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DISCOVERING COMPUTERS 2002

Concepts for a Digital World

Web Enhanced

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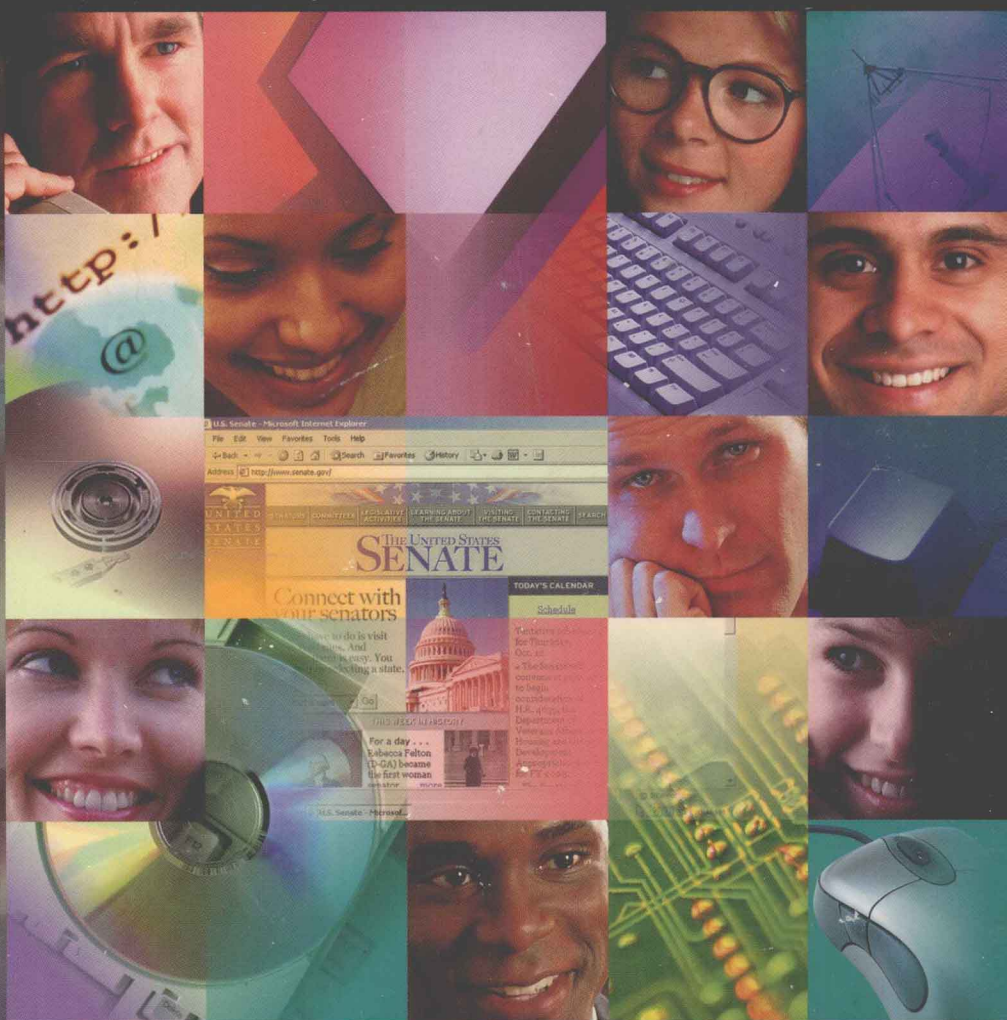

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COMPLETE

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Complete

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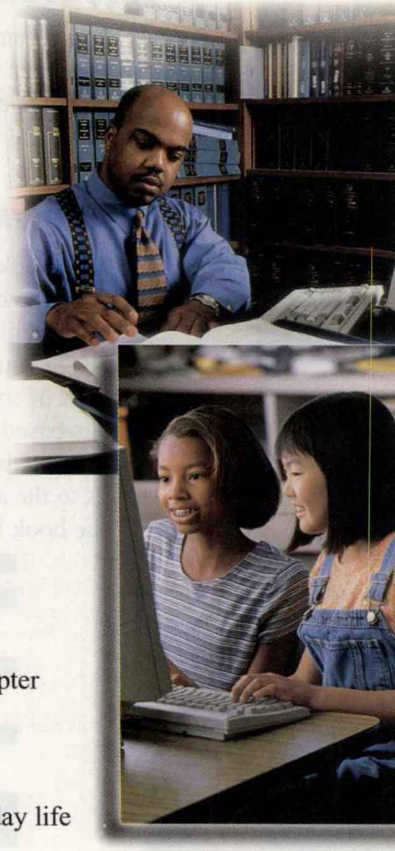
PREFACE

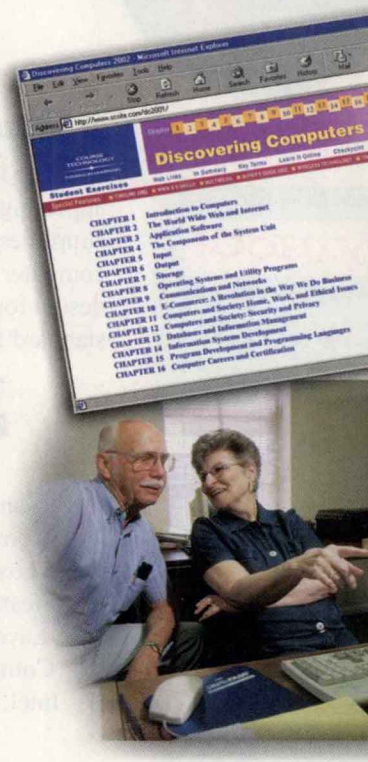
The Shelly Cashman Series® offers the finest textbooks in computer education. We are proud of the fact that the previous six editions of this textbook have been runaway best-sellers. Each of the these editions included new learning innovations, such as integration of the World Wide Web, WebCT, Interactive Labs, online learning games, MyCourse.com, and Teaching Tools that set it apart from its competitors. *Discovering Computers 2002: Concepts for a Digital World, Web Enhanced* continues with the innovation, quality, timeliness, and reliability that you have come to expect from the Shelly Cashman Series. This latest edition of *Discovering Computers* includes these enhancements:



- Eight-chapter Brief edition, twelve-chapter Introductory edition, and sixteen-chapter Complete edition lets you choose the version of the textbook that fits your teaching needs
- Three new chapters round out the concepts students need to know: (1) E-Commerce; (2) Computers and Society: Home, Work, and Ethical Issues; and (3) Careers and Certification
- Students can relate to the Picture Yourself chapter openers that set the stage by providing conversational chapter-related situations
- E-Revolution two-page spreads at the end of each chapter provide a fascinating perspective of Web applications, such as e-finance, e-travel, e-arts, e-learning, e-entertainment, and e-government
- Learn It Online exercise section at the end of each chapter includes practice tests and learning games that offer a unique way for students to solidify, reinforce, and extend the concepts presented in the chapter
- Two cutting-edge companies and two technology trailblazers are spotlighted in each chapter to help students recognize the leaders and major companies in the field of computers
- Career Corner at the end of each chapter pinpoints career opportunities for all levels of students
- Apply It boxes throughout chapters help students apply the concepts presented to everyday life

OBJECTIVES OF THIS TEXTBOOK

The Complete edition of *Discovering Computers 2002: Concepts for a Digital World, Web Enhanced* is intended for use as a stand-alone textbook or in combination with an applications, Internet, or programming textbook in a one-quarter or one-semester introductory computer course. No experience with computers is assumed. The material presented provides an in-depth treatment of introductory computer subjects. Students will finish the course with a solid understanding of computers, how to use computers, and how to access information on the World Wide Web. The objectives of this book are as follows:



- Teach the fundamentals of computers and computer nomenclature, particularly with respect to personal computer hardware and software, and the World Wide Web
- Give students an in-depth understanding of why computers are essential components in business and society in general
- Present the material in a visually appealing and exciting manner that invites students to learn
- Provide exercises and lab assignments that allow students to interact with a computer and actually learn by using the computer and the World Wide Web
- Offer alternative learning techniques with streaming audio and video on the Web, learning games, WebCT, Blackboard, and MyCourse.com
- Present strategies for purchasing, installing, and maintaining a desktop computer, a notebook computer, and a handheld computer
- Assist students in planning a career and getting certified in the computer field

DISTINGUISHING FEATURES

The Complete edition of *Discovering Computers 2002: Concepts for a Digital World, Web Enhanced* includes the following distinguishing features.

A Proven Book

More than five million students have learned about computers using Shelly and Cashman computer fundamentals textbooks. With the additional World Wide Web integration and interactivity, streaming up-to-date audio and video, extraordinary step-by-step visual drawings and photographs, unprecedented currency, and the Shelly and Cashman touch, this book will make your computer concepts course exciting and dynamic.

World Wide Web Enhanced

This book uses the World Wide Web as a major supplement. The purpose of integrating the World Wide Web into the book is to (1) offer students additional information and currency on topics of importance; (2) make available alternative learning techniques with Web-based learning games, practice tests, and interactive labs; (3) underscore the relevance of the World Wide Web as a basic information tool that can be used in all facets of society; and (4) offer instructors the opportunity to organize and administer their traditional campus-based or distance-education-based courses on the Web using WebCT, Blackboard, or MyCourse.com.

This textbook, however, does not depend on Web access in order to be used successfully. The Web access adds to the already complete treatment of topics within the book. The World Wide Web is integrated into the book in seven ways:

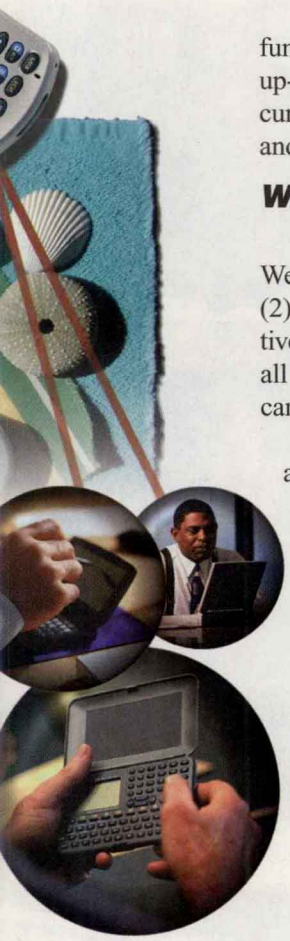
- Streaming audio speaks the end-of-chapter In Summary sections to students
- End-of-chapter pages and the special features in the book are stored as Web pages on the World Wide Web; see page xv for more information
- Streaming up-to-date, computer-related CNN videos on the Web are in the end-of-chapter Web Work sections
- Throughout the text, marginal annotations titled Web Links provide suggestions on how to obtain additional information via the Web on an important topic covered on the page
- Eighteen Interactive Labs on the Web in the end-of-chapter Web Work sections
- WebCT and Blackboard Web-based course management systems for use in a traditional classroom setting or in a distance education environment
- MyCourse.com offers instructors and students an opportunity to supplement classroom learning with additional content on the Web.

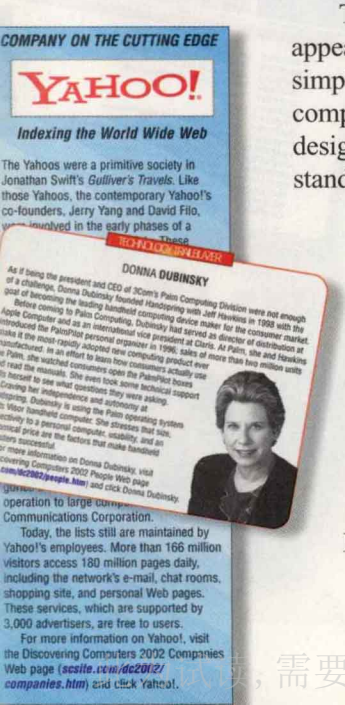
A Visually Appealing Book that Maintains Student Interest

The latest technology, pictures, drawings, and text are artfully combined to produce a visually appealing and easy-to-understand book. Many of the figures show a step-by-step pedagogy, which simplifies the more complex computer concepts. Pictures and drawings reflect the latest trends in computer technology. Finally, the text is set in three columns, which research indicates is the easiest design for students to read. This combination of pictures, step-by-step drawings, and text sets a new standard for computer textbook design.

Technology Trailblazer and Company on the Cutting Edge Boxes

All students graduating from an institution of higher education should be aware of the leaders and major companies in the field of computers. Thus, interspersed throughout each chapter are boxed write-ups on two leaders in technology and two computer companies. The titles of these boxes are Technology Trailblazer and Company on the Cutting Edge. The Technology Trailblazer feature presents people who have made a difference in the computer revolution, such as Bill Gates, Lavonne Luquis, Andy Grove, Carly Fiorina, Marc Andreessen, Tim Berners-Lee, and others. The Company on the Cutting Edge feature presents the major computer companies, such as Microsoft, Intel, Yahoo!, Sun Microsystems, Gateway, IBM, and others.




COMPANY ON THE CUTTING EDGE

YAHOO!

Indexing the World Wide Web

The Yahoos were a primitive society in Jonathan Swift's *Gulliver's Travels*. Like those Yahoos, the contemporary Yahoo!'s co-founders, Jerry Yang and David Filo, were involved in the early phases of a

TECHNOLOGY TRAILBLAZER

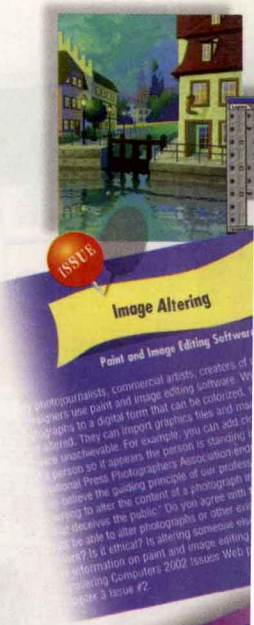
DONNA DUBINSKY

As if being the president and CEO of 3Com's Palm Computing Division were not enough of a challenge, Donna Dubinsky founded Handspring with Jeff Hawkins in 1998 with the goal of becoming the leading handheld computing device maker for the consumer market. Before coming to Palm Computing, Dubinsky had served as director of distribution at Apple Computer and as an international vice president at Claris. At Palm, she and Hawkins introduced the PalmPilot personal organizer in 1996. Sales of more than two million units make it the most rapidly adopted new computing product ever. Palm, she watched consumers open the PalmPilot boxes, read the manuals. She even took some technical support calls herself to see what questions they were asking.

Craving her independence and autonomy at

Latest Computer Trends

The terms and technologies your students see in this book are those they will encounter when they start using computers. Only the latest application software packages are shown throughout the book. New topics and terms include: digital divide; wireless service provider; microbrowser; spider; wireless portal; MP3 player; m-commerce (mobile commerce); latest version of Microsoft Office; online print service; .NET; input devices for handheld computers; digital video camera; video telephone call; digital watermarks; Web bar codes; gesture recognition; Pentium 4; high-performance addressing (HPA); Internet appliance; electronic book (e-book); Digital Display Working Group (DDWG); Digital Visual Interface (DVI); Video Electronics Standards Association (VESA); interactive TV; Internet printing; Internet stamps; optically-assisted hard drive; Internet hard drive; multiread CD-ROM drive; miniature mobile storage media; Picture CD; Active Directory; Microsoft Windows 2000; Solaris; embedded operating system; Pocket PC; Pocket PC OS; utility suite; Web-based utility service; sending and receiving devices; Web cams; collaboration; online meetings; P2P; HomePLC network; phoneline network; HomeRF network; intelligent home network; DSL modem; ISDN modem; digital modem; Fast Ethernet; Gigabit Ethernet; clicks-and-mortar business; disintermediation; e-commerce business models; e-commerce revenue streams; e-procurement; electronic software distribution; Web hosting service; e-retail; shopping bot; e-commerce software; merchant account; electronic Customer Relationship Management (eCRM); e-mail publishing; creation of an online store; impact of computers in use at home and education, entertainment, finance, government, health care, science, publishing, and travel; repetitive stress injury; Internet addiction disorder; green computing; intellectual property; virus hoax; voice verification system; online backup service; S-HTTP; Secure Electronic Transaction (SET); security of e-mail messages; Pretty Good Privacy (PGP); proxy server; personal firewall; online security service; spyware; adware; spam; Web databases; Web server; CGI (common gateway interface); multidimensional databases; data mining; data marts; online analytical processing (OLAP); software engineering; Unified Modeling Language (UML); Object Management Group (OMG); CORBA (Common Object Request Broker Architecture); ActiveX controls; ActiveX technology; bytecode; Jscript; VBScript; extensible HTML (XHTML); WML (wireless markup language); WAP (wireless application protocol); computer certifications, and much more.



End-of-Chapter Exercises

We dedicate as many resources to create the end-of-chapter material as we do to the chapter content. We believe strongly in offering exciting, rich, and thorough end-of-chapter material to reinforce the chapter objectives and assist you in making your course the finest ever offered. As indicated earlier, each of the end-of-chapter pages is stored as a Web page on the World Wide Web to provide your students in-depth information and alternative methods of preparing for examinations. Each chapter ends with the following:

- **E-Revolution** A two-page E-Revolution spread introduces students to Web applications such as e-finance, e-travel, e-arts, e-learning, e-auctions, e-entertainment, and much more. At the end of each E-Revolution are exercises that allow students to apply the topics described.
- **In Summary** This section summarizes the chapter material in the form of questions and answers. Each question addresses a chapter objective, making this section invaluable in reviewing and preparing for examinations. Links on the Web page provide additional current information. With a single-click on the Web page, the In Summary section is spoken to students using streaming audio.
- **Key Terms** This list of the key terms found in the chapter together with the page numbers on which the terms are defined will aid students in mastering the chapter material. A complete summary of all key terms in the book, together with their definitions, appears in the Index at the end of the book. On the corresponding Web page, students can click terms to view a definition and a picture and then click a link to visit a Web page that offers additional information.
- **Learn It Online** These all-new Web-based exercises include exciting activities that maintain student interest. Exercises include a scavenger hunt, search sleuth, practice tests, and learning games.

- **CheckPoint** These pencil-and-paper exercises have been expanded to two pages. Exercises include label the figure, matching, multiple choice, short answer, and working together. Students accessing the Web page can answer the questions in an interactive forum.
- **In The Lab** A series of Windows lab exercises begins with the simplest exercises within Windows. Students then are led through additional activities that, by the end of the book, enable them to be proficient using Windows.
- **Web Work** In this section, students gain an appreciation for the online technology available with the Web. The At The Movies exercise includes streaming video. The Shelly Cashman Series Interactive Labs exercises uses the latest Web technologies. Other exercises in this section, such as working with newsgroups and reviewing the latest news in technology, also use the World Wide Web.

Timeline 2002: Milestones in Computer History

A colorful, highly informative 13-page timeline following Chapter 1 steps students through the major computer technology developments during the past 60 years, including the most recent advances in 2001.

Guide to World Wide Web Sites and Searching Techniques

More than 150 popular up-to-date Web sites are listed and described in this guide to Web sites that follows Chapter 2. This guide also introduces the students to basic searching techniques.

Multimedia: A Virtual Experience

Multimedia is changing the way people work, learn, and play. This special feature following Chapter 6 introduces the students to multimedia applications, such as business presentations, computer-based training, Web-based training, electronic books, entertainment, and edutainment.

Buyer's Guide 2002

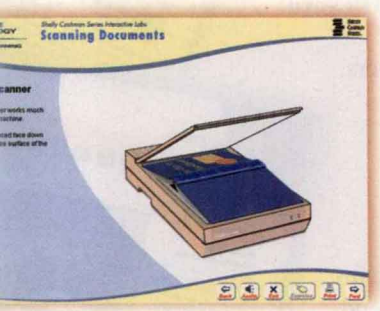
A 10-page guide following Chapter 8 introduces students to purchasing, installing, and maintaining a desktop computer, notebook computer, and handheld computer.

A World Without Wires

This special feature presents a pictorial introduction of the wireless revolution. It describes the growth of wireless technology and the latest in hardware and applications. This special feature is available in the Introductory and Complete editions.

Trends 2002: A Look to the Future

Following Chapter 16, an 11-page feature examines several trends that will influence the direction of the computer field. This special feature is available only in the Complete edition.



Shelly Cashman Series Interactive Labs

The Shelly Cashman Interactive Labs have been redone completely for this edition using the latest technologies. See page xvi for more information.

Data Disk

The Data Disk includes documents and executable programs used in a few of the In The Lab exercises found at the end of the chapters in this book. See the inside back cover for instructions about how to download the Data Disk.

SHELLY CASHMAN SERIES TEACHING TOOLS

Three basic ancillaries accompany this textbook: Teaching Tools (ISBN 0-7895-6261-8), Course Presenter (ISBN 0-7895-6191-3), and MyCourse.com. These ancillaries are free to adopters through your Course Technology representative or by calling one of the following telephone numbers: Colleges and Universities, 1-800-648-7450; High Schools, 1-800-824-5179; Private Career Colleges, 1-800-477-3692; Canada, 1-800-268-2222; and Corporations and Government Agencies, 1-800-340-7450.

2002

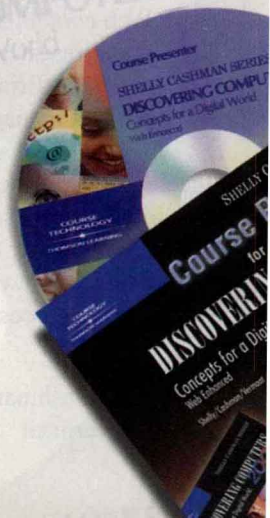
Teaching Tools

The Teaching Tools for this textbook include both teaching and testing aids. The contents of the Teaching Tools CD-ROM are listed below.

- **Instructor's Manual** The Instructor's Manual consists of Microsoft Word files that include the following for each chapter: chapter objectives; chapter overview; detailed lesson plans with page number references; teacher notes and activities; answers to the exercises; test bank (100 true/false, 50 multiple-choice, and 70 fill-in-the-blank questions per chapter); and figure references. The figures are available in the Figures in the Book. The test bank questions are numbered the same as in the Course Test Manager. You can print a copy of the chapter test bank and use the printout to select your questions in Course Test Manager. Using your word processing software, you can generate quizzes and exams.
- **Figures in the Book** Illustrations for every picture, table, and screen in the textbook are available in electronic form. Use this ancillary to present a slide show in lecture or to print transparencies for use in lecture with an overhead projector. If you have a personal computer and LCD device, this ancillary can be an effective tool for presenting lectures.
- **Course Test Manager** Course Test Manager is a powerful testing and assessment package that enables instructors to create and print tests quickly from the 3,500 question test bank. Instructors with access to a networked computer lab (LAN) can administer, grade, and track tests online. Students also can take online practice tests, which generate customized study guides that indicate where in the textbook students can find more information for each question.
- **ExamView** ExamView is a state-of-the-art test builder. ExamView enables you to create printed tests, Internet tests, and computer (LAN-based) tests quickly. You can enter your own test questions or use the 3,500 question test bank that accompanies ExamView.
- **Course Syllabus** Any instructor who has been assigned a course at the last minute knows how difficult it is to develop a course syllabus. For this reason, a sample syllabus is included that can be customized easily to a course.
- **Student Files** A few of the exercises in the end-of-chapter In The Lab section ask students to use these files. You can distribute the files on the Teaching Tools CD-ROM to your students over a network, or you can have them follow the instructions in this preface to obtain a copy of the Discovering Computers 2002 Data Disk.
- **Interactive Labs** These are the non-audio versions of the 18 hands-on Interactive Labs exercises. Students can step through each Lab in about 15 minutes to solidify and reinforce computer concepts. Assessment requires students to answer questions about the contents of the Interactive Labs.
- **Interactive Lab Solutions** This ancillary includes the solutions to the Interactive Labs assessment quizzes.

Course Presenter with Figures, Animations, and CNN Video Clips

Course Presenter is a multimedia lecture presentation system that provides PowerPoint slides for every subject in each chapter. Use this presentation system to give well-organized lectures that are both interesting and knowledge-based. A presentation is provided for each chapter. Each file contains PowerPoint slides for every subject in each chapter together with optional choices to show any figure in the chapter as you introduce the material in class. More than 50 current, two- to three-minute up-to-date, computer-related video clips, many from CNN, and more than 35 animations that reinforce chapter material also are available for optional presentation. Course Presenter provides consistent coverage for multiple lecturers.



MyCourse.com

MyCourse.com offers instructors and students an opportunity to supplement classroom learning with additional course content. You can use MyCourse.com to expand traditional learning by accessing and completing readings, tests, and other assignments through the customized, comprehensive Web site. For additional information, visit mycourse.com and click the Help button.

SUPPLEMENTS

Five supplements can be used in combination with *Discovering Computers 2002: Concepts for a Digital World, Web Enhanced*.

Audio Chapter Review on CD-ROM

The Audio Chapter Review on CD-ROM (ISBN 0-7895-6192-1) speaks the end-of-chapter In Summary pages. Students can use this supplement with a CD player or personal computer to solidify their understanding of the concepts presented. It is a great tool for preparing for examinations. This same Audio Chapter Review also is available at no cost on the Web by clicking the Audio button on the In Summary page at the end of any chapter.

Shelly Cashman Series Interactive Labs with Audio on CD-ROM

The Shelly Cashman Series Interactive Labs with Audio on CD-ROM (ISBN 0-7895-6111-5) may be used in combination with this textbook to augment your students' learning process. See page xvi for a description of each Lab. These Interactive Labs also are available at no cost on the Web by clicking the appropriate button on the Web Work exercise pages (see page 1.47) and as a non-audio version on the Teaching Tools CD-ROM. A companion student guide for the Interactive Labs, titled *A Record of Discovery for Exploring Computers, Fourth Edition* (ISBN 0-7895-6372-X), enhances the Interactive Labs presentation, reinforces concepts, shows relationships, and provides additional facts.

Study Guide

This highly popular *Study Guide* (ISBN 0-7895-6189-1) includes a variety of activities that help students recall, review, and master introductory computer concepts. The *Study Guide* complements the end-of-chapter material with a guided chapter outline; a self-test consisting of true/false, multiple-choice, short answer, fill-in, and matching questions; an entertaining puzzle; and other challenging exercises.

WebCT Users Guide and Blackboard Users Guide

The *WebCT Users Guide* (ISBN 0-7895-6163-8) and the *Blackboard Users Guide* (ISBN 0-7895-6165-4) show students how to navigate through these course management tools.

ACKNOWLEDGMENTS

The Shelly Cashman Series would not be the leading computer education series without the contributions of outstanding publishing professionals. First, and foremost, among them is Becky Herrington, director of production and designer. She is the heart and soul of the Shelly Cashman Series, and it is only through her leadership, dedication, and tireless efforts that superior products are made possible. Becky created and produced the award-winning Windows series of books.

Under Becky's direction, the following individuals made significant contributions to these books: Doug Cowley, production manager; Ginny Harvey, series specialist; Ken Russo, senior Web and graphic designer; Mike Bodnar, associate production manager; Mark Norton, Web designer; Meena Moest, production editor; Michele French, Christy Otten, Stephanie Nance, Chris Schneider, Hector Arvizu and Kenny Tran, graphic artists; Jeanne Black and Betty Hopkins, Quark experts; Laurie Sullivan and Lyn Markowicz, copyeditors; Nancy Lamm and Rich Hansberger, proofreaders; Jeff Quasney, Teaching Tools developer; Tim Walker, Instructor's Manual and MyCourse.com author; Floyd Winters, Web content analyst; Robert Safdie, Course Presenter author; Cristina Haley, indexer; Sarah Evertson of Image Quest, photo researcher; Richard Keaveny, associate publisher; Jim Quasney, series consulting editor; Lora Wade, product manager; Erin Roberts, associate product manager; Francis Schurgot, Web product manager; Marc Ouellette, associate Web product manager; Rachel VanKirk, marketing manager; and Erin Runyon, associate product manager.

Our sincere thanks go to Dennis Tani, who together with Becky Herrington, designed this book. In addition, Dennis designed the cover, performed all the initial layout and typography and executed the magnificent drawings contained in this book.

Finally, thanks to Judy Brown, Paul Bartolomeo, Jeff Corcoran, Dr. Wil Dershimer, Susan Fry, Dr. Homa Ghajar, John G. Hoey, Joyce King, Sherry Lenhart, Dana Madison and Ed Mott, for reviewing the manuscript and to William Vermaat for researching, reviewing the manuscript, and taking photographs. Special thanks to Erin Runyon for recruiting and managing the reviewer process. We hope you find using this book an exciting and rewarding experience.

Gary B. Shelly
Thomas J. Cashman
Misty E. Vermaat
Dolores J. Wells
Susan L. Sebok

NOTES TO THE STUDENT

If you have access to the World Wide Web, you can obtain current and additional information on topics covered in this book in the five ways listed below.

1. Throughout the book, marginal annotations called Web Link (Figure 1) specify subjects about which you can obtain additional current information. Enter the designated URL and then click the appropriate term on the Web page.
2. Each chapter ends with six sections titled In Summary, Key Terms, Learn It Online, Checkpoint, In The Lab, and Web Work. These sections in your textbook are stored as pages on the Web. You can visit them by starting your browser and entering the URL listed in the Web Instructions at the top of the end-of-chapter pages. When the Web page displays, you can click links or buttons on the page to broaden your understanding of the topics and obtain current information about the topics.
3. Each chapter ends with a two-page E-Revolution spread that describes a Web application. Included in this section are URLs that let you apply what you have learned.
4. Throughout the chapters, you will find Apply It, Technology Trailblazer, Company on the Cutting Edge, and Issue boxes. Most of these boxes include URLs that point you to additional information on the topic presented.
5. More than 150 popular up-to-date Web sites are listed and described in the Guide to World Wide Web Sites that follows Chapter 2. This guide also describes basic searching techniques.

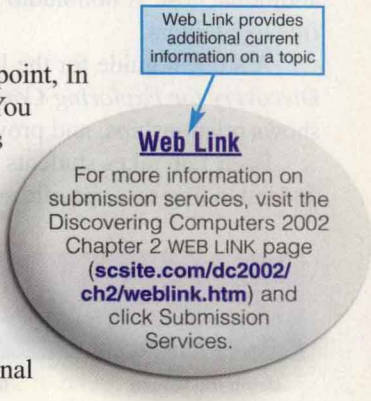


Figure 1

Each time you reference a Web page from the textbook's Web site, a navigation system displays at the top of the page (Figure 2). To display one of the Student Exercises, click the chapter number and then click the Student Exercises title at the top. To display one of the Special Features, click the desired Special Feature title at the top.

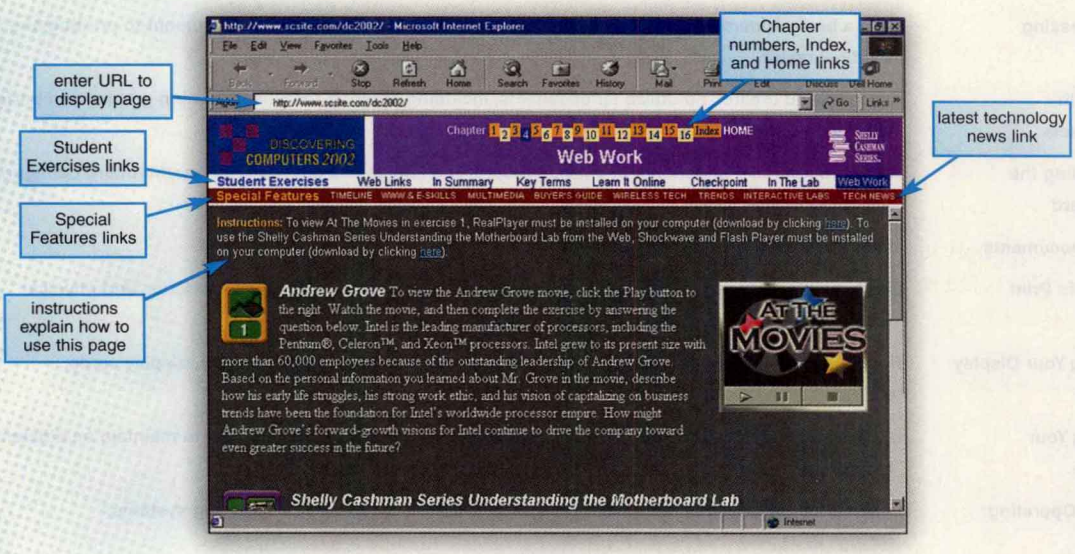


Figure 2

TO DOWNLOAD PLAYERS

For best viewing results of the Web pages referenced in this book, download Shockwave and Flash Player. To play the audio in the In Summary section and view the movie in the Web Work section at the end of each chapter, you must download RealPlayer. Follow the steps below:

Shockwave and Flash Player— (1) Start your browser; (2) enter the URL `macromedia.com`; (3) click DOWNLOADS at the top of the Macromedia home page; (4) click Macromedia Shockwave Player; (5) click the button in the Step box; (6) respond to the dialog boxes.

RealPlayer — (1) Start your browser; (2) enter the URL `real.com`; (3) scroll down and click RealPlayer 8 Basic (this is the free version of RealPlayer); (4) step through and respond to the forms, requests, and dialog boxes; (5) when the File Download dialog box displays, click the Save this program to disk option button; (6) save the file to a folder and remember the folder name; (7) if necessary, start Windows Explorer and double-click the file downloaded in Step 6.

SHELLY CASHMAN SERIES INTERACTIVE LABS WITH AUDIO

Each of the 16 chapters in this textbook includes the Web Work exercises, which utilize the World Wide Web. The 18 Shelly Cashman Series Interactive Labs described below are included as exercises in the Web Work section. These Interactive Labs are available on the Web (see page 1.47) or on CD-ROM. The audio version on CD-ROM (ISBN 0-7895-6111-5) is available at an additional cost. A non-audio version also is available on the Shelly Cashman Series Teaching Tools CD-ROM that is available free to adopters.

A student guide for the Interactive Labs is available at an additional cost. The student guide is titled *A Record of Discovery for Exploring Computers, Fourth Edition* (ISBN 0-7895-6372-X), which reviews the Interactive Labs content, shows relationships, and provides additional facts.

Each Lab takes students approximately 15 minutes to complete using a personal computer and helps them gain a better understanding of a specific subject covered in the chapter.

Shelly Cashman Series Interactive Labs with Audio

Lab	*Function*	*Page*
Using the Mouse	Master how to use a mouse. The Lab includes exercises on pointing, clicking, double-clicking, and dragging.	1.47
Using the Keyboard	Learn how to use the keyboard. The Lab discusses different categories of keys, including the edit keys, function keys, ESC, CTRL, and ALT keys and how to press keys simultaneously.	1.47
Connecting to the Internet	Learn how a computer is connected to the Internet. The Lab presents using the Internet to access information.	2.47
The World Wide Web	Understand the significance of the World Wide Web and how to use Web browser software and search tools.	2.47
Word Processing	Gain a basic understanding of word processing concepts, from creating a document to printing and saving the final result.	3.47
Working with Spreadsheets	Learn how to create and utilize spreadsheets, including entering formulas, creating graphs, and performing what-if analysis.	3.47
Understanding the Motherboard	Step through the components of a motherboard. The Lab shows how different motherboard configurations affect the overall speed of a computer.	4.45
Scanning Documents	Understand how document scanners work.	5.43
Setting Up to Print	See how information flows from the system unit to the printer and how drivers, fonts, and physical connections play a role in generating a printout.	6.41
Configuring Your Display	Recognize the different monitor configurations available, including screen size, display cards, and number of colors.	6.41
Maintaining Your Hard Drive	Understand how files are stored on disk, what causes fragmentation, and how to maintain an efficient hard drive.	7.41
Evaluating Operating Systems	Evaluate the advantages and disadvantages of different categories of operating systems.	8.41
Working at Your Computer	Learn the basic ergonomic principles that prevent back and neck pain, eye strain, and other computer-related physical ailments.	8.41
Exploring the Computers of the Future	Learn about computers of the future and how they will work.	9.49
Understanding Multimedia	Gain an understanding of the types of media used in multimedia applications, the components of a multimedia PC, and the newest applications of multimedia.	11.47
Keeping Your Computer Virus Free	Learn what a virus is and about the different kinds of viruses. The Lab discusses how to prevent your computer from being infected with a virus.	12.45
Designing a Database	Create a database structure and optimize a database to support searching.	13.51
Choosing a Programming Language	Differentiate between traditional languages and the newer object-oriented languages.	15.51

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