// TIMOTHY J. O'LEARY
// LINDA I. O'LEARY

computing ESSENTIALS

2004

// introductory edition

Computing Essentials
2004

Introductory Edition

Timothy J. O'Leary
Arizona State University

Linda I. O'Leary

Irwin

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COMPUTING ESSENTIALS 2004: INTRODUCTORY EDITION

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Computing Essentials
2004

Introductory Edition

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Preface

INTRODUCTION

The 20th century not only brought us the dawn of the Information Age, but continued to bring us rapid changes in information technology. There is no indication that this rapid rate of change will be slowing—it may even be increasing. As we begin the 21st century, computer literacy will undoubtedly become prerequisite in whatever career a student chooses. The goal of *Computing Essentials 2004* is to provide students with the basis for understanding the concepts necessary for success in the Information Age. *Computing Essentials* also endeavors to instill in students an appreciation for the effect of information technology on people and our environment, and to give students a basis for building the necessary skill set to succeed in this new, 21st century.

ABOUT THE AUTHORS

Tim and Linda O'Leary live in the American Southwest and spend much of their time engaging instructors and students in conversation about learning. In fact, they have been talking about learning for over 25 years. Something in those early conversations convinced them to write a book, to bring their interest in the learning process to the printed page. Today, they are as concerned as ever about learning, about technology, and about the challenges of presenting material in new ways, in terms of both content and the method of delivery.

A powerful and creative team, Tim combines his years of classroom teaching experience with Linda's background as a consultant and corporate trainer. Tim has taught courses at Stark Technical College in Canton, Ohio, and at Rochester Institute of Technology in upper New York state, and is currently a professor at Arizona State University in Tempe, Arizona. Tim and Linda have talked to and taught students from 8 to 80, all of them with a desire to learn something about computers and the applications that make their lives easier, more interesting, and more productive.

Each new edition of an O'Leary text, supplement, or learning aid has benefited from these students and their instructors who daily stand in front of them (or over their shoulders). *Computing Essentials 2004* is no exception.

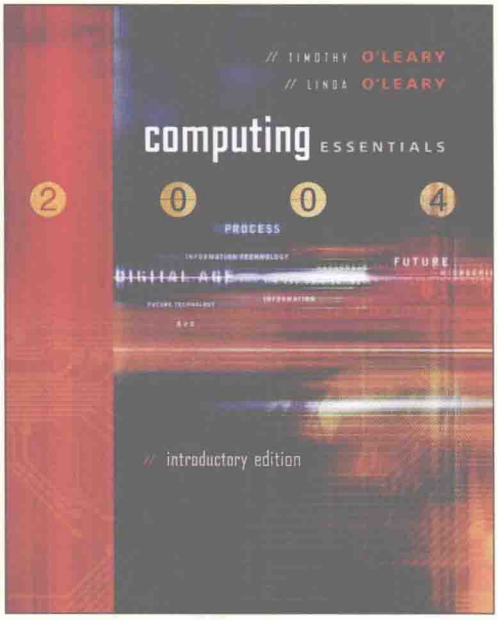
A WORD FROM THE AUTHORS

Times are changing, technology is changing, and this text is changing too. Do you think the students of today are different from yesterday? Mine are and I'll wager that yours are as well. On the positive side, I am amazed how much effort students put toward things that interest them and things they are convinced are relevant to them. Their effort directed at learning application programs and exploring the Web seems at times limitless. On the other hand, it is difficult to engage them in other equally important topics such as personal privacy and technological advances.

I've changed the way I teach and this book reflects that. I no longer *lecture* my students

about how important certain concepts like microprocessors, input devices, and utility programs are. Rather, I begin by *engaging* their interest by presenting practical tips related to the key concepts, by *demonstrating* interesting applications that are relevant to their lives, and by *focusing* on outputs rather than processes. Then, I *discuss* the concepts and processes.

Motivation and relevance are the keys. This text has several features specifically designed to engage students and to demonstrate the relevance of technology in their lives. These elements are combined with a thorough coverage of the concepts and sound pedagogical devices.



SELECTED FEATURES OF THIS EDITION

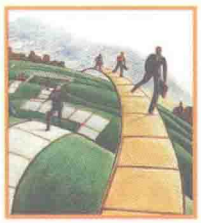
- **Visual Chapter Openers** Each chapter begins with a two-page Visual Chapter Opener with large graphics and brief text. The graphics present the structure and organization of the chapter. The text relates the graphics to topics that are covered in the chapter and discusses their importance. The objective of the visual chapter openers is to engage students and provide relevancy and motivation.
- **On the Web Explorations** Within nearly every chapter, two or more On the Web Explorations are presented as marginal elements. These explorations encourage students to connect to carefully selected Web sites that provide additional information on key topics. The objective of the Web Explorations is to encourage students to expand their knowledge by using Web resources.
- **Tips** Within nearly every chapter, Tips are provided that offer advice on a variety of chapter-related issues such as how to efficiently locate information on the Web, how to speed up computer operations, and how to protect against computer viruses. One objective of the Tips is to provide students with assistance on common technology-related problems or issues. The other objective is to motivate students by showing the relevance of concepts presented in the chapter to their everyday lives.
- **Concept Checks** Every chapter contains strategically placed Concept Check boxes. Each box contains questions related to the material just presented. The objective of these Concept Checks is to provide students the opportunity to test their retention of key chapter concepts.

Concept Check

- ✔ What are the five parts of an information system?
- ✔ What is required of a competent end user?

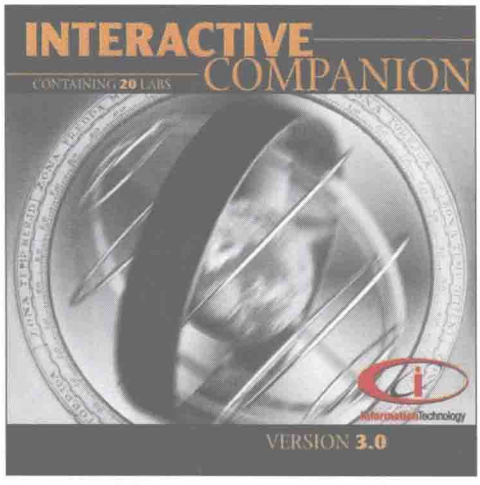
- **Making IT Work for You** Based on student surveys, 12 special interest topics have been identified. These topics include downloading music from the Internet, creating personal Web sites, and using the Internet to place free long-distance telephone calls. Each of these 12 special interest topics is presented in a two-page Making IT Work for You section within the relevant chapter. The objective is to engage students by presenting high-interest topics and to motivate them to learn about related concepts in the chapter.

- **Demonstration Videos** Based on student interest and chapter content, several Making IT Work for You special interest topics have been selected for special attention. I have created seven short videos that bring these selected topics to life. These videos are available on CD for classroom viewing and on the Web for direct student viewing. One objective of this feature is to motivate students by animating and extending the static, printed, two-page Making IT Work for You presentation in the textbook. The other objective is to provide instructors with a presentation tool for classroom demonstrations that are integrated and further supported by the textbook.
- **A Look to the Future** Each chapter concludes with a brief discussion of a specific recent technological advance related to material presented in the chapter. The objective of this feature is to remind students that technology is always changing and to reinforce the importance of staying informed of recent changes.

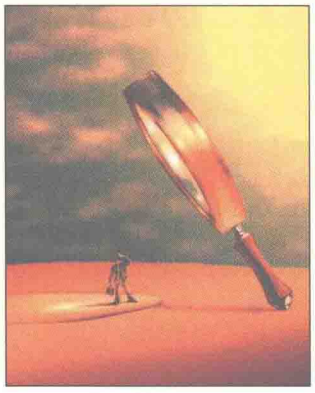


- **Visual Chapter Summaries** Each chapter ends with a multipage visual chapter summary. Like the chapter openers, the summaries use graphics to present the structure of the chapter and text to provide specifics. Using a columnar arrangement, major concepts are represented by graphics followed by detailed text summaries. The objective of the visual chapter summaries is to provide a detailed summary of key concepts and terms in an engaging and meaningful way.
- **Using Technology** Every chapter has two Web-related end-of-chapter exercises that direct students to explore current popular uses of technology. In most cases, the first question requires the student to view one of the Making IT Work for You Web-delivered demonstrations and to respond to a series of related questions. The other question requires Web research. One objective of the Using Technology feature is to provide support for instructors who would prefer their students to view the Making IT Work for You videos on the Web rather than in class. The other objective is to provide a powerful tool to engage and motivate students by providing assignments related to technology that directly relates to them.

- **Expanding Your Knowledge** Every chapter has two Web-related end-of-chapter exercises directing students to enhance their depth of knowledge on specific technologies introduced in the chapter. In most cases, the first question requires the students to use their free Interactive Companion CD-ROM and to respond to a series of related questions. The second question requires Web research into carefully selected topics. One objective of the Expanding Your Knowledge feature is to provide support for instructors who want their students to effectively use the free Interactive CD-ROM. The other objective is to support instructors who want their students to obtain greater in-depth understanding of key technologies.



- **Building Your Portfolio** Every chapter has two Web-related end-of-chapter exercises directing students to prepare and to write a one-page paper on critical technology-related issues. The first question requires students to summarize and analyze select emerging technologies addressed in the chapter. The second question focuses on a critical chapter-related privacy, security, and/or ethical issue. Students are required to consider, evaluate, and formulate a position. One objective of the Building Your Portfolio feature is to support instructors who want their students to develop critical thinking and writing skills. Another objective is to provide support for instructors who want their students to create written document(s) recording their technology knowledge. A third objective is to provide support for instructors who want their students to recognize, understand, and analyze key privacy, security, and ethical issues relating to technology.



- **Engaging Students** Having all these features is one thing. Making the students aware of them is another. Like almost all textbooks, Chapter 1 of this textbook provides an overview and framework for the following chapters. Unlike other textbooks, this one also provides a discussion and overview of each of the above features. One objective of this approach is to support instructors who want to focus their students' attention on any one or on a combination of features. The other objective is to motivate students by highlighting features that are visually interesting and relevant to their lives.

Instructor's Guide

RESOURCES FOR INSTRUCTORS

We understand that, in today's teaching environment, offering a textbook alone is not sufficient to meet the needs of the many different instructors who use our books. To teach effectively, instructors must have a full complement of supplemental resources to assist them in every facet of teaching from preparing for class; to conducting and lecture; to assessing students' comprehension. *Computing Essentials 2004* offers a complete, fully integrated supplements package, as described below.

Instructor's Resource Kit

The Instructor's Resource Kit contains an updated CD-ROM containing the Instructor's Manual in both MS Word and PDF formats, PowerPoint slides, and Brownstone's Diploma test generation software with accompanying test item files for each chapter. The distinctive features of each component of the Instructor's Resource Kit are described below.

- **Instructor's Manual** The Instructor's Manual contains a schedule showing how much time is required to cover the material in the chapter, a list of the chapter competencies, tips for covering difficult material, and answers to the Concept Checks. Also included are references to corresponding topics on the Interactive Companion CD-ROM, answers to all the exercises in the Chapter Review section, and answers to the On the Web Exercises. The manual also includes a helpful introduction that explains the features, benefits, and suggested uses of the IM and an index of concepts and corresponding competencies.
- **PowerPoint Presentation** The PowerPoint presentation is designed to provide instructors with a comprehensive resource for use during lecture. It includes a review of key terms and definitions, figures from the text, along with several new illustrations, anticipated student questions with answers, and additional resources that can be accessed in Internet-enabled classrooms. Also included with the presentation are comprehensive speaker's notes.
- **Testbank** The *Computing Essentials 2004* edition testbank contains over 3,000 questions categorized by level of learning (definition, concept, and application). This is the same learning scheme that is introduced in the text to provide a valuable testing and reinforcement tool. The test questions are identified by text page number to assist you in planning your exams, and rationales for each answer are also included. Additional test questions, which can be used as pretests and posttests in class, can be found on the Online Learning Center, accessible through our Supersite **(www.mhhe.com/it).**

Making IT Work Video Series

Available on CD or the Web site, these videos provide cutting-edge context to help students learn the concepts presented in the text. This series of brief video presentations features the author and corresponds to specific Making IT Work for You topics from the text, making it a flexible tool for in-class and Web-delivered demonstrations while engaging students by presenting high-interest topics directly related to the concepts presented in the text. The series includes videos on

- *CD-R Drivers and Music from the Internet*
- *Creating a Personal Web Site*
- *Creating an Active Desktop*
- *Instant Messaging*
- *Locating Jobs Online*
- *Using TV Tuner Cards and Video Clips*
- *Virus Protection*

Interactive Companion CD-ROM

This free student CD-ROM, designed for use in class, in the lab, or at home by students and professors alike, includes a collection of interactive tutorial labs on some of the most popular topics in information technology. By combining video, interactive exercises, animation, additional content, and actual "lab" tutorials, we expand the reach and scope of the textbook.

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 (**www.pageout.net**).

Online Learning Centers—The Online Learning Center that accompanies *Computing Essentials* is accessible through our Information Technology Supersite (**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 (formally Real Education)

WebCT (a product of Universal Learning Technology)

O'Leary Series Applications Lab Manuals

Available separately, or packaged with *Computing Essentials,* is the O'Leary Series computer applications lab manuals for Microsoft Office. The O'Leary Series offers a step-by-step approach to developing computer applications skills and is available in both brief and introductory levels. The introductory level manuals are MOUS Certified and prepare students for the Microsoft Office User Certification Exam.

Skills Assessment

SimNet eXPert (Simulated Network Assessment Product)—SimNet provides a way for you to test students' software skills in a simulated environment. SimNet is available for Microsoft Office 97, Microsoft Office 2000, and Microsoft Office XP. SimNet provides flexibility for you in your course by offering

- Pretesting options
- Posttesting options
- Course placement testing
- Diagnostic capabilities to reinforce skills
- Proficiency testing to measure skills
- Web or LAN delivery of tests
- Computer-based training tutorials (new for Office XP)
- MOUS preparation exams
- Learning verification reports
- Spanish version

For more information on skills assessment software, please contact your local sales representative, or visit us at **www.mhhe.com/it.**

PowerWeb for Concepts

PowerWeb is an exciting new online product available for *Computing Essentials 2004.* 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. Visit PowerWeb at **www.dushkin.com/ powerweb.**

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Student's Guide

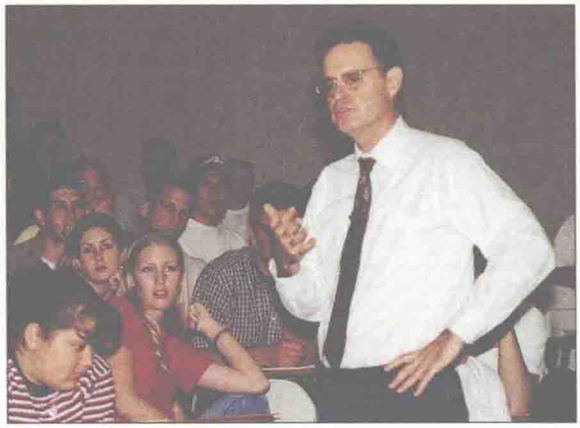
STUDENT'S GUIDE TO THE O'LEARY LEARNING SYSTEM

Recently, at the end of the semester, some of my students stopped by my office to say they enjoyed the class and that they "learned something that they could actually use." High praise indeed for a professor! Actually, I had mixed feelings. Of course, it felt good to learn that my students enjoyed the course. However, it hurt a bit that they were surprised that they learned something useful.

As you read the text, notice the "Tips" scattered throughout the book. These tips offer suggestions on a variety of topics from the basics of cleaning a monitor to how to make your computer run faster and smoother. Also, notice the "Making IT Work for You" sections that demonstrate some specific computer applications you might find interesting. For example, one demonstrates how to capture and use television video clips for electronic presentations and another shows how to capture, save, and play music from the Internet.

Here's my promise to you:
In the following pages you will find things that you can actually use now as well as that provide a foundation for understanding future technological advances.

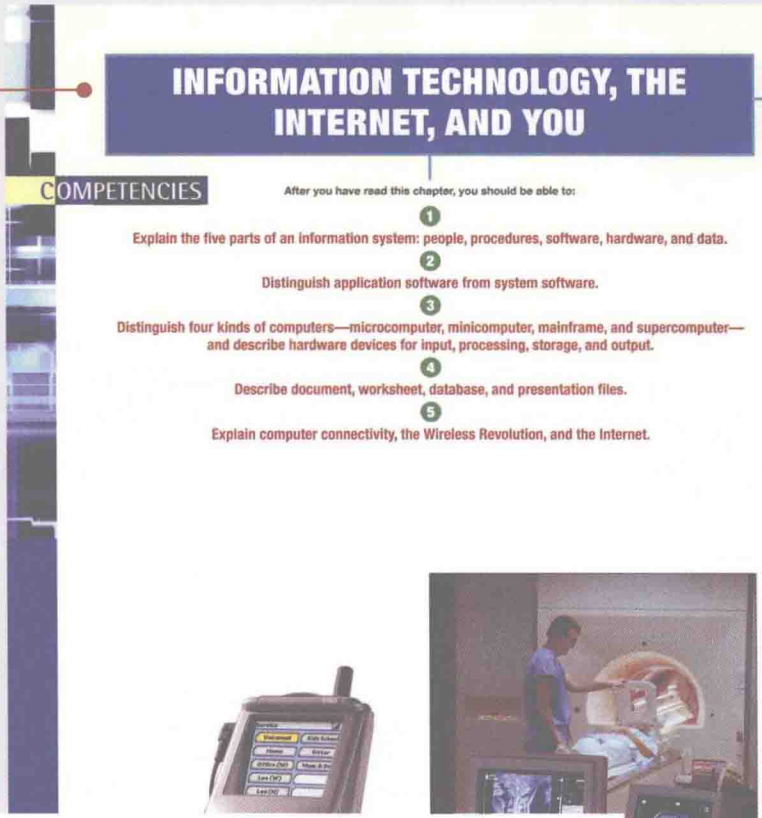
Many learning aids are built into the text to ensure your success with the material and to make the process of learning rewarding. In the pages that follow, we call your attention to the key features in the text. We also show you supplemental materials, such as the student Online Learning Center, that you should take advantage of to ensure your success in this course.



What makes Computing Essentials such a powerful text?

Visual Chapter Openers

Each chapter begins with a two-page opening spread that provides the Chapter Competencies and a brief opening text. Graphics present the structure and organization of the chapter visually, while the text discusses the topics that are covered in the chapter and their importance. The visual chapter openers engage students and provide relevancy and motivation.



INFORMATION TECHNOLOGY, THE INTERNET, AND YOU

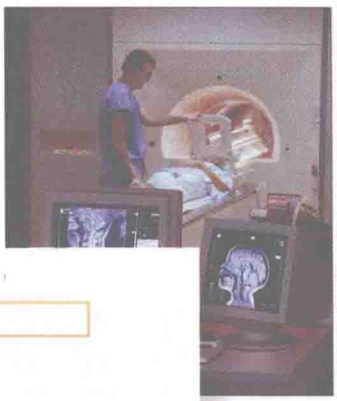
COMPETENCIES

After you have read this chapter, you should be able to:

1. Explain the five parts of an information system: people, procedures, software, hardware, and data.
2. Distinguish application software from system software.
3. Distinguish four kinds of computers—microcomputer, minicomputer, mainframe, and supercomputer—and describe hardware devices for input, processing, storage, and output.
4. Describe document, worksheet, database, and presentation files.
5. Explain computer connectivity, the Wireless Revolution, and the Internet.

Key Terms

Throughout the text, the most important terms are presented in bold type and are defined within the text. You will also find a list of key terms at the end of each chapter and in the glossary at the end of the book.



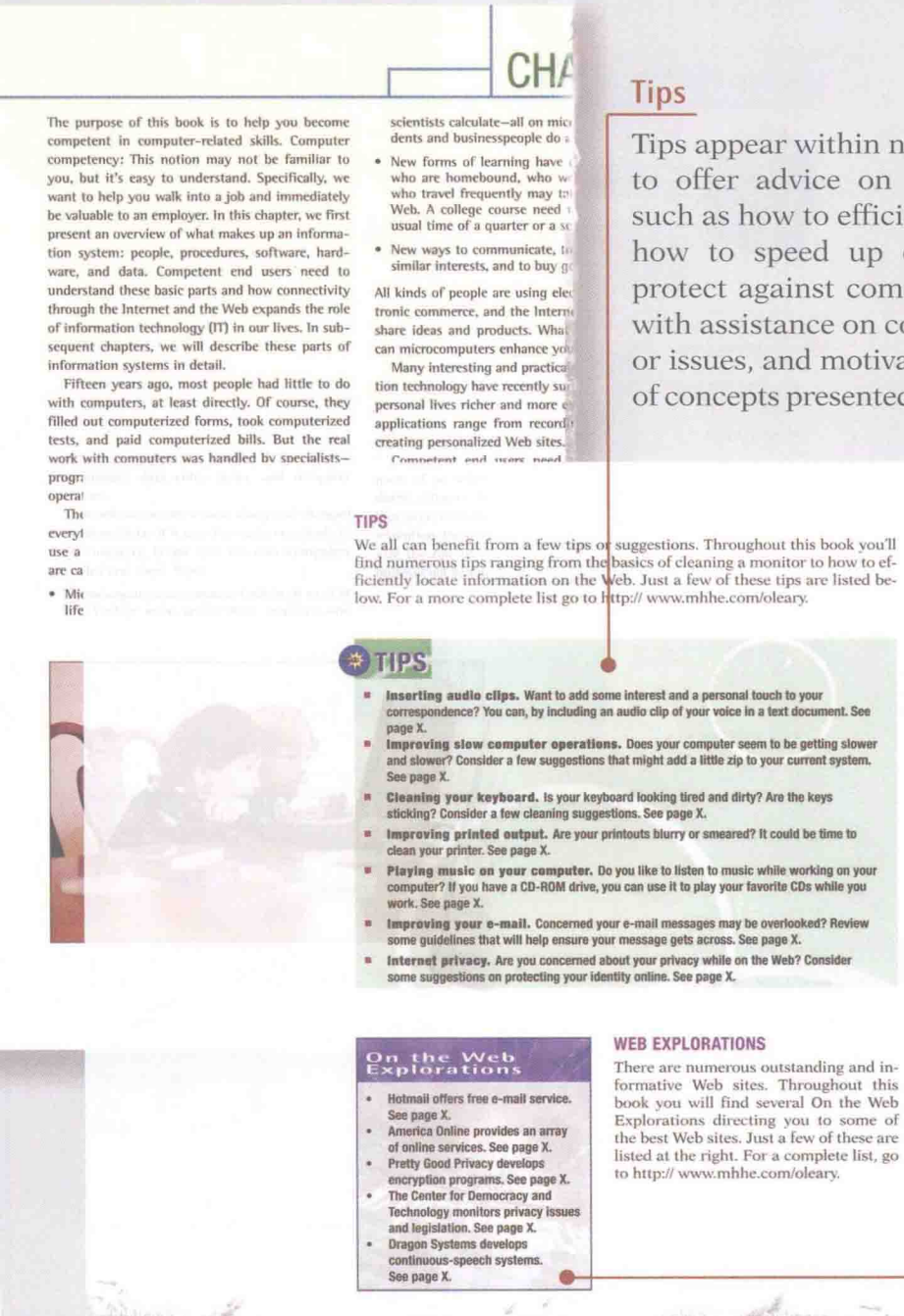
INFORMATION SYSTEMS

An information system has five parts: people, procedures, software, hardware, and data.

When you think of a microcomputer, perhaps you think of just the equipment itself. That is, you think of the monitor or the keyboard. Yet, there is more to it than that. The way to think about a microcomputer is as part of an information system. An information system has five parts: *people*, *procedures*, *software*, *hardware*, and *data*. (See Figure 1-1.)

- ***People:*** It is easy to overlook people as one of the five parts of a microcomputer system. Yet this is what microcomputers are all about—making **people, end users** like yourself, more productive.
- ***Procedures:*** The rules or guidelines people follow when using software, hardware, and data are **procedures.** Typically, these procedures are documented in manuals written by computer specialists. Software and hardware manufacturers provide manuals with their products.
- ***Software:*** A **program** consists of the step-by-step instructions that tell the computer how to do its work. **Software** is another name for a program or programs. The purpose of software is to convert **data** (unprocessed facts) into **information** (processed facts).
- ***Hardware:*** The equipment that processes the data to create information is called **hardware.** It includes the keyboard, mouse, monitor, system unit, and other devices. Hardware is controlled by software.

Computing Essentials is full of pedagogy that works together to help you truly understand the basics of computer concepts. On the following pages, you will see motivating, helpful features that engage students visually and challenge them intellectually, without creating "information overload."



CHA

The purpose of this book is to help you become competent in computer-related skills. Computer competency: This notion may not be familiar to you, but it's easy to understand. Specifically, we want to help you walk into a job and immediately be valuable to an employer. In this chapter, we first present an overview of what makes up an information system: people, procedures, software, hardware, and data. Competent end users need to understand these basic parts and how connectivity through the Internet and the Web expands the role of information technology (IT) in our lives. In subsequent chapters, we will describe these parts of information systems in detail.

Fifteen years ago, most people had little to do with computers, at least directly. Of course, they filled out computerized forms, took computerized tests, and paid computerized bills. But the real work with computers was handled by specialists—

scientists calculate—all on mic
dents and businesspeople do

- New forms of learning have
who are homebound, who w
who travel frequently may t
Web. A college course need
usual time of a quarter or a s
- New ways to communicate,
similar interests, and to buy g

All kinds of people are using ele
tronic commerce, and the Interr
share ideas and products. Wha
can microcomputers enhance yo

Many interesting and practica
tion technology have recently su
personal lives richer and more e
applications range from record
creating personalized Web sites.

TIPS

We all can benefit from a few tips or suggestions. Throughout this book you'll find numerous tips ranging from the basics of cleaning a monitor to how to efficiently locate information on the Web. Just a few of these tips are listed below. For a more complete list go to http:// www.mhhe.com/oleary.

TIPS

- **Inserting audio clips.** Want to add some interest and a personal touch to your correspondence? You can, by including an audio clip of your voice in a text document. See page X.
- **Improving slow computer operations.** Does your computer seem to be getting slower and slower? Consider a few suggestions that might add a little zip to your current system. See page X.
- **Cleaning your keyboard.** Is your keyboard looking tired and dirty? Are the keys sticking? Consider a few cleaning suggestions. See page X.
- **Improving printed output.** Are your printouts blurry or smeared? It could be time to clean your printer. See page X.
- **Playing music on your computer.** Do you like to listen to music while working on your computer? If you have a CD-ROM drive, you can use it to play your favorite CDs while you work. See page X.
- **Improving your e-mail.** Concerned your e-mail messages may be overlooked? Review some guidelines that will help ensure your message gets across. See page X.
- **Internet privacy.** Are you concerned about your privacy while on the Web? Consider some suggestions on protecting your identity online. See page X.

On the Web Explorations

- Hotmail offers free e-mail service. See page X.
- America Online provides an array of online services. See page X.
- Pretty Good Privacy develops encryption programs. See page X.
- The Center for Democracy and Technology monitors privacy issues and legislation. See page X.
- Dragon Systems develops continuous-speech systems. See page X.

WEB EXPLORATIONS

There are numerous outstanding and informative Web sites. Throughout this book you will find several On the Web Explorations directing you to some of the best Web sites. Just a few of these are listed at the right. For a complete list, go to http:// www.mhhe.com/oleary.

Tips

Tips appear within nearly every chapter and are provided to offer advice on a variety of chapter-related issues such as how to efficiently locate information on the Web, how to speed up computer operations, and how to protect against computer viruses. Tips provide students with assistance on common technology-related problems or issues, and motivate students by showing the relevance of concepts presented in the chapter to their everyday lives.

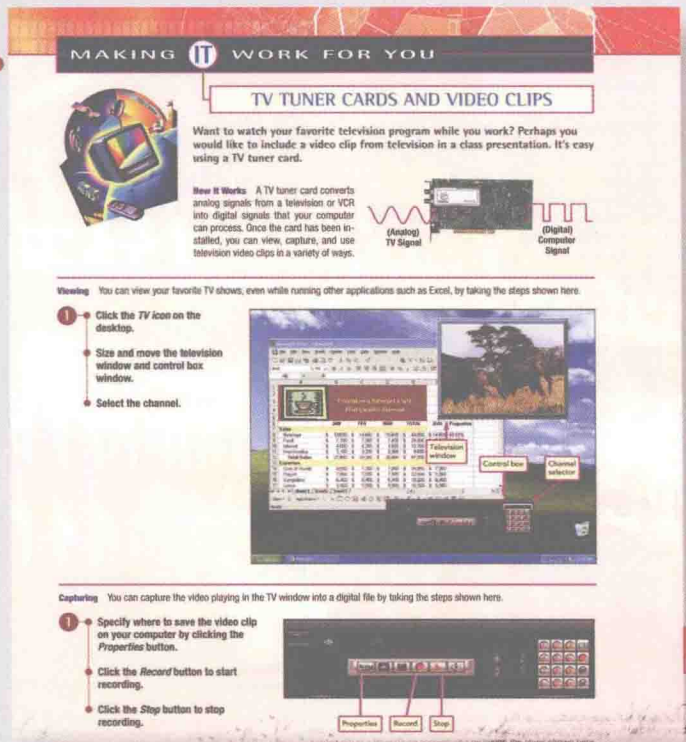
On the Web Explorations

Two or more On the Web Explorations appear within nearly every chapter and are presented as marginal elements. These explorations ask students to connect to carefully selected Web sites that provide additional information on key topics, encouraging students to expand their knowledge by using Web resources.

How does Computing Essentials get you involved in current technologies?

Making IT Work for You

Based on student surveys, ten special interest topics are presented in a two-page Making IT Work for you section within the chapter relating to that topic. These topics include downloading music from the Internet, creating personal Web sites, and using the Internet to search for employment opportunities. This feature engages students by presenting high-interest topics that directly relate to concepts presented in the chapter.


MAKING IT WORK FOR YOU

TV TUNER CARDS AND VIDEO CLIPS

Want to watch your favorite television program while you work? Perhaps you would like to include a video clip from television in a class presentation. It's easy using a TV tuner card.

How It Works A TV tuner card converts analog signals from a television or VCR into digital signals that your computer can process. Once the card has been installed, you can view, capture, and use television video clips in a variety of ways.

(Analog) TV Signal

(Digital) Computer Signal

Viewing You can view your favorite TV shows, even while running other applications such as Excel, by taking the steps shown here.

1. Click the *TV* icon on the desktop.
2. Size and move the television window and control box window.
3. Select the channel.

Television window

Control box

Channel selector

Capturing You can capture the video playing in the TV window into a digital file by taking the steps shown here.

1. Specify where to save the video clip on your computer by clicking the *Properties* button.
2. Click the *Record* button to start recording.
3. Click the *Stop* button to stop recording.

Properties Record Stop

1. Insert the video clip into a page in the presentation by clicking *Insert/Picture/From File.*

African Safaris

2. Click on the image of the inserted video clip anytime during your presentation to play it.

African Safaris

- Climb Mt. Kilimanjaro
- Hike Africa
- See Africa by Rail

Inserted video clip

TV tuner cards are relatively inexpensive and easy to install. Some factors limiting their performance on your computer are the speed of your processor, the amount of memory, and secondary storage capacity.

TV tuner cards are continually changing and some of the specifics presented in this Making IT Work for You may have changed. See our Web site at http://www.mhhe.com/oleary for possible changes and to learn more about this application of technology.

Demonstration Videos

Seven of the Making IT Work for You features have been expanded into video presentations available on the Web and on CD. The objective of these videos is to motivate students by expanding and animating the material in the book.

How does Computing Essentials keep you informed on emerging technologies? How does Computing Essentials reinforce key concepts?


Define connectivity.
What is the Internet?
A Look to the Future
Establishing Computer Competency
Computer competency is concerned with understanding the rules and the power of microcomputers. Competency lets you take advantage of increasingly productive software, hardware, and the connectivity revolution that are expanding the microcomputer's capabilities.
The purpose of this book is to help you be computer competent not only in the present but also in the future. Having competency requires your having the knowledge and understanding of the rules and the power of the microcomputer. This will enable you to benefit from three important information technology developments: more powerful software, more powerful hardware, and connectivity to outside information resources. It will also help you remain computer competent and continue to learn in the future.
POWERFUL SOFTWARE
POWERFUL HARDWARE
Microcomputers are now much more powerful than they used to be. Indeed, the newer models have the speed and power of room-size computers of only a few years ago. However, despite the rapid change of specific equipment, their essential features remain unchanged. Thus, the competent end user should focus on these features. Chapters 4 through 6 explain what you need to know about hardware: the central processing unit, input/output devices, and secondary storage. A Buyer's Guide and an Upgrader's Guide are presented at the end of this book for those considering the purchase or upgrade of a microcomputer system.
CONNECTIVITY, THE INTERNET, AND THE WEB
No longer are microcomputers and competent end users bound by the surface of the desk. Now they can reach past the desk and link with other computers to share data, programs, and information. The Internet
VISUAL SUMMARY
INFORMATION TECHNOLOGY, THE INTERNET, AND YOU
INFORMATION SYSTEMS
PEOPLE
People are the most important part of an information system. People are touched hundreds of times daily by computers.
Some examples of how information technology can work for you:
Entertainment
Business
The way to think about a microcomputer is to realize that it is one part of an information system.
Five parts of an information system:
1. People are obviously the essential part of the system! The purpose of information systems is to make people, or end users like you, more productive.
2. Procedures are rules or guidelines to follow when using software, hardware, and data. They are typically documented in manuals written by computer professionals.
3. Software (programs) provides step-by-step instructions to control the computer to convert data into information.
4. Hardware consists of the physical equipment. It is controlled by software and processes data to create information.
5. Data consists of unprocessed facts including text, numbers, images, and sound. Information is data that has been processed by the computer.
Connectivity is an additional part to today's information systems. It allows computers to connect and share information. To achieve computer competency, end users need to understand information technology (IT).
PROCEDURES
Procedures are the rules or guidelines people follow when using software, hardware, and data. These procedures are usually documented in manuals provided by manufacturers with their products.
• Presentation graphics to communicate or persuade.
• Secondary storage devices store data and programs. Typical media include floppy, hard, and optical disks. Two types of optical disks are compact discs (CDs) and digital versatile (or video) discs (DVDs).

A Look to the Future

Each chapter concludes with a brief discussion of a specific recent technological advance related to chapter material, reminding students of the importance of staying informed.

Visual Chapter Summaries

These appear in at least two pages at the end of each chapter. Like the chapter openers, the summaries use graphics to present the structure of the chapter and text to provide specifics. Using a columnar arrangement, major concepts are represented by graphics followed by detailed text summaries, providing a detailed summary of key concepts and terms in an engaging and meaningful way.

How does Computing Essentials allow you to assess what you've learned in each chapter?

Chapter Review

Following the Visual Summary, the chapter review includes material designed to review and reinforce chapter content. It includes a

Key Terms List

Multiple Choice

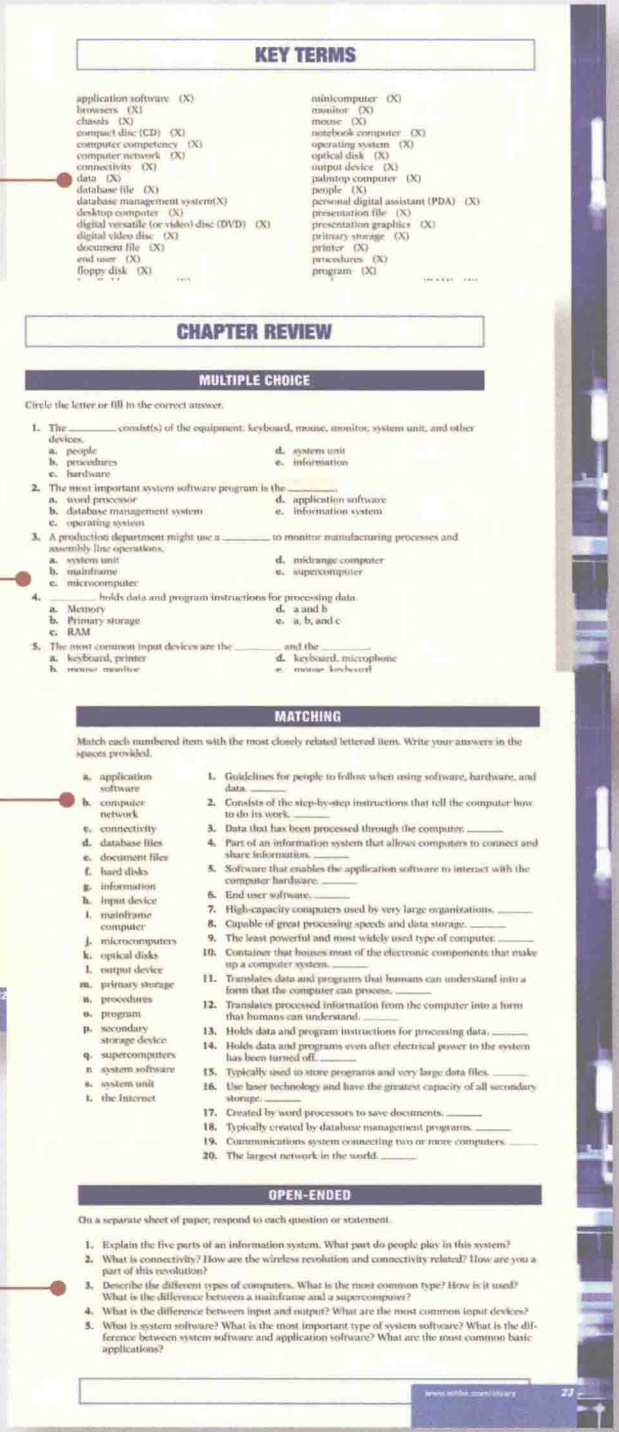
to help test your recall of information presented in the chapter,

Matching

to test your recall of terminology presented in the chapter, and

Open-Ended

questions to help review your understanding of the key concepts presented in the chapter.



KEY TERMS

application software (X)
browsers (X)
chassis (X)
compact disc (CD) (X)
computer competency (X)
computer network (X)
connectivity (X)
data (X)
database file (X)
database management system(X)
desktop computer (X)
digital versatile (or video) disc (DVD) (X)
digital video disc (X)
document file (X)
end user (X)
floppy disk (X)
minicomputer (X)
monitor (X)
mouse (X)
notebook computer (X)
operating system (X)
optical disk (X)
output device (X)
palmtop computer (X)
people (X)
personal digital assistant (PDA) (X)
presentation file (X)
presentation graphics (X)
primary storage (X)
printer (X)
procedures (X)
program (X)

CHAPTER REVIEW

MULTIPLE CHOICE

Circle the letter or fill in the correct answer.

1. The _____ consist(s) of the equipment: keyboard, mouse, monitor, system unit, and other devices.
   a. people
   b. procedures
   c. hardware
   d. system unit
   e. information
2. The most important system software program is the _____.
   a. word processor
   b. database management system
   c. operating system
   d. application software
   e. information system
3. A production department might use a _____ to monitor manufacturing processes and assembly line operations.
   a. system unit
   b. mainframe
   c. microcomputer
   d. midrange computer
   e. supercomputer
4. _____ holds data and program instructions for processing data.
   a. Memory
   b. Primary storage
   c. RAM
   d. a and b
   e. a, b, and c
5. The most common input devices are the _____ and the _____.
   a. keyboard, printer
   b. mouse, monitor
   d. keyboard, microphone
   e. mouse, keyboard

MATCHING

Match each numbered item with the most closely related lettered item. Write your answers in the spaces provided.

a. application software
b. computer network
c. connectivity
d. database files
e. document files
f. hard disks
g. information
h. input device
i. mainframe computer
j. microcomputers
k. optical disks
l. output device
m. primary storage
n. procedures
o. program
p. secondary storage device
q. supercomputers
r. system software
s. system unit
t. the Internet

1. Guidelines for people to follow when using software, hardware, and data. _____
2. Consists of the step-by-step instructions that tell the computer how to do its work. _____
3. Data that has been processed through the computer. _____
4. Part of an information system that allows computers to connect and share information. _____
5. Software that enables the application software to interact with the computer hardware. _____
6. End user software. _____
7. High-capacity computers used by very large organizations. _____
8. Capable of great processing speeds and data storage. _____
9. The least powerful and most widely used type of computer. _____
10. Container that houses most of the electronic components that make up a computer system. _____
11. Translates data and programs that humans can understand into a form that the computer can process. _____
12. Translates processed information from the computer into a form that humans can understand. _____
13. Holds data and program instructions for processing data. _____
14. Holds data and programs even after electrical power to the system has been turned off. _____
15. Typically used to store programs and very large data files. _____
16. Use laser technology and have the greatest capacity of all secondary storage. _____
17. Created by word processors to save documents. _____
18. Typically created by database management programs. _____
19. Communications system connecting two or more computers. _____
20. The largest network in the world. _____

OPEN-ENDED

On a separate sheet of paper, respond to each question or statement.

1. Explain the five parts of an information system. What part do people play in this system?
2. What is connectivity? How are the wireless revolution and connectivity related? How are you a part of this revolution?
3. Describe the different types of computers. What is the most common type? How is it used? What is the difference between a mainframe and a supercomputer?
4. What is the difference between input and output? What are the most common input devices?
5. What is system software? What is the most important type of system software? What is the difference between system software and application software? What are the most common basic applications?

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