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# Computing Concepts

新概念

# 计算机英语

Stephen Haag

Maeve Cummings

Alan I Rea, Jr.



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清华大学出版社

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**Computing Concepts**

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## INFORMATION TECHNOLOGY AT MCGRAW-HILL/IRWIN

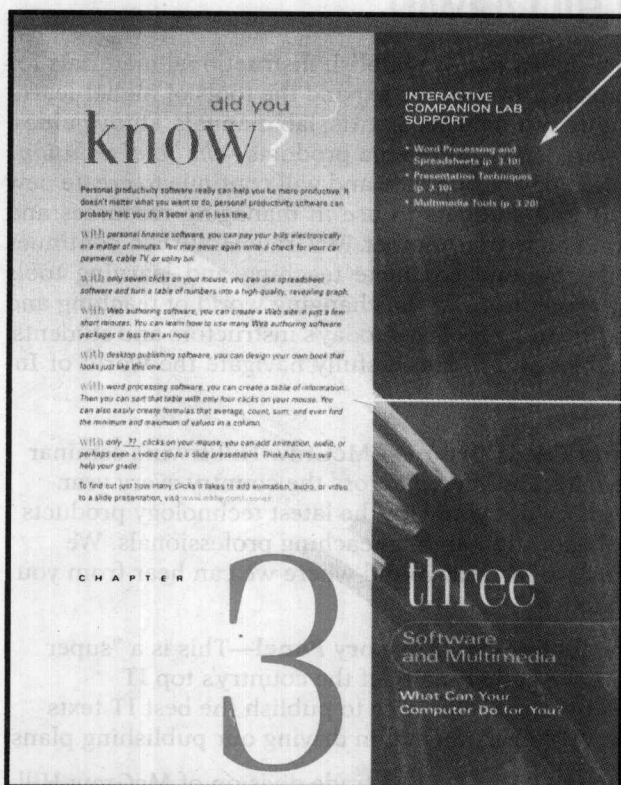
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## THE I-SERIES: COMPUTING CONCEPTS . . . THE FUN STARTS HERE!

INVITING . . .



### Interactive Companion Lab Support

Featured on the chapter opener, this handy list lets you know which multimedia labs are most appropriate for use with the chapter. Twenty labs are included on the free CD packaged with your text.

### Did You Know?

These interesting and fun facts grab your attention right from the start.

### Did You Know? Sidebars

Integrated in the margin throughout the text, this feature continues the chapter-opening theme of intriguing facts for your reading enjoyment.

#### E-COMMERCE BUSINESS

##### What Types of Businesses Are Out There?

You can categorize a business in different ways—whether it's product or service oriented, whether it sells primarily to individual customers or to other businesses, or by its industry (food, manufacturing, health care, etc.). You can also categorize a business according to how you can interact with it through e-commerce.

##### Brick-and-Mortar Businesses

If you can interact with a business only by visiting a physical location such as a store, then it's a brick-and-mortar business. A **brick-and-mortar business** exists only in the physical world and performs no e-commerce functions. Before the Web, almost all businesses fit into this category. (An exception would be mail-order businesses.) Some locally owned businesses are still in this category, but even that's rapidly changing.

##### Click-and-Mortar Businesses

Today most businesses that exist in the physical world are also on the Web. These are click-and-mortar businesses. A **click-and-mortar business** has both a presence in the physical world (such as a store) and a Web site that supports some type of e-commerce. For some click-and-mortar businesses, e-commerce may be a Web page with a phone number and directions. Other businesses such as JCPenney place their catalogs on the Web so you can buy items with your credit card and have them delivered to your home (see Figure 4.1).



## INSIGHTFUL . . .

Four special-interest boxed features sure to engage you are woven throughout the text—bringing concepts to life!


### i series insights

Ethics, Security & Privacy

#### Software That Kills

Software is available today that can actually help you make decisions, especially in the business world. For example, some software can help you determine how much inventory to carry, how to price rooms in a hotel based on seasonal travel, how your customer demographics seem to be changing, and which investment strategies will yield the highest returns. There's even software to help diagnose medical diseases and prescribe treatments.

Software, however, is only as good as the people who develop it. If software has a problem and doesn't produce the correct results, we say that it contains a "bug." Some bugs may not be that bad.



(calculating the wrong pay for example), because their errors can be corrected. However, a bug in a medical program can do permanent damage.

Some years ago in the medical industry, software was developed to help determine how to treat cancer patients. It made a mistake and delivered 130 to 250 times the amount of radiation that patients needed. Four of those patients, unfortunately, died.

Software can help people automate tasks. But those tasks must be described in great detail by an expert. Then, the expert must validate that the software works perfectly. We may have some degree of tolerance for variation in personal productivity software, but certainly not for software in the medical field that determines radiation levels.

### I-Series Insights

Designed to focus on Ethics, Security, and Privacy issues, I-Series Insights provide lively, provocative discussions of these important topics.

### practically speaking


#### The Best Applications of Virtual Reality

Imagine a world in which the color blue feels like sandpaper, a world in which the only furniture you can sit on must be green, or a world in which a pin dropping on the floor sounds like the cracking of thunder. That's the real world for a person with autism. Autism is a disease that interferes with the development of the part of the brain that processes sensory perceptions. Some autistic people do indeed feel things (sandpaper grinding across the skin) when they see colors.

For autistic people, the world is a mishmash of objects that make no sense to them when they have to deal with them all at once. For example, if you place two differently colored chairs in front of an autistic person and tell him or her that they are both chairs, that person may become confused and disoriented.

A simple world is the best world for individuals suffering from autism. So, many researchers are using virtual reality to teach autistic people to deal with everyday life.

In a virtual reality simulation, researchers can eliminate all forms of background noise, colors, and objects, except those that they want the autistic person to focus on. As the autistic person becomes comfortable with a simple virtual reality simulation, new objects or colors can be introduced without the usual adverse side effects. This allows the autistic person to move from dealing with a simple environment to an environment that includes many objects and colors.



Virtual reality is indeed an emerging and cutting-edge technology, and will dramatically change the way we live our lives and interact with technology. When most people think of virtual reality, they think of games and fun events such as experiencing a roller-coaster ride while sitting in a recliner chair. And there'll be much money made with those types of virtual reality applications.

But the best uses of virtual reality won't necessarily make anyone rich. Instead, they'll help people cope with everyday life. And that's true for all the new technology. It's a multibillion-dollar industry. But perhaps we would all do better to let the money take care of itself, and think more about how technology can aid people in everyday life.

### Practically Speaking

These boxes discuss a range of interesting, real-life technology issues. Selected examples include: Internet addiction, speed of speech recognition, and wirelessly wired.

### i buy


#### The Ups and Downs of "Always-On" Internet Connections

If your Internet access is via DSL, cable modem, or satellite modem, you probably have an always-on connection, meaning that as long as your computer is on you're connected to the Internet. The up side is that you have instant access to the Internet, and the down side is that you're open to attacks by hackers.

But you can protect yourself. Your first line of defense is passwords. You can protect your files, folders, and disk drives with passwords. The longer the password the harder it is to break. Since it's not always easy to remember long passwords, you can use a phrase that means something to you and cannot be easily associated with you—perhaps something like "Tryin'MoreTime." But be advised that password-cracking software looks for special phrases and letter combinations, so make the phrase as obscure as you can. If you know words in a language other than English, use a phrase from that language or intersperse the English phrase with non-English words. Throw in some capitalization, digits, and punctuation for good measure. See Chapter 7 for more pointers on passwords.

A good method of protection is a firewall, which is software and/or hardware that protects you from intruders. A software firewall will inform you if someone is trying to gain access to your computer. You can set the program to allow one-time or any-time access to particular people or computers. Some firewall software is available for free.

If you have a home network, you could use a cable/DSL router as a firewall. A router makes your network more or less invisible to outsiders and can also allow several computers to share one high-speed Internet connection.



### I-Buy

These boxes cover pragmatic topics related to buying and upgrading your own PC. Selected examples include: lease vs. purchase, warranties, and quality of life.

### I-Witness

Conveniently located before the end-of-chapter material, I-Witness boxes provide the do's and don'ts of Web site creation and design. Critical thinking is encouraged as you analyze good and bad sites.

### i witness

#### An Up Close Look at Web Sites

#### The Blinking Binge

As you've already seen, there are many ways to make your Web site size and its important messages catch the eye. Some of those ways are using different type fonts and styles, using color, and formatting text with bullet points.

Another common method people use to make text eye-catching is to make it blink. Blinking is the simplest form of motion you can put into your Web site. And it's easy to do. You can make single words, sentences, images, or even your whole Web site blink.

Be careful though. Too much blinking can become annoying and might drive your visitors away. To help you understand how best to use blinking, we've provided three Web sites for you to review. They are:

- www.mhhe.com/comp/etext/Win9x/7.0.html
- www.mhhe.com/comp/etext/Win9x/7.0.html
- www.mhhe.com/comp/etext/Win9x/7.0.html

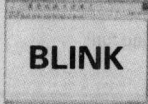
One of those Web sites makes good use of blinking while another uses too much blinking. Which is the good one and which is the bad one? What would you do to the bad one to better utilize blinking?

Finally, one of the Web sites uses no blinking at all but could benefit from it. How would you incorporate blinking into that Web site to make certain text stand out? You can connect to the site for this test and download these Web sites to your computer. You can then make the changes yourself.

#### HTML Reference:

The blink tag

<BLINK>The Blinking Binge/<BLINK>—will cause the text "The Blinking Binge" to blink on your Web site.



- making the grade** SECTION B.1.1
- \_\_\_\_\_ is an operating system function that allows you to work with more than one piece of software at a time.
  - Microsoft's home computer user operating system is Windows 2000 Me or \_\_\_\_\_.
  - \_\_\_\_\_ is software that provides additional functionality to your operating system.
  - \_\_\_\_\_ is utility software that scans for and often eliminates \_\_\_\_\_ in your RAM and on your storage devices.

## C://FILE AND FILE MANAGEMENT CONCEPTS

You use your computer to massage, manipulate, and work with information. It's as simple as that. Even if you're playing a game or surfing the Web, you're massaging, manipulating, and working with information all the time. And, of course, if you're using personal productivity software to write a term paper or create a graph, you're using that software to work

## Making the Grade

These checkpoints, made up of short-answer questions, end each major chapter section, making sure you understand the concepts before reading on. Answers appear in an end-of-book Appendix.

## INTERACTIVE . . .

End-of-chapter material is organized to follow a 3-level system of instruction. This rich assortment of exercises and projects ensures mastery of the material.

## chapter three

## review of terminology

LEVEL ONE

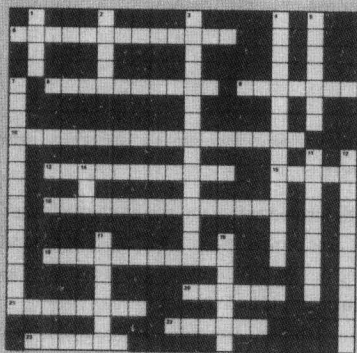
### CROSSWORD PUZZLE

#### Across

- For taking still photos
- Software when your computer crashes
- For scanning photos and art that exist on paper
- Better than word processing software
- Software for personal and business needs
- Handful software
- Software for communicating
- Software that works with cells
- Group of related files
- Software for working with images and the like
- Software that runs your computer
- Surfing on the Web

#### Down

- Information
- Operating system for Apple
- Software that maintains your checking account
- Part of system software
- Given you the right to use software
- Not as good as desktop publishing software
- Loading of files
- Unique letter for each storage device
- Made you maintain an address book
- New release of software
- Part of system software



3.27

## Level One: Review of Terminology

Features a crossword puzzle that makes learning fun!

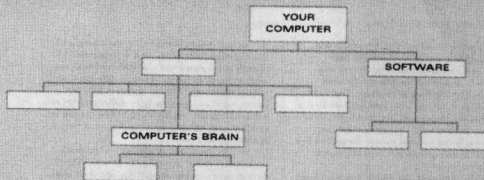
## chapter one

## review of concepts

LEVEL TWO

### QUESTIONS AND EXERCISES

- Fill in the boxes below to complete the categories of the components of your computer:



- Consider the following terms in a related group. For each, place beside it its equivalent computer by size (we've provided one to get you started).

* Cruise ship	_____	* Airplane seat	_____
* 50-passenger bus	_____	* Minivan	_____
* Roller blades	_____	* Motorcycle	_____
		* Desktop	_____

- For each of the following answers, create the question:

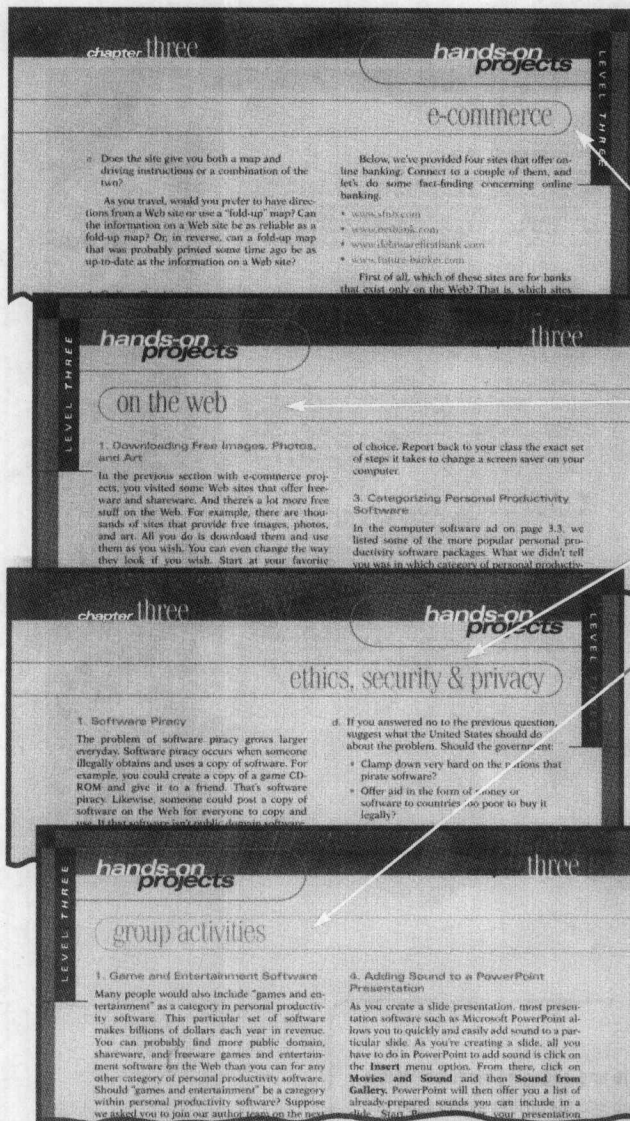
ANSWER	QUESTION
A. The CPU and internal memory (RAM).	_____
B. A computer for supporting the needs of several people simultaneously in small to medium-size businesses.	_____
C. Software that deals with technology-specific tasks.	_____
D. 5	_____
E. For storing information.	_____
F. It's once for buttons and twice for icons.	_____
G. A virtual meeting place on the Web for communicating with people.	_____
H. They make me who I am.	_____

1.27

## Level Two: Review of Concepts

Takes you to the next level with various exercise opportunities, including fill-in, answer/question, and more.





### Level Three: Hands-on Projects

Helps you put principles into practice with an array of project categories, including e-Commerce, On the Web, Ethics, Security & Privacy, and Group Activities.

### Looking Back/Looking Ahead

This unique end-of-chapter feature involves you in summarizing key chapter concepts, while preparing you for what lies ahead.

### Looking Back/Looking Ahead

#### The Life and Times of a Dot-Com Entrepreneur

Joann is quickly moving toward realizing her dream. After closely surveying the Web for competitors, Joann embarked on the process of identifying her desired Internet Service Provider (ISP) and her basic hardware and software needs for being on the Web. Now, she's ready to determine the software she needs to bring her business to life and run it on a daily basis.

First and foremost, Joann knows she'll need \_\_\_\_\_ software to create her Web site. She also realizes that she wants \_\_\_\_\_ on her Web site so visitors can enjoy text, images, sound, animation, and some video clips. To create her art and manipulate photos, Joann has decided she needs to invest in \_\_\_\_\_ software.

Behind her Web site, Joann wants a variety of software to help her be more productive. So, she's buying \_\_\_\_\_ software to manipulate her sales information and create high-quality graphs. She also wants a complete electronic checkbook, including \_\_\_\_\_ banking. For this, she's purchasing \_\_\_\_\_ software.

Joann also realizes that she wants to advertise not only on the Web but also by mailing out brochures and flyers. For this task, she's chosen \_\_\_\_\_ software.

Joann appreciates organization. So, she's keeping her related \_\_\_\_\_ in separate \_\_\_\_\_. Using her \_\_\_\_\_, Joann will be able to keep her files well organized.

Finally, Joann must have a good operating system that will allow her to stay connected to a network. For this, she's chosen Microsoft's \_\_\_\_\_. Although \_\_\_\_\_ seems as though it will be a good operating system for Web-oriented computers, she's chosen not to use it because it's so new. Likewise, \_\_\_\_\_ is for Apple computers—Joann has chosen an IBM compatible.

Now that she has her specific software needs met, Joann is looking toward building her Web site with multimedia and identifying how she wants to perform her electronic commerce activities. After that, she wants to precisely define her hardware needs, including a CPU, RAM, scanner, and digital camera, just to name a few. She'll find all her answers in Chapters 4, 5, and 6.



**INSPIRING!**

**How Do You Make Your Web Site Sizzle?**

**ENHANCED WEB DEVELOPMENT**

**Online Learning Center**

**I-SERIES: Life-Long Learning**



You know how much the Web is now a part of our lives. You can use the Web to find information, buy goods and services, download software, and play games with friends.

Every day people put more Web sites online. You're probably one of them. We designed some Web pages together in Chapter 4. And you learned about Web design in the I-Witness boxes throughout the book.

With all the Web sites out there, how can you make yours stand out from the rest? You can redesign your Web site to make it easier for users to navigate. Or you can add some multimedia to make your Web site more interactive. Maybe you want to create electronic shopping carts to allow customers to buy things at your own e-commerce business. In this *Life-Long Learning* Module, we'll show you how you can accomplish all this and more.

We'll keep you informed of new Web technologies to make your Web site sizzle. Think of your Web site as your electronic business card. The better the information you can put on it and the easier it is to read, the more people you'll attract and retain. Come join us at [www.mhhe.com/i-series](http://www.mhhe.com/i-series) as we explore making Web sites sizzle.

EOB 1.2

**DEVELOPMENT TOOLS**

Your choice of a Web-development tool is an important one if you want to make your site sizzle. You have many options to choose from. In this section we'll explore many of them, including HTML and WYSIWYG editors (Notepad, BBEdit, Dreamweaver, and FrontPage), image and photo editors (Photoshop, Fireworks, and Illustrator are a few), and Web site management tools such as link checkers and site mapping software. We'll also show you how to get by on \$0.00 a day with freeware and open source solutions.

**WEB SCRIPTING AND PROGRAMMING**

Web scripting and programming are all about defining the structure and layout of your Web site and creating interactivity. A well-designed Web site is easy to use, encouraging your readers to visit again and again. Interactivity is also key in retaining readers. Come with us and explore HTML, XHTML, XML, DHTML, JavaScript, VBScript, CGI, Java, and many other scripting and programming tools.

**DESIGN GUIDES**

Anyone can build a Web site, but doing it *effectively* is another story. It's rather like creating an advertising flyer. You can easily create such a flyer and include all the necessary information. What's key is doing it in such a way that people will want to buy your products or services. In Web site design, important considerations include image sizes and placements, use of color, and streamlining Web sites. We'll discuss these issues and much more at [www.mhhe.com/i-series](http://www.mhhe.com/i-series).

**MULTIMEDIA**

The technology world is now multimedia. Almost all presentations of information include some combination of text, art, video, sound, and animation. Your Web site can definitely benefit from the use of multimedia elements. These may include animated GIFs, audio, streaming media, and perhaps even virtual reality. In this section we'll explore these as well as some multimedia development tools such as Flash and Shockwave.

**BEHIND THE SCENES**

As you increase your use of multimedia and other interactive elements, you need to begin to understand what goes on behind the scenes. That is, if you understand the technical infrastructure, you can more readily take advantage of multimedia and interactivity in creating your Web site. Important "behind the scenes" topics include Web servers (and server farms), Web databases, Web security, and Web site architectures.

EOB 1.3

**Life-Long Learning Modules**

The learning never ends! That's why the authors created these unique and engaging modules. With a brief introduction in the text, the authors then take you to the text Web site for further exploration of these timely topics. Modules include enhanced web development, careers, new technologies, and more. See for yourself—visit [www.mhhe.com/i-series](http://www.mhhe.com/i-series).

We understand that, in today's teaching environment, offering a textbook alone is not sufficient to meet the needs of the many instructors who use our books. To teach effectively, you must have a full complement of supplemental resources to assist you in every facet of teaching, from preparing for class to conducting a lecture to assessing students' comprehension. *The I-Series* offers a complete supplements package and Web site.

## INSTRUCTOR RESOURCES

### Instructor's Resource Kit

The Instructor's Resource Kit is a CD-ROM containing the Instructor's Manual in both MS Word and .pdf formats, PowerPoint Slides with Presentation Software, Brownstone test generating software, and accompanying test item files in both MS Word and .pdf formats for each chapter. The CD also contains figure files from the text. The features of each of the three main components of the Instructor's Resource Kit are highlighted below.

#### Instructor's Manual

- Chapter learning objectives per chapter.
- Chapter outline with teaching tips.
- Lecture notes illustrating key concepts and ideas.
- Annotated syllabi (using multiple time formats) depicting a time table and schedule for covering chapter content.
- Suggestions for integrating the teaching of applications.
- Answers to all Making the Grade and end-of-chapter questions.

#### PowerPoint Presentation

Prepared by Linda Mehlinger,  
Morgan State University

The PowerPoint presentation is designed to provide you with comprehensive lecture and teaching resources, including:

- Chapter learning objectives followed by source content that illustrates key terms and key facts per chapter.
- FAQ's (Frequently Asked Questions) to show key concepts throughout the chapter. Also,

lecture notes to illustrate these key concepts and ideas.

- End-of-chapter exercises and activities per chapter as taken from the end-of-chapter materials in the text.
- Speaker's notes are incorporated throughout the slides per chapter.
- Figures/screen shots are incorporated throughout the slides per chapter.

PowerPoint includes presentation software for you to design your own presentation for your courses.

#### Test Bank

Prepared by Margaret Trenholm-Edmunds,  
Mount Allison University

*The I-Series* Test Bank, using Diploma Network Testing Software by Brownstone, contains over 2,000 questions (both objective and interactive) categorized by topic, page reference to the text, and difficulty level of learning. Each question is assigned a learning category:

- Level 1: Key Terms and Facts
- Level 2: Key Concepts
- Level 3: Application and Problem-Solving

The types of questions consist of 40 percent multiple choice, 40 percent true/false, and 20 percent fill-in/short answer questions.

## DIGITAL SOLUTIONS FOR INSTRUCTORS AND STUDENTS

### Online Learning Center/Web Site

The Online Learning Center (OLC) that accompanies *The I-Series* is accessible through our Information Technology Supersite at [www.mhhe.com/catalogs/irwin/it/](http://www.mhhe.com/catalogs/irwin/it/). This site provides additional review and learning tools developed using the same three-level approach found in the text and supplements. To locate *The I-Series* OLC/Web site directly, go to [www.mhhe.com/i-series](http://www.mhhe.com/i-series). The site is divided into three key areas:

- **Information Center** contains core information about the text, the authors, and a guide to our additional features and

benefits of the series, including the supplements.

- **Instructor Center** offers instructional materials, downloads, additional activities and answers to additional projects, relevant links for professors, solutions files, and more.
- **Student Center** contains chapter objectives and outlines, self-quizzes, additional projects, student data files, Web links, and more.

As teachers, we realize that no printed text can be completely up-to-date. The *I-Series: Computing Concepts* Web site augments the printed texts by providing the most up-to-date reviews of technology and much more. Below is just a partial list of exciting topics you'll find on the Web site.

- Personal digital assistants
- Web sites for career searching
- How to use search engines
- Web computers
- Technical Internet resources
- Free image and background sites
- Multimedia authoring software reviews
- Public domain, shareware, and freeware sites
- Web sites that sell software
- M-commerce
- HTML guides
- New CPUs
- Printers and monitors
- Optical storage devices
- Satellite modems
- Bluetooth and WiFi
- Wireless ISPs
- Anti-virus software
- Privacy organizations
- Personal portals
- Automatic speech recognition
- Javascript sites

- Data flow diagramming
- Programming languages
- TQM and BPR
- Leasing a computer
- Groupware suites
- Cultural oddities
- Web hosting services
- Intelligent agents
- Data mining

**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.

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)

## PageOut

As our Course Web Site Development Center, PageOut 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.pageout.net](http://www.pageout.net).

## PowerWeb

PowerWeb for Information Technology is an exciting online product available for *The I-Series*. A nominally priced token grants students access through our Web site to a wealth of resources—all corresponding to the text. Features include an interactive glossary; current events with quizzing, assessment, and measurement options; Web survey; links to related text content; and WWW searching capability via Northern Lights, an academic search engine.



## STUDENT RESOURCES

### Interactive Companion CD

Packaged with the text, this CD-ROM is designed for use in class, in the lab, or at home by students and instructors. The CD combines video, interactive exercises, and animations to cover the most difficult and popular computing concepts. On the first page of each chapter in *The I-Series: Computing Concepts*, you'll find a list of which Interactive Companion Labs are most appropriate for the chapter. You'll also find specific in-text references within each chapter. For example, the Interactive Companion lab titled "E-Mail Essentials" augments the coverage of e-mail in Chapter 2 (The World Wide Web and the Internet).



### SimNet XPert

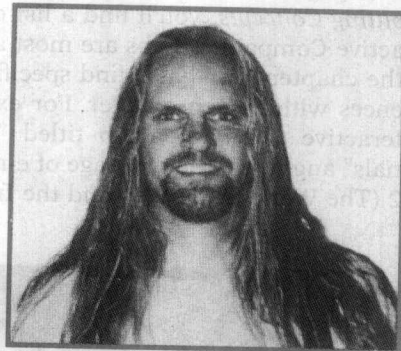
SimNet XPert is a simulated assessment and learning tool. It allows students to study MS Office XP skills and computer concepts, and instructors to test and evaluate students' proficiency within MS Office XP applications and concepts. Students can practice and study their skills at home or in the school lab using SimNet XPert, which does not require the purchase of Office XP software.

**For more information** on the extensive I-Series supplements package, contact your local McGraw-Hill/Irwin representative or visit our Web site at [www.mhhe.com/i-series](http://www.mhhe.com/i-series).

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## FROM STEPHEN HAAG . . .

Throughout my 17 years of publishing, many people have stood by me and supported my efforts. JD Ice really opened the doors of textbook writing for me. Even though he is no longer my editor, I always strive to the level of excellence to which he challenged me. And David Brake, forever my friend in the publishing world, helped me to understand that textbook writing isn't just a job (or an adventure), but a calling that cannot be ignored.

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## FROM MAEVE CUMMINGS . . .

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## FROM ALAN I REA, JR. . . .

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## FROM THE AUTHOR TEAM . . .

This text is certainly not the sole work of just three authors. Rather, it represents the collective efforts of some of the most skilled and innovative people in the publishing industry today. Dan Silverburg, George Werthman, and Rick Williamson each played key roles in providing guidance and motivation. People like Mary Conzachi, Scott Scheidt, Mary Christianson, and Jen McQueen transformed our ideas into the product you see.

And we wish to acknowledge the reviewers of *The I-Series*. They spent countless hours both criticizing and applauding us. The applause was easy to accept; the criticism often difficult. However, we understand their critical analysis of our material was born out of a true love for education and a desire to see their students succeed. Our reviewers were paid only a fraction of their true worth. Even attempting to measure their significance is futile, at best.

Most importantly, Gina Huck and Melissa Forte not only helped us realize our goal but also forged the very path we traveled. Gina and Melissa gave life to *The I-Series*, from the creation of its name to the development of the product vision that guided our writing. *The I-Series* belongs to them as much as it does anyone. Suffice it to say, they should be listed as authors as well. A million thanks is a million too few.

We welcome any and all feedback from you, our valued customer. Please e-mail us at [i-series@mcgraw-hill.com](mailto:i-series@mcgraw-hill.com) with any suggestions, corrections or noteworthy additions you want to pass along!

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