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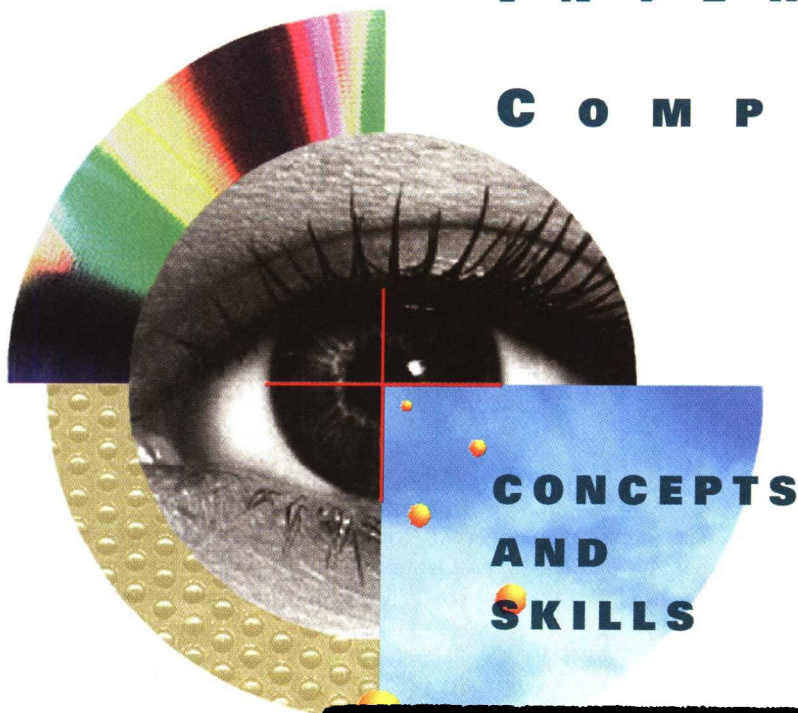
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K E N N E T H C . L A U D O N

INTERACTIVE COMPUTING



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藏书章

KENNETH C. LAUDON

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Interactive Computing: Concepts and Skills

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Interactive Computing: Concepts and Skills provides undergraduate college students with a comprehensive, multimedia, interactive introduction to computer concepts and to major microcomputer application software, such as word processing, spreadsheet, database, and telecommunications packages. The package provides students with the conceptual understanding and software skills required in today's job market.

Interactive Computing: Concepts and Skills reflects the central educational themes on college campuses: interactive tools that engage student interest; an integrated approach to education using the latest in multimedia technology to stimulate all learning skills; an activist pedagogy, which gives the student an important role in education; a focus on skill development; and contemporary, real-world examples that illustrate the social and organizational changes brought about by the widespread deployment of information technologies.

Interactive Computing: Concepts and Skills is delivered on an entirely unique platform: interactive multimedia CD ROMs plus a textbook. This work is one of the first multimedia software and computer concepts learning packages in today's marketplace. Students will be able to use these packages to learn faster, deeper, and with greater retention than with traditional learning tools.

FEATURES

Interactive Computing: Concepts and Skills has the potential to greatly change the teaching of computer concepts and software tools because of the following unique features.

Interactivity

This package achieves the highest levels of interactivity possible with today's technology by making extensive use of simulated virtual environments, games, interactive quizzes, and on-screen drag-and-drop capabilities to teach basic concepts and skills. High levels of interactivity lengthen student attention spans, accelerate learning time, and enhance retention because of the highly visual nature of the learning experience. Virtual software environments give students precise and immediate feedback on their work.

The Interactive Program contains a computer-managed interactive quiz and test materials that can be automatically graded.

Integration

People learn in different ways. Some will benefit most from a visual approach; others will want a textbook to back up what they see on screen. This package integrates multimedia educational learning on CD ROMs with a textbook. Although either CD or the text can be used alone, together they form a powerful integrated package that can be used anywhere.

Multimedia and Visual Approach

The CD ROM interactive programs use text, sound, video, animations, and simulations of key concepts, software tools, and computing hardware. The textbook is designed to accompany the multimedia program and also to provide a visually rich learning environment. The visual and sound orientation possible with multimedia will greatly increase the educational value of this product by making it possible for students to visualize complex and abstract concepts.

Activist Critical-Thinking Pedagogy

Interactive Computing: Concepts and Skills encourages students to think. Throughout the text students are challenged to answer questions, to think about statements, and to work with others to solve problems. Exercises in both the textbook and the CD ROM interactive programs demand that students take an active role in solving problems, thinking about them in new and novel ways, and participating in their solutions.

A problem-solving and critical-thinking approach is emphasized throughout to enhance student attention and thinking. Writing and presentation skills—a broadly based teaching across the curriculum approach—are emphasized through the discussion of basic skills in each chapter. Group work is emphasized with ample opportunity for small groups to work together on projects and to solve software cases and problems.

The program provides a multithreaded learning environment permitting students to learn in multiple ways at their own pace and permitting instructors to emphasize different teaching materials appropriate to their audience. This ensures high pedagogical adaptability to local needs, and it will also appeal to students with differing learning modes.

Skills Orientation

Employers recruit students who have software and conceptual skills and the ability to write and reason about how information technology can be used in a variety of organizational settings. *Interactive Computing: Concepts and Skills* teaches students both how to use the software and how to apply the software to solve problems. Each of the software tools contains a problem-solving set of problems and cases.

Real-World Social and Organizational Impacts

A knowledge of technology is not enough for today's students. They should also understand how information technologies—including computers—change the nature of social and cultural life. The book and the CD ROM interactive programs are organized around three social and organizational themes that permeate the entire product. Information technologies offer students *new choices* in how they will work and live, they offer *new opportunities* for careers and jobs, and they offer *new ways of connecting* to other institutions and each other. The themes of choices, opportunities, and connections are illustrated with real-world examples throughout the text and the CD ROM programs. The combination of text and CD ROM presents the potential to deliver a vast amount of information and knowledge, such as magazine articles, news clips, stories, equipment specifications, and cases, that could not be delivered with a book alone.

Flexibility

Interactive Computing: Concepts and Skills is a learning system that can be operated on local networks, on stand-alone lab machines, or on home machines that are suitably equipped. The package permits professors to choose various combinations of software tools suitable to the local environment and to adjust the weight given computer concepts versus software skills. In addition, the program plus textbook gives students the flexibility to choose how they want to learn.

HOW THE PACKAGE WORKS

The *Interactive Computing: Concepts and Skills* package is composed of a textbook and two CD ROMs. The concepts material is presented in the textbook and on the accompanying *Concepts CD ROM*. The software skills are presented on the *Software Skills CD ROM*.

We designed the concepts material presented on the Concepts CD ROM and in the textbook to be stand-alone learning packages. Each has its own integrity. Yet our class tests have found they form a far more effective educational tool when used together. Why? Why are textbooks still needed?

Textbooks continue to be powerful educational tools. First, there are many times when students do not have access to a computer, want to learn, and can make effective use of a book. Second, a CD is large and complex enough that a printed guide to the material—such as the textbook—can be very helpful for students just starting out. Third, some material—large text files, for instance—can often best be absorbed in book form. We wanted the book to focus on what books are good at: concise summary text, lists, essays, key terms, pedagogical elements (review questions, discussion questions, exercises), and illustrations. We believe the combination of a book and CD ROM makes a great deal of sense for the concepts material.

The Concepts CD ROM interactive program focuses on what multimedia software is good at: showing how things work with videos, animations, audio, pictures, and human voice-overs. Text also can be used effectively in multimedia. Above all, the CD program is interactive: students can never become inattentive because the program requires continual intervention by the user to proceed. Interactivity occurs at three levels: click text and animations, user inputs, and problem-solving exercises.

The Software Skills CD ROM provides an interactive environment in which students can learn important software applications, such as Excel, Lotus, Access, Word, and Win 3.1 or Win 95. Our class tests have shown that it is better for students to learn in the software environment on-screen than just from book pages. Students find they learn faster and more naturally. Generally, students expect they will need access to a computer to learn computer applications, and they find it quite natural to learn software skills using a computer rather than a book. But for students and professors who still want a textbook to guide them through the software skills, there are numerous McGraw-Hill software tutorials that can be bundled with the Software Skills CD ROM. Check with your McGraw-Hill representative about this.

The Book Contents

The book contains nine chapters, which correspond to the chapters in the interactive Concepts CD program. The function of the book is to act (a) as a quick overview of the Concepts material in the course, (b) as a learning tool that can be used on trains, airplanes, and wherever a computer is not available, and (c) as a study guide to the entire package. The chapters of the textbook are shown below. Every effort was made to keep the book short, concise, and highly readable.

Introduction:

Chapter 1 Computers in a Changing World

Chapter 2 Basic Software Tools

Computer concepts:

Chapter 3 How Computer Systems Work

Chapter 4 Storing Digital Information

Chapter 5 Digital Telecommunications

Applications of information technology:

Chapter 6 Advanced Software Applications

Chapter 7 Information Systems in the Workplace

The information age:

Chapter 8 Solving Problems with Information Systems

Chapter 9 Ethical and Social Impacts of Information Systems

Each of the chapters follows a common format. Each chapter opens with a real-world vignette describing how organizations and people use information technology. The main body of text contains one or several vignettes describing how information technologies present students with new choices and opportunities and with new ways of communicating with others. Each chapter concludes with a concise visual summary, review questions, and group-based discussion questions. The last few pages in each text chapter describe the contents of the Concepts CD ROM interactive program.

How the CD ROM Interactive Program Works

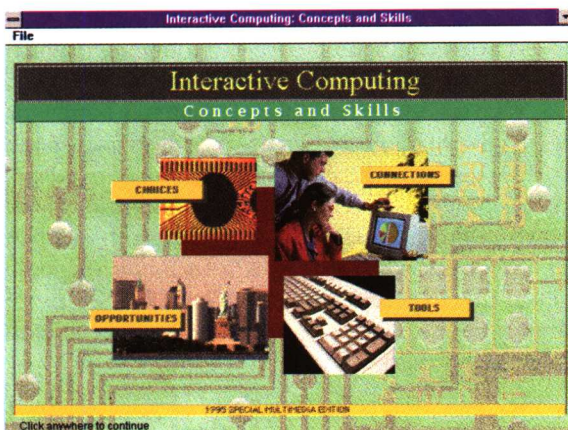


Figure 1

The interactive program has four underlying themes, which can be found throughout the book and the CD ROM program: choices, opportunities, connections, and tools. Figure 1 shows these themes as they appear on the opening screen of the CD program. Information technology—computer hardware and software, telecommunications—is portrayed as offering students new choices, new opportunities, connections to other people and institutions, and the challenge of learning new tools.

The function of the CD ROMs is to provide an interactive learning environment and an educational experience. The Concepts CD ROM goes into greater depth than the textbook in illustrating and explaining concepts by showing students visually how concepts

work out in practice. In the case of software, students experience in the Software Skills CD ROM a visual simulation of the actual software, and they are presented a virtual software reality in which they can interact with the software (even though they are actually working in a simulated environment). The CD uses animations, simulations, video, and audio to provide students a multisensory experience.



Figure 2

Figure 1 shows the opening screen of the CD ROM interactive program. The interactive program is divided into two parts: *Concepts* and *Skills*. The Concepts section of the program covers the basic knowledge that students need to know in order to understand how information technology (including computers and telecommunications) works and how it is used by real-world organizations. The Concepts section conveys this knowledge by using simulations, animations, text, videos, and interactive exercises. It also includes a tutorial for Windows 3.1.

The Software Skills section of the program provides basic and intermediate level instruction in widely used software tools. Figure 2 shows that *Interactive Computing* covers Microsoft Windows 3.1, Excel, Lotus 1-2-3, Word, and Access. Other software tool modules can be custom fit to teach the software used on any particular campus, such as Internet (Netscape), Windows 95, Microsoft Office 95, and other popular software tools. A table of contents for the Excel module is shown in Figure 3. Most of the software skills modules contain four to five lessons, each with 10–16 sessions as required to learn basic and intermediate skills.



Figure 3

The student works through the interactive program by using a very simple control panel which contains a help button, a digital glossary/index to all concepts and skills in the text and in the CDs, a back arrow and a forward arrow, and a Navigational star, which returns the user to the previous level. When used in the classroom or on a student's computer, a pause button stops the program instantly. From this point the instructor or student can move into the real software tool under Windows, practice skills, and then return to the instructional program. A more detailed description of how the text and CDs work together can be found at the end of Chapter 1 and, by pressing the Digital Tour button, on the CD ROMs.

If you would like to receive more information about this interactive multimedia package or download demonstration modules of the interactive software, visit our World Wide Web site at <http://mgh.willamette.edu/mgh/> and click on the Interactive Computing icon.

ACKNOWLEDGMENTS

Unlike a traditional textbook, which a single author or two authors can create in its entirety, a multimedia project requires a large team of writers, programmers,

multimedia designers, artists, and, of course, editors and publishers. Many people contributed directly to this work.

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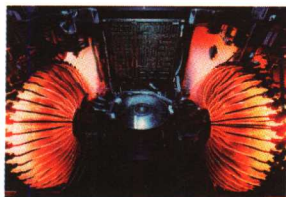
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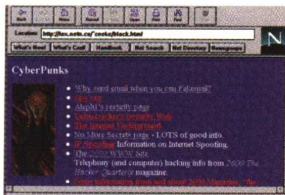
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