coverage, avoiding unnecessary detail
3. Practical orientation
4. Learning reinforcement
5. Complete course solutions: supplements that work

About the Book

Feature #1: Two Versions—Core Version and Comprehensive Version

We offer two versions:

- ***Core Version:*** This version includes Chapters 1 to 8 and Episodes 1 to 4, with extensive coverage of hardware, software, the Internet, and the Web. This version works well in courses combined with applications.
- ***Comprehensive Version:*** This version includes all the extensive coverage of the Core Version plus an additional six chapters, with detailed coverage on multimedia, information management, databases, systems development, and other advanced topics.

Feature #2: Complete Coverage, Avoiding Unnecessary Detail

This book offers complete coverage of core concepts of computers and information technology. We have tried to be neither too brief nor too encyclopedic, offering users just what they need to know to use a computer competently. Moreover, we have avoided the cluttered, over-illustrated look and style that many instructors tell us they find objectionable in other texts. Thus, you will not find icons, margin notes, cartoons, or similar distractions.

Feature #3: Practical Orientation

The text presents information on capabilities of microcomputers that users can apply at work, home, and school. For example, we provide up-to-date, practical discussion of . . .

- Use of the Internet and the World Wide Web, including Amazon.com Episodes
- Ethics, privacy, and security
- Common features of applications software
- The practical aspects of system software
- Object-oriented programming, expert systems, virtual reality, and digital convergence

- PC and Macintosh hardware, addressing upgrading and compatibility issues
- Computer-related health and safety matters
- Career Boxes that show students how computers are used in the workplace and various professions

Feature #4: Learning Reinforcement

We have developed a variety of learning aids to provide learning reinforcement:

- ***Chapter key questions:*** Each chapter opens with a list of chapter *key questions* matched to each section in the chapter.
- ***What It Is / What It Does / Why It Is Important:*** At the end of each chapter is a summary that covers all the important terms in the chapter—and the page numbers where they appear. We also connect each summary item with its related key question from the beginning of the chapter.
- ***Self-tests, exercises, and critical-thinking questions:*** *End-of-chapter "Self-Test" questions; "In Your Own Words" short-answer exercises;* and *"Knowledge in Action" critical-thinking questions* enable students to test their comprehension and encourage them to learn more about microcomputers on their own. Some of these exercises are Web-related. The answers to the Self-Test questions are provided at the end of each chapter.
- ***Episodes:*** Several *Episodes* or case studies about *Amazon.com* appear throughout the text to provide students with practical insights into establishing a Web-based business.

Feature #5: Complete Course Solutions

The following is a list of supplemental material that can be used to help teach this course.

- ***Instructor's Resource Kit:*** Instructor's Resource Kits provide instructors with all the ancillary material needed to teach a course. Irwin/McGraw-Hill is committed to providing instructors with the most effective instructional resources. The supplements in the Instructor's Resource Kit have been developed as a fully integrated package. Each component supports a learning process that will facilitate students' understanding of facts and concepts and enable them to apply their knowledge. Many of these resources are available at our Information Technology Supersite, found at **www.mhhe.com/it**. Our Instructor's Resource Kits are available on CD-ROM and contain the following;

  —*Diploma by Brownstone:* Diploma is the most flexible, powerful, and easy-to-use computer-based testing system available in higher education. The Diploma system allows instructors to create an exam as a printed version, as a LAN-based online version, or as an Internet version. Diploma also includes grade book features, which automate the entire testing process.

  The question bank contains more than 1500 questions of various types, including multiple choice, true/false, matching, short answer, and essay. A test item table is included to illustrate which questions are included in each of three categories: definition, conceptual, and application. Answers are supplied, as well as page references to where answers appear in the textbook.

  —*Instructor's Manual:* The Instructor's Manual includes an introduction that clearly explains the features of the IM; learning objectives; chapter overviews; chapter outlines; key terms; answers to end-of-chapter exercises; and an index of key concepts.

  —*PowerPoint Slides:* The PowerPoint slides are designed to provide instructors with a comprehensive teaching aid and include key terms and definitions, concept overviews, art from the text, and discussion topics.

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- ***Videos:*** A broad selection of 20 video segments from the acclaimed PBS television series, *Computer Chronicles*, are available. Each video is 30 minutes long. The videos cover topics ranging from computers and politics, to online financial services, to the latest developments in PC technologies.
- ***Interactive Companion CD-ROM:*** This free CD-ROM includes a collection of interactive tutorial labs on some of the most popular topics. By combining video, interactive exercises, animation, additional content, and actual "lab" tutorials, we expand the reach and scope of the textbook. The CD can be used in class, in the lab, or at home by students and instructors.
- ***Digital Solutions to Help You Manage Your Course***

  —*PageOut:* PageOut is our Course Web Site Development Center that offers a syllabus page, URL, McGraw-Hill Online Learning Center content, online exercises and quizzes, gradebook, discussion board, and an area for student Web pages. For more information, visit the PageOut web site at **www.mhla.net/pageout**.

  —*Online Learning Centers:* The Online Learning Center (OLC) that accompanies *Computers, Communications, and Information* is accessible through our Information Technology Supersite at **www.mhhe.com/it**. This site provides additional learning and instructional tools developed using the same three-level approach found in the text and supplements. This offers a consistent method for students to enhance their comprehension of the concepts presented in the text.

  —*Online Courses Available:* **OLCs** are your perfect solutions for Internet-based content. Simply put, these Centers are "digital cartridges" that contain a book's pedagogy and supplements. As students read the book, they can go online and take self-grading quizzes or work through interactive exercises. These also provide students appropriate access to lecture materials and other key supplements.

  Online Learning Centers can be delivered through any of these platforms:
  McGraw-Hill Learning Architecture (TopClass)
  Blackboard.com
  eCollege.com (formerly Real Education)
  WebCT (a product of Universal Learning Technology)

- ***Skills Assessment***

  Irwin/McGraw-Hill offers two innovative systems to meet your skills assessment needs. These two products are available for use with any of our applications manual series.

  —*ATLAS (Active Testing and Learning Assessment Software):* Atlas is one option to consider for an application skills assessment tool from McGraw-Hill. Atlas allows students to perform tasks while working live within the Microsoft applications environment. Atlas provides flexibility for you in your course by offering:

  1. Pre-testing options
  2. Post-testing options
  3. Course placement testing
  4. Diagnostic capabilities to reinforce skills
  5. Proficiency testing to measure skills

  ATLAS is Web-enabled, customizable, and is available for Microsoft Office 2000.

—*SimNet (Simulated Network Assessment Product):* SimNet is another option for a skills assessment tool that permits you to test students' software skills in a simulated environment. SimNet is available for Microsoft Office 97 (deliverable via a network) and Microsoft Office 2000 (deliverable via a network and the Web). SimNet provides flexibility for you in your course by offering:

1. Pre-testing options
2. Post-testing options
3. Course placement testing
4. Diagnostic capabilities to reinforce skills
5. Proficiency testing to measure skills

- ***Office 2000 Application Series:*** Available for discount packaging, our **Advantage Series** leads students through the features of Microsoft Office 2000 with a critical-thinking, "what, why, and how" orientation. Irwin McGraw-Hill also offers additional MS Office 2000 series to suit your teaching preference. Each MS Office 2000 series is Microsoft Office User Specialist (MOUS) certified.

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CHAPTER 1

OVERVIEW

The Foundation for Your Future

KEY QUESTIONS

You should be able to answer the following questions:

1.1 Who Is the User? Mostly People Like You *What is the difference between a computer professional and a computer user?*

1.2 The Importance of Becoming Computer Literate & Computer Competent *What does it mean to become computer literate and computer competent?*

1.3 What Is a Computer-Based Information System? *What are the six elements of a computer-based information system?*

1.4 Computer Hardware *What are the five categories of computer hardware?*

1.5 Computer Software *What is software and what are two categories of software?*

1.6 Types of Computer Systems: What's the Difference? *What five categories can be used to describe computers?*

1.7 Milestones in Computer Development *Through what generations have computers developed?*

1.8 Connectivity, Interactivity, & Digital Convergence *What are connectivity, interactivity, and digital convergence, and how do they affect the user?*

This chapter starts you on your way to becoming computer literate and computer competent so that you can find that special job, the one that helps you realize what you want to do. Richard Bolles, author of the perennial best-selling job-hunting book *What Color Is Your Parachute?*, thinks he knows how to find that job. Luck, he says, favors people who are going after their dreams—the thing they really want to do most in the world—who work hardest at the job hunt, and who have told the most people what they're looking for. Luck also favors people who are prepared.[1]

You can prepare yourself to find your special job by working through this book. Taking this step could make a vast difference in your future. Among workers who were nonusers of computers, according to one survey, 70% reported they were struggling with serious employment problems—layoffs, low pay, dead-end jobs, and the like. By contrast, among those calling themselves "sophisticated" computer users, less than a third reported such problems.[2] Moreover, those who use a computer at work are estimated to make 20% higher wages than those who don't.[3]

This first chapter starts you on your way by presenting a brief overview of computers—hardware, software, and other concepts. Later chapters will cover these topics in detail.

1.1 Who Is the User? Mostly People Like You

KEY QUESTION **What is the difference between a computer professional and a computer user?**

First things first: Do you really know what a computer user is? Consider the following distinction:

- A **computer professional** is a person who has a certain amount of experience and/or at least a two-year degree in the technical aspects of using computers. For example, a *software engineer,* or *computer programmer,* designs, writes, tests, implements, and maintains the software programs that process the data. A *systems analyst* analyzes, designs, and develops entire information systems for businesses and other organizations. A *network administrator* may manage, maintain, and update networks.

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