

Discovering Computers 2003 Chapter 11 Objectives

Concepts for a Digital World
Web and XP Enhanced

- Understand that computers have made a tremendous difference in daily living
- Explain how computers are used at home
- Describe how computers change the way society interacts with disciplines such as education, entertainment, finance, government, health care, science, publishing, and travel
- Recognize the issues associated with the digital divide
- Understand how e-commerce affects the way people conduct business
- Identify ways virtual reality, intelligent agents, and robots are being used in daily life
- Learn how to prevent health-related disorders and injuries due to computer use
- Understand how to design a workspace ergonomically
- Recognize symptoms of computer addiction
- Explain green computing
- Understand ethical issues surrounding computer use

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How has society benefited from computers?

- 1/3 of economic growth attributed to digital technologies
- Users can make well-informed decisions due to instant access to information from anywhere
- Students have more tools to assist them in learning process

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How are computers used at home?

- entertainment
- research and education
- budgeting, personal financial management, and home business management
- Web access
- personal and business communications

Next p.11.3 Fig. 11-2

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What is the main reason computers have infiltrated homes?

- Web-based news, research
- Distance education
- Entertainment and leisure
- Online shopping
- Download and listen to music
- Communicate with others around the world
- Bank and invest
- Download and watch movies

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How have computers changed home communications?

- Transmit text, voice, sounds, video, and graphics over Web

Next p.11.4 Fig. 11-3


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What is the purpose of videoconferencing software?

- Have live conversations with others



PC camera

picture of person he is talking to

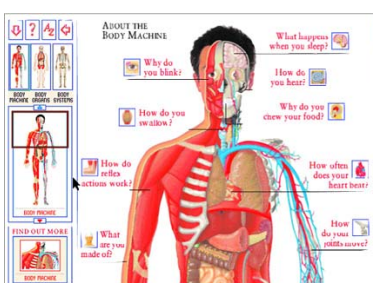
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What is computer-based training (CBT)?

- Learn by using computers with instructional software
- Also called computer-aided instruction (CAI)
- Web-based training (WBT) uses Internet technology

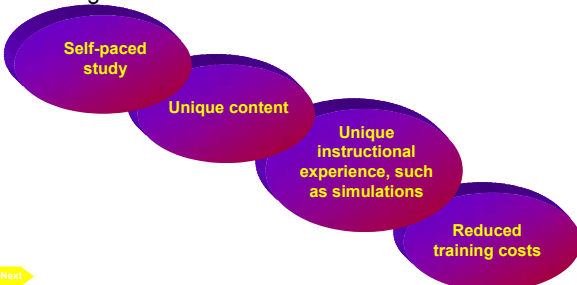


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What are the advantages of CBT over traditional training?



Self-paced study

Unique content

Unique instructional experience, such as simulations

Reduced training costs

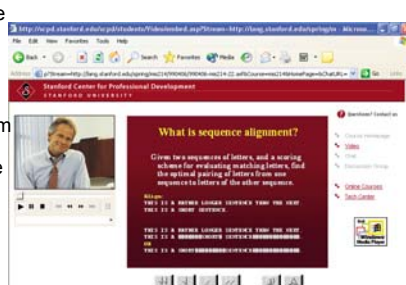
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What is distance learning (DL)?

- Delivery at one location and learning at another
- Most colleges offer some form of distance learning; some include degrees



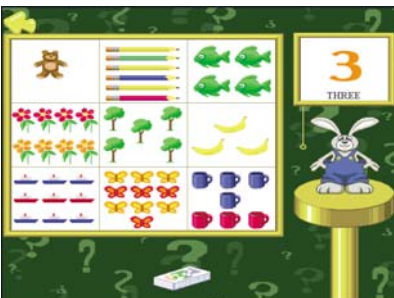
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What is edutainment?

- Type of educational software combining education with entertainment




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Living with Computers

What are effects of the digital divide?

- Separates the haves from the have nots



Haves (have access to technology and have the ability to use it)	Have Nots (do not have access to technology or do not have the ability to use it)
<ul style="list-style-type: none">• Cities• Educated people• Upper income families• More industrially developed nations• Nonminority neighborhoods• People without disabilities	<ul style="list-style-type: none">• Rural areas• Uneducated people• Lower income families• Less industrially developed nations• Minority neighborhoods• People with disabilities


Next
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What music and video options are available on a computer for entertainment?

- Play CDs or DVDs
- Online radio
- Purchase on Web and download to hard disk

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How are computers used to manage finances?

- Balance your checkbook, pay bills, track personal income and expenses, track investments, and evaluate financial plans

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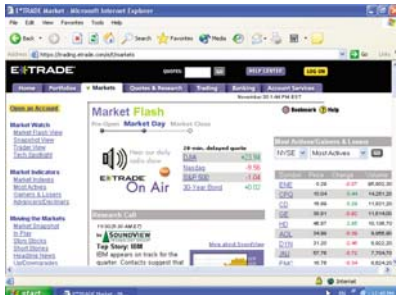


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What is online stock trading?

- Buy and sell stocks online without using a broker
- Organize investments
- Set up alerts

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How does the government use computers?

- Government Web sites provide citizens with up-to-date information

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How do government employees use computers as part of their daily routine?

- 911 call center
- Police have online access to FBI Center (NCIC) via police cars equipped with computers and fingerprint scanners

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What are other uses of computers in government?

- Government Web sites allow you to
 - file taxes
 - apply for permits and licenses
 - pay parking tickets

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Living with Computers

How are computers used in health care?

- Maintain and share records
- Monitor patient's vital signs
- Assist in research and diagnosis
- File insurance claims
- Conduct medical tests
- Communicate with patients
- Surgically implant computerized devices
- Assist in operations with computer-controlled devices
- Aid in surgery

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Living with Computers

How can the computer and the Web aid patients?

- Provide up-to-date medical, fitness, nutrition, or exercise information
- Access databases of doctors and dentists
- Talk to others diagnosed with similar conditions using chat rooms
- Order prescriptions online

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Living with Computers

How can a computer aid in fitness?

- Exercise equipment often has a built-in computer to
 - track progress
 - monitor physical conditions
 - heart rate
 - pulse

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Living with Computers

How do scientists use computers?

- Help them collect, analyze, and model data
- Use Internet to communicate with colleagues around world

Next
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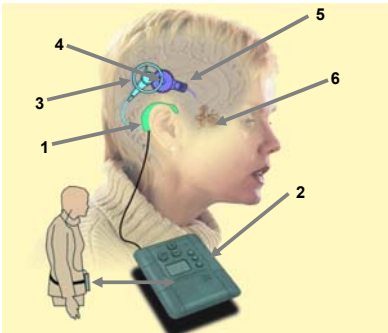
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Living with Computers

A cochlear implant (chip) allows deaf person to hear

1. Microphone picks up sound and carries it to computer
2. Computer digitizes sound
3. Coil carries signals to implant
4. Implant delivers electrical energy to electrodes in cochlea
5. Electrodes stimulate auditory nerve fibers
6. Auditory nerve sends sound information to brain

Next
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Living with Computers

What is an electronic book (e-book)?

- Some Web sites allow you to download entire book to your computer
- Cost is about the same or less than cost of purchasing print version

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Living with Computers

What are features of global positioning system (GPS) in your car?

- Provide directions
- Make reservations
- Track stolen vehicle
- Honk horn
- Unlock door
- Perform remote diagnostics
- Automatically call for help in emergency
- Dispatch roadside assistance

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Living with Computers

What online services are available for car buyers?

- Shop online for a car
- Obtain loans, leases, insurance, and warranties
- Sell a used car

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Living with Computers

What are reasons to telecommute?

- Reduce time and expense spent in traveling to office
- Eliminate travel during unsafe weather conditions
- Allow flexible work schedule
- Provide convenient, comfortable work environment
- Advantages
 - Higher job satisfaction rates
 - More productive workers
 - Reduction in employer overhead
 - Healthy for environment

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Emerging Technologies

What is virtual reality (VR)?

- Use of computers to simulate real or imagined environment that appears as three-dimensional (3-D) space
- Used for games, training, engineering, e-commerce, science, and medicine

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Emerging Technologies

How is the experience of a simulated environment sometimes enhanced?

- Software requires you to wear specialized headgear, body suits, and gloves
- Headgear displays artificial environment in front of both eyes

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Emerging Technologies

What is artificial intelligence?

- Application of human intelligence to computers
- Can sense actions and, based on logical assumptions and prior experience, take appropriate action to complete task

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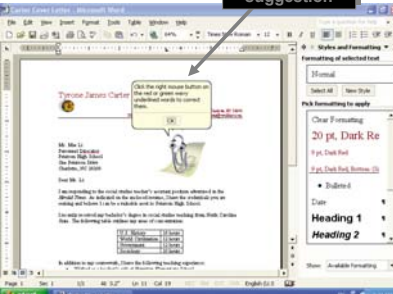
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Emerging Technologies

What is an intelligent agent?

- Any software that independently asks questions, pays attention to work patterns, and carries out tasks on behalf of user

intelligent agent offers a suggestion



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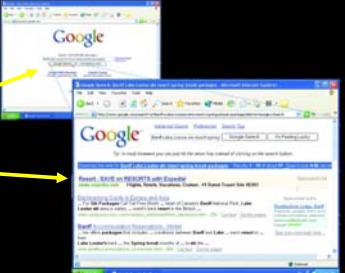
Emerging Technologies

What is a network agent?

- Sophisticated type of intelligent agent that performs tasks on remote computers before bringing results back to user
- Sometimes called a bot

Google search engine

results of search




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Emerging Technologies

What is a robot?

- Computer-controlled device that moves and reacts to feedback from outside world




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A Healthy Work Environment

What are areas of concern for a healthy work environment?

- Long-time computer use can lead to health complications



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A Healthy Work Environment

What precautions can reduce the chance of developing tendonitis or carpal tunnel syndrome?

- Take frequent breaks during computer session
- Use wrist rest
- Exercise hands and arms
- Minimize number of times you switch between mouse and keyboard

Hand Exercises



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A Healthy Work Environment

How can you ease eyestrain when working at the computer?

- Every 10 to 15 minutes, take an eye break.
 - Look into the distance and focus on an object for 20 to 30 seconds.
 - Roll your eyes in a complete circle.
 - Close your eyes and rest them for at least a minute.
- Blink your eyes every five seconds.
- Place your monitor about an arm's length away from your eyes with the top of the screen at eye level or below.
- Use a glare screen.
- Use large fonts.
- If you wear glasses, ask your doctor for computer glasses.
- Adjust the lighting.

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A Healthy Work Environment

What is **ergonomics**?

- Applied science devoted to comfort, efficiency, and safety in workplace

elbows at 90° and arms and hands parallel to floor


keyboard height: 23" to 28"

adjustable backrest

adjustable seat

adjustable height chair with 5 legs for stability

feet flat on floor



18-28"
20"

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p.11.32 Fig. 11-43

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A Healthy Work Environment

What is **computer addiction**?

- Occurs when computer consumes someone's entire social life

Symptoms

- Craves computer time
- Overjoyed when at computer
- Unable to stop computer activity
- Irritable when not at computer
- Neglects family and friends
- Problems at work or school

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A Healthy Work Environment

What is **green computing**?

- Involves reducing electricity and environmental wastes while using a computer



Energy Star
EPA POLLUTION PREVENTER

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A Healthy Work Environment

What are some green computing suggestions?

- Use computers and devices that comply with the ENERGY STAR program.
- Do not leave the computer and devices running overnight.
- Turn off your monitor, printer, and other devices when not in use.
- Use paperless methods to communicate.
- Recycle paper.
- Buy recycled paper.
- Recycle toner cartridges.
- Recycle old computers and printers.
- Shop online (saves gas).
- Telecommute (saves gas).

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Ethics and Society

What are **computer ethics**?

- Moral guidelines that govern use of computers and information systems

Unauthorized use of computer systems

Information privacy

Intellectual property rights

Software theft (piracy)

Information accuracy

Codes of conduct

Next

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	ETHICAL	UNETHICAL
1. A company requires employees to wear badges that track their whereabouts while at work.	<input type="checkbox"/>	<input type="checkbox"/>
2. A supervisor reads an employee's e-mail.	<input type="checkbox"/>	<input type="checkbox"/>
3. An employee uses his computer at work to send e-mail messages to a friend.	<input type="checkbox"/>	<input type="checkbox"/>
4. An employee sends an e-mail message to several co-workers and blind copies his supervisor.	<input type="checkbox"/>	<input type="checkbox"/>
5. An employee forwards an e-mail message to a third party without permission from the sender of the message.	<input type="checkbox"/>	<input type="checkbox"/>
6. An employee uses her computer at work to complete a homework assignment for school.	<input type="checkbox"/>	<input type="checkbox"/>
7. The vice president of your Student Government Association (SGA) downloads a photograph from the Web and uses it in a flier recruiting SGA members.	<input type="checkbox"/>	<input type="checkbox"/>
8. A student copies text from the Web and uses it in a research paper for his English Composition class.	<input type="checkbox"/>	<input type="checkbox"/>
9. An employee sends political campaign material to individuals on her employer's mailing list.	<input type="checkbox"/>	<input type="checkbox"/>
10. As an employee in the registration office, you have access to student grades. You look up grades for your friends so they do not have to wait for delivery of grade reports from the postal service.	<input type="checkbox"/>	<input type="checkbox"/>
11. An employee makes a copy of software and installs it on her computer at home. No one uses her computer at home while she is at work, and she uses her computer at home only to finish projects from work.	<input type="checkbox"/>	<input type="checkbox"/>
12. An employee that has been laid off installs a computer virus on his employer's computer.	<input type="checkbox"/>	<input type="checkbox"/>
13. A person designing a Web page finds one on the Web similar to his requirements, copies it, modifies it, and publishes it as his own Web page.	<input type="checkbox"/>	<input type="checkbox"/>

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Ethics and Society

Why is information accuracy important?

- Inaccurate input can result in erroneous information and incorrect decisions based on that information
- Evaluate Web page's value before relying on its content

Evaluation Criteria	Reliable Web Pages
Audience	The Web page should be written at an appropriate level.
Authority	The Web page should list the author and the appropriate credentials.
Affiliation	A reputable institution should support the Web site without bias in the information.
Content	The Web page should be well organized and the links should work.
Currency	The information on the Web page should be current.
Design	The Web site should load quickly, and be pleasing visually and easy to navigate.
Objectivity	The Web page should contain little advertising and be free of bias.

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Ethics and Society

What are the ethics of using computers to alter output?

- Alteration could lead to deliberately misleading photographs



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Ethics and Society

What are intellectual property rights?

- Intellectual property (IP) refers to work created by inventors, authors, and artists
- Intellectual property rights are rights to which creators are entitled for their inventions, writings, and works of art



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Ethics and Society

What is an IT code of conduct?

- Written guideline that helps determine whether specific computer action is ethical or unethical

1. Computers may not be used to harm other people.
2. Employees may not interfere with other's computer work.
3. Employees may not meddle in other's computer files.
4. Computers may not be used to steal.
5. Computers may not be used to bear false witness.
6. Employees may not copy or use software illegally.
7. Employees may not use other's computer resources without authorization.
8. Employees may not use other's output.
9. Employees shall consider the social impact of programs and systems they design.
10. Employees always should use computers in a way that demonstrates consideration and respect for fellow humans.

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Summary of Computers and Society: Home, Work, and Ethical Issues

- Living with computers
- Emerging technologies
- A healthy work environment
- Ethics and society

Chapter 11 Complete

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