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computing ESSENTIALS

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○ COMPLETE EDITION

Computing Essentials

2005

Complete Edition

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Computing Essentials 2005 Complete 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* 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, both in terms of 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 upstate New York, 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* is no exception.

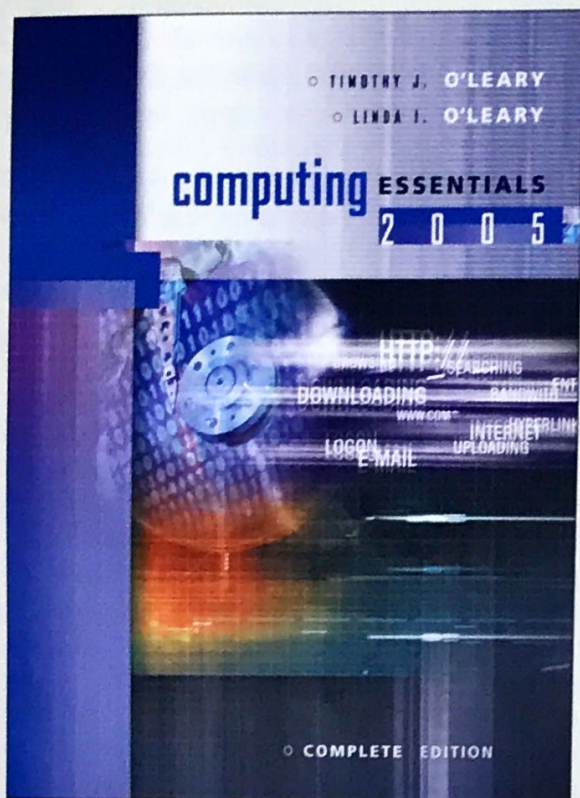
A WORD FROM THE AUTHORS

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 BOOK

- **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 many of the chapters, 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.

On the Web Explorations

Dragon Soft is a leader in developing continuous-speech systems. To learn more about the company, visit our Web site at

<http://www.mhhe.com/oleary/CE05> and select On the Web Explorations from Tim's Toolbox.

- **Tips** Within many of the chapters, 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.



TIPS

Have you used the Internet? If so, then you probably already know how to use a browser. For those of you who do not, here are a few tips to get you started.

- 1 **Start browser.** Typically, all you need to do is double-click the browser's icon on the desktop.
- 2 **Enter URL.** In the browser's location box, type the URL (uniform resource locator, or address) of the Internet or Web location (site) that you want to visit.
- 3 **Press ENTER.** On your keyboard, press the ENTER key to connect to the site.
- 4 **Read and explore.** Once connected to the site, read the information displayed on your monitor. Using the mouse, move the pointer on the monitor.

- **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.

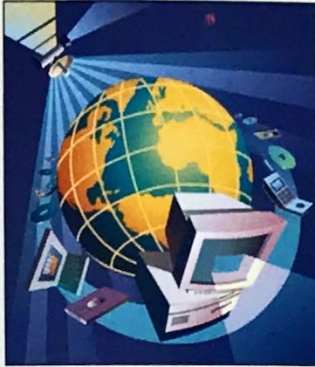
Concept Check



What is an information system?

What is required of a competent end user?

- **Making IT Work for You** Based on student surveys, 10 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 10 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.



- **Making IT Work Video Series** Based on student interest and chapter content, several Making IT Work for You special interest topics have been selected for special attention. Seven short videos bring these selected topics to life. These videos are available on the student Computing Essentials CD and at the course Web site. One objective of this feature is to motivate students by animating and extending the 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.
- **Using IT at DVD Direct** Many students find information systems concepts to be very challenging. A series of four cases focused on DVD Direct, a factious Web-based movie rental company, have been created. The cases are referenced at the end of Chapters 11, 12, 13, and 14. Students can view the case from their Computing Essentials CD or from the text's Web site. The cases have been written to allow instructors to skip all or some of the cases without losing continuity. The objective of the cases is

to engage students in an interesting current application of technology and to demonstrate the relevance and importance of information systems, databases, systems analysis and design, and programming.

- **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 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. Other questions require Web research. The objective of the Using Technology feature 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 end-of-chapter exercises directing students to enhance their depth of knowledge on specific technologies introduced in the chapter. In most cases, those questions require the students to use either their free Computing Essentials CD and/or the O'Leary Web site to respond to a series of related questions. 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. 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 end-of-chapter exercises directing students to prepare and to write a one- or two-page paper on critical technology-related issues. One question requires students to summarize and analyze select emerging technologies addressed in the chapter. Another 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.



- **Free Integrated and Interactive CD** The Computing Essentials CD contains a variety of materials custom designed to support the text. These materials include animations, videos, expansion text, descriptions of select IT careers, and much more. The CD content is also available from the text's Web site. Every chapter includes direct and specific references to the CD. The objective of the CD is to support instructors with materials to customize or focus their courses in a variety of different ways. It also provides students with a free, fast, and rich resource of materials that is not dependent upon a fast Internet connection.

- **Tim's Toolbox** Throughout the pages of the text you will see specific references to Tim's Toolbox. It is a metaphor representing the complete collection of student resources available from the student's Computing Essentials CD and from the text's Web site at www.mhhe.com/oleary/CE05. The objective of Tim's Toolbox is to provide a simple, consistent, and intuitive interface and menu structure to resources provided at both locations.

- **Engaging Students** Having all these features is one thing. Making the students aware of them is another. Like in almost all textbooks, Chapter 1 of this textbook provides an overview and framework for the following chapters. Unlike other textbooks, our Chapter 1 also provides a discussion and overview of each of the above engaging 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.