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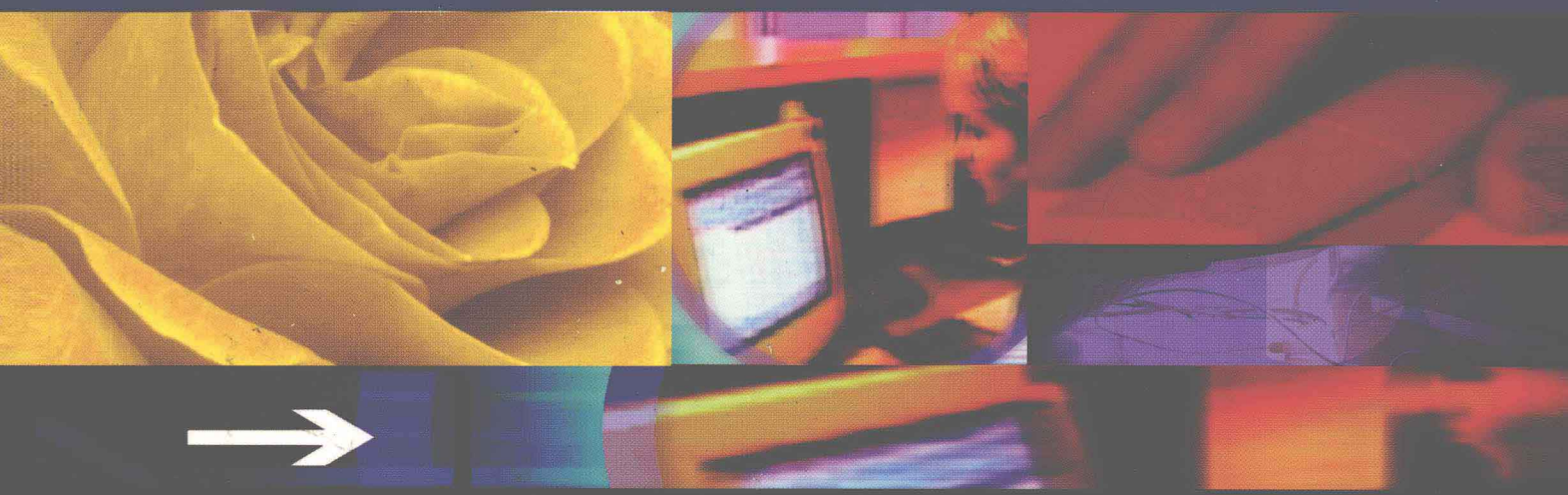
understanding computers today and tomorrow

2003 enhanced edition

CHARLES S. PARKER
DEBORAH MORLEY



enhanced

Understanding Computers: Today and Tomorrow

2003 Enhanced Edition

CHARLES S. PARKER
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Understanding Computers: Today and Tomorrow

2003 Enhanced Edition

PREFACE

The best way for students to learn about technology is to use it. ***Understanding Computers: Today and Tomorrow, 2003 Enhanced Edition,*** provides a truly interactive approach to learning about computers with a text that is fully integrated with a completely updated, multimedia-enhanced Web site. This nontechnical, introductory text explains in straightforward terms the importance of learning about computers, types of computer systems and their components, principles by which computer systems work, practical applications of computers and related technologies, and ways in which the world is being changed by computers. The goal of this text is to provide the reader with a solid knowledge of computer basics and with a framework for using this knowledge effectively in the workplace.

KEY FEATURES

Like previous editions, ***Understanding Computers: Today and Tomorrow, 2003 Enhanced Edition*** is current and comprehensive. Flexible organization and an engaging presentation combine with learning tools in each chapter to help the reader master important concepts. Numerous marginal notations lead students to highly interactive multimedia tutorials, exercises, and TechTV video clips on the ***Understanding Computers*** Web site. Boxed features on a variety of topics provide insight on current issues of interest.

Currency

The state-of-the-art content of this book and its multimedia support package reflect the latest technologies, trends and classroom needs. Throughout the writing and production stages, enhancements were continually being made to ensure that the final product would be as current as possible.

Comprehensiveness and Depth

Accommodating a wide range of teaching preferences, ***Understanding Computers: Today and Tomorrow, 2003 Enhanced Edition*** provides comprehensive coverage of traditional topics while covering hot topics such as the Internet; portable PCs and mobile devices; wireless and mobile communications; Internet searching, online shopping, downloading music, and other online activities; multimedia technology and design; e-commerce and e-business; object-oriented programming; Web databases; global computing issues; and security, privacy, and other timely social issues.

Readability

We remember more about a subject if it is presented in a straightforward way and made interesting and exciting. This book is written in a conversational, down-to-earth style—one designed to be accurate without being intimidating. Concepts are explained clearly and simply, without the use of overly technical terminology. Where complex points are presented, they are made understandable with realistic examples from everyday life.

Chapter Learning Tools

1. **Outline, Learning Objectives, and Overview:** For each chapter, an Outline of the major topics to be covered, a list of student Learning Objectives, and a chapter Overview helps instructors put the subject matter of the chapter in perspective and lets students know what they will be reading about.

2. **Boldfaced Key Terms and Running Glossary:** Important terms appear in boldface type as they are introduced in the chapter. These terms are defined at the bottom of the page on which they appear and in the end-of-text glossary.

3. **Chapter Boxes:** In each chapter, a **Trend box** provides students with a look at current and upcoming developments in the world of computers; an **Inside the Industry box** provides insight into some of the personalities and practices that have made the computer industry unique and fascinating; and a **How It Works box** explains how a technology or product works in more detail than covered in the chapter. Periodic **Campus Close-Up boxes** take a look at how computers and technology are being used at colleges or other educational facilities.

4. **Illustrations and Photographs:** Instructive, current full-color illustrations and photographs appear throughout the book to help illustrate important concepts. Figures and screen shots are carefully annotated to convey important information.

5. **Summary and Key Terms:** This is a concise, section-by-section summary of the main points in the chapter. Every boldfaced key term in the chapter also appears in boldface type in the summary. A matching exercise of selected key terms helps students test their retention of the chapter material.

6. **Review Activities and Projects:** End-of-chapter activities allow students to test themselves on what they have just read. A **Self-Quiz** (with the answers at the end of the text) consists of true-false and completion questions. Five additional easily graded matching and short-answer **Exercises** are included for instructors who would like to assign graded homework. End-of-chapter **Projects** require students to extend their knowledge by doing research beyond merely reading the book. Organized into five types of projects (Short Answer/Research, Hands On, Writing About Computers, Presentation/Demonstration, and Interactive Discussion), a special icon denotes projects that are written as group projects.

7. **Web Tutors, Further Explorations, and Interactive Exercises:** Throughout the text, students are directed to the *Understanding Computers* Web site to complete multimedia-enhanced Web Tutors. The Further Exploration section of the Web site gives students easy access to a variety of Web resources containing more in-depth information on a given topic. Each chapter concludes with a multimedia-rich capstone interactive exercise. These online activities allow students to interact with the concepts discussed in the text and test their knowledge of chapter materials.

8. **Art and Photo Program:** Chapters include fully annotated illustrations integrated with the text material, as well as numerous screen shots that showcase the latest applications. Many illustrations are rendered in a photorealistic style so that you can see the details of computer components close up. In addition, current full-color photographs appear throughout to help illustrate important concepts.

Updated Windows

Three modules contain a special foldout Window containing helpful information or a photo-essay. The updated Windows included with the full text include a "The History of Computers" timeline, a "Web Guide" containing links to useful Web site resources, and a "Ubiquitous Computing" window that takes a look at the ways computers affect our lives.

End of Text Glossary

The Glossary at the end of the book defines all boldfaced key terms in the text with a page reference indicating where the term is discussed.

NEW TO THIS ENHANCED EDITION

2003 Update section

A 40-page 2003 Update section has been added after Chapter 16 and contains the following elements:

- **Chapter-by-Chapter Update Guide**—An easy-to-use two-page spread for each chapter provides students with currency updates for the content contained in the chapter, as well as an overview of related new and emerging technology trends. Illustrative color photographs and several new Chapter Boxes are included in the update.
- **Expanded Computer History Coverage**—Students also have the opportunity to learn more about computer history, specifically about the different computer generations, through a two-page Inside the Industry Computer History boxed feature.
- **Tech News Video Projects**—Eight new exciting Tech News Video Projects direct students to watch relevant Tech TV news clips available through the Online Companion Web site and prepare for a class discussion or written opinion paper.

Updated Windows

The three special foldout Windows have been updated for currency. All three foldout Windows contain new photos and updated information, and the Web link URLs on the Web Guide window have been checked and updated as needed.

STUDENT AND INSTRUCTOR SUPPORT MATERIALS

Understanding Computers: Today and Tomorrow, 2003 Enhanced Edition is available with a complete package of support materials for instructors and students. Included in the package are the comprehensive Understanding Computers Web site, an Instructor's Resource Kit on CD-ROM, and a full-content online course.

web tutor

further exploration

tech news video project

THE UNDERSTANDING COMPUTERS WEB SITE

The Understanding Computers Web site located at:

http://www.course.com/parker2002

provides media-rich support for students, including the following resources:

- **Web Tutors**—a series of multimedia-enhanced tutorials that allow students to interact with the concepts discussed in the text.
- **Further Exploration**—links to Web sites with more in-depth information on a given topic from the text.
- **Tech News Video Projects**—links to TechTV news clips.
- **Interactive Exercises**—multimedia-rich capstone exercises that allow students to test their knowledge after completing each chapter.
- **Web Guide**—provides students with categorized and regularly updated links to the Web's most useful sites.

Instructor's Resource Kit CD-ROM

All of the teaching tools available with this book are provided to the instructor on a single CD-ROM. Please note that the Instructor's Manual and ExamView Testbank are also available online at www.course.com.

Electronic Instructor's Manual

The Instructor's Manual is written to provide instructors with practical suggestions for enhancing classroom presentations. For each of the 16 chapters of the text, the Instructor's Manual provides the following components:

- A complete, three-level **Chapter Outline.**
- A list of **Learning Objectives.**
- **Summary,** oriented to the instructor, with teaching suggestions.
- A list of the **Key Terms** in the chapter and their definitions.
- **Teaching Tips,** with recommended topics for class discussion, important points to cover in class, and mention of additional instructor resources.
- A **Teaching Outline** that gives a detailed breakdown of the chapter, with all major headings and subheadings as well as points to cover under each. References to all textbook figures are also included in this outline.
- **Lecture Anecdotes** providing additional stories, news items, and information specific to chapter content to liven up lectures.
- **Answers to Exercises** that appear at the end of the chapter.
- **Suggestions for Projects** that appear at the end of the chapter.

ExamView

This textbook is accompanied by ExamView, a powerful testing software package that allows instructors to create and administer printed, computer (LAN-based), and Internet exams. ExamView includes over 2,400 questions that correspond to the topics covered in this text, enabling students to generate detailed study guides that include page references for further review. The computer-based and Internet testing components allow students to take exams at their computers, and also save the instructor time by grading each exam automatically.

PowerPoint Presentations

This book comes with Microsoft PowerPoint slides for each chapter. These are included as a teaching aid for classroom presentation, to make available to students on the network for chapter review, or to be printed for classroom distribution. Instructors can customize these presentations to cover any additional topics they introduce to the class.

Guide to Using the 2003 Update

Available online at www.course.com, a Guide to Using the 2003 Update includes suggestions for how to incorporate the material new to the 2003 Enhanced Edition into your course, a chapter-by-chapter teaching outline for the new material, and suggestions for solutions for the video projects.

Tabbing Guide

The tabbing guide can be used to show how and where this textbook has been updated for this edition from the 2000 edition. Page references are included to make planning a class easier for the instructor.

UNDERSTANDING COMPUTERS TODAY AND TOMORROW ONLINE COURSE

For instructors who want to add a richer online component to their courses, Course Technology is proud to present the *Understanding Computers: Today and Tomorrow* Online Course in WebCT and BlackBoard. This new, full-content online course correlates with the text and can be used in a variety of ways: to supplement the text in a traditional classroom setting or as a virtual classroom for distance learning students. Students learn technology by interacting with the content in this dynamic, interactive multimedia environment. Each chapter of the course is filled with interactive activities such as the Web Tutors and Interactive Exercises, links, animations, demonstrations, collaborative classroom activities, critical thinking exercises, and self-tests. For more information on how to bring online content to your course, contact your local Course Technology sales representative.

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2003 Enhanced Edition – Educational Reviewers

Beverly Amer, Northern Arizona University
Cesar Marron, University of Wyoming
David Womack, University of Texas, San Antonio

2003 Enhanced Edition – Industry Expert Reviewers

Jeremy Bates, Multimedia Developer, R & L Multimedia Developers
Charles Hayes, Product Marketing Manager, SimpleTech, Inc.
Rick McGowan, Vice President & Senior Software Engineer, Unicode, Inc.
Russell Reynolds, Chief Operating Officer & Web Designer, R & L Multimedia Developers
Dave Stow, Database Specialist, OSE Systems Inc.

2002 Edition – Educational Reviewers

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Previous Editions

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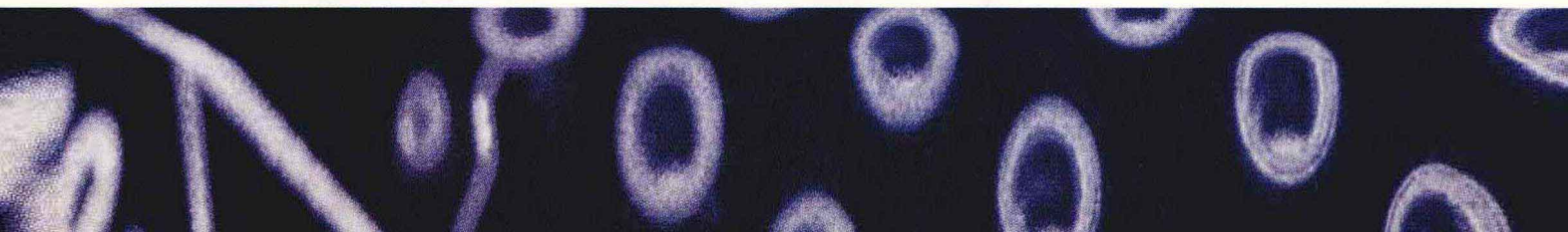
Charles S. Parker
Deborah Morley

We sincerely hope you find this book interesting, informative, and enjoyable to read. If you have any suggestions for improvement, comments, or corrections that you'd like to be considered for future editions, please send them to deborah.morley@course.com

BRIEF CONTENTS



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