

Computer Impacts

Part I: Transportation

Global positioning system (GPS)



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

Computer Impacts

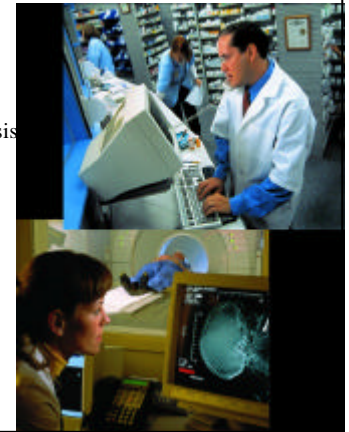
Part II: Education

Computer Impacts

Part III: Science and Medicine

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



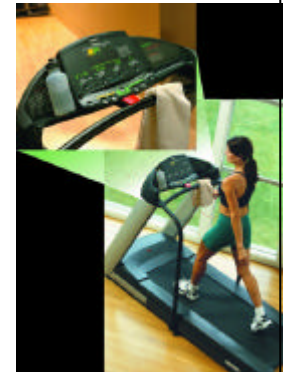
How can the computer and the Web aid patients?

- 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



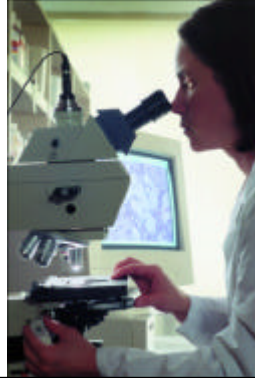
How can a computer aid in fitness?

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



How do scientists use computers?

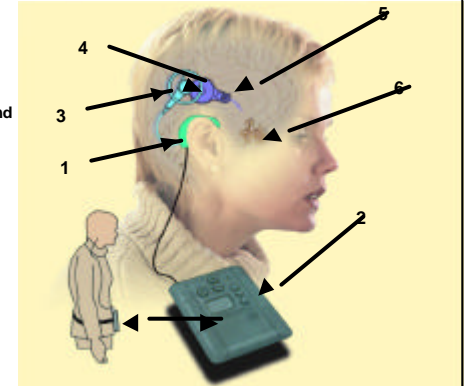
- Help them collect, analyze, and model data
- Use Internet to communicate with colleagues around world



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Cochlear Implant

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



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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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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

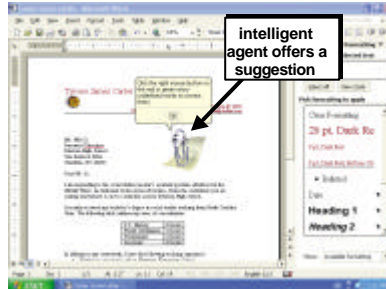


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Intelligent agent

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



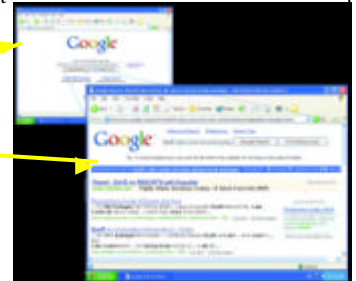
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Network agent

- 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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What is a robot

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



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Computer Impacts

Part IV: Arts and Entertainment

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Music and video available on a computer for entertainment

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



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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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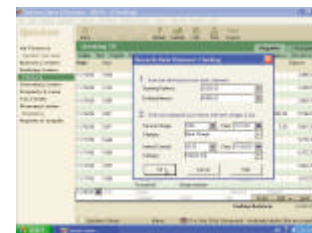
Part V: Business and Industry

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Finances management

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

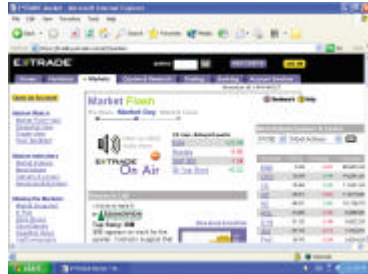


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Online stock trading

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



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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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How does the government use computers?

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



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How does the government use computers?

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



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How does the government use computers?

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



References

- Computers in Your Future (Ch. 11)
- Discovering Computers World 2003 (Ch. 11)