Introduction to Computers and Applications

A World of Computers

What is computer literacy?
- Knowledge and understanding of computers and their uses
- Computers are everywhere

What Is a Computer?

How is a computer defined?
- Electronic device operating under the control of instructions stored in its own memory

Accepts data
Raw facts, figures, and symbols

Processes data into information
Data that is organized, meaningful, and useful

Produces and stores results

What Is Input?

What is input?
- Data or instructions entered into memory of computer

What are the two types of input?
- Data
  - Unprocessed text, numbers, images, audio, and video
- Instructions
  - Programs
  - Commands
  - User responses
What is Input?

What is an input device?
- Hardware used to enter data and instructions

What is Output?

What is an output device?
- Hardware that conveys information to a user

The System Unit

What is the system unit?
- Box-like case containing electronic components used to process data

The System Unit

What are common components inside the system unit?
- Processor
- Memory
- Adapter cards
  - Sound card
  - Modem card
  - Video card
  - Network card
- Ports
- Drive bays
- Power supply

The System Unit

What is a chip?
- Small piece of semi-conducting material on which integrated circuits are etched
  - Integrated circuits contain many microscopic pathways capable of carrying electrical current
  - Chips are packaged so they can be attached to a circuit board

Processor

What is the central processing unit (CPU)?
- Interprets and carries out basic instructions that operate a computer
  - Control unit directs and coordinates operations in computer
  - Arithmetic logic unit (ALU) performs arithmetic, comparison, and logical operations
- Also called the processor
Memory

What is random access memory (RAM)?

The more RAM a computer has, the faster it responds.

Also called main memory or primary storage.

Most RAM is volatile, it is lost when computer’s power is turned off.

Memory chips that can be read from and written to by processor.

The System Unit

What is the motherboard?

- Main circuit board in system unit
- Contains adapter cards, processor chips, and memory chips
- Also called system board

The Motherboard

What are two main components on the motherboard?

Central Processing Unit (CPU)

- Also called a processor
- Carries out instructions that tell computer what to do

Memory

- Temporary holding place for data and instructions

Storage

What is storage?

- Holds data, instructions, and information for future use

Storage media

- Physical material on which data, instructions, and information are stored

Storage device

- Records and retrieves items to and from a storage medium

Storage Devices

What is a floppy disk?

- Thin, circular, flexible disk enclosed in rigid plastic shell
- A Zip disk is a higher capacity disk that can store the equivalent of up to 170 floppy disks
- A USB flash drive is portable, and has much greater storage capacity

Storage media

- Used in:
  - Digital cameras
  - Handheld computers
  - Portable, thin memory cards
  - Digital cameras
  - Handheld computers
  - Portable, thin memory cards

Storage device

- Used in:
  - Digital cameras
  - Handheld computers
  - Portable, thin memory cards

Storage

What is storage media?
Storage Devices

What is a flash drive?
- Provides much greater storage capacity than a floppy disk or Zip® disk
- Small and lightweight enough to be transported on a keychain or in a pocket

Storage Devices

What is a hard disk?
- Provides much greater storage capacity than a floppy disk or USB flash drive
- Housed inside the system unit

Storage Devices

What is a compact disc?
- Flat, round, portable metal disc
  - CD-ROM
  - CD-RW
  - DVD-ROM
  - DVD+RW

Storage Devices

What is a network?
- Collection of computers and devices connected together

Networks and the Internet

What are the reasons to network?
- To share
  - Resources
  - Hardware devices
  - Software programs
  - Data
  - Information
- To save time and money

Networks and the Internet

What makes a computer powerful?
- Storage
- Reliability and Consistency
- Speed
- Accuracy
- Communications

Why Is a Computer So Powerful?

Accuracy

Communications

Device

Communications

Media

Cables

Telephone lines

Cellular radio

Satellites

One type is a modem
Networks and the Internet

What is a server?
- Manages the resources on a network
- A client accesses the resources on the server

Servers

What types of servers are there?
- Midrange server: Powerful, large computer that supports up to a few thousand computers
- Mainframe: Very powerful, expensive computer that supports thousands of computers
- Supercomputer: The fastest, most powerful, most expensive computer. Used for applications requiring complex mathematical calculations

Networks and the Internet

What is the Internet?
- Worldwide collection of networks that connects millions of computers

Networks and the Internet

Why do users access the Internet?
1. Communications
2. Information
3. Shopping
4. Banking and Investing
5. Classes
6. Entertainment

Networks and the Internet

What is the Web?
- Billions of documents, called Web pages, available to anyone connected to the Internet

Computer Software

How do you install a software program?
- A program is a series of instructions that tells the computer what to do
Computer Software

What is a graphical user interface (GUI)?

- Allows you to interact with the software using graphics and icons
- Controls how you enter data and how the screen displays information

Business Software

What is spreadsheet software?

- Organizes data
- Performs calculations and recalculates when data changes

= A1+B2 (*C12)  = D1+E2 (*F12)
= SUM (C12:Y12)

Business Software

What is word processing software?

- Allows users to create and manipulate text and graphics
  - Clip art is a collection of graphics that you can insert in documents

Business Software

What is database software?

- Allows you to create and manage data
- Add, change, delete, sort, and retrieve data

Operating System (OS)

is a set of programs that coordinates all activities among computer hardware devices and allows users to run application software

Utility Programs allow the user to perform maintenance-type tasks usually related to managing a computer, its devices or its programs

Computer Software

What is system software?

- Programs that control the operations of the computer and its devices

What is application software?

- Programs that perform specific tasks for users

What is database software?

- Allows you to create and manage data
- Add, change, delete, sort, and retrieve data

Presentation Graphics
Spreadsheet
Database
Word Processing

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Business Software

What is presentation graphics software?
- Used to create visual aids for presentations
- A presentation is sometimes called a slide show

Business Software

What is a software suite?
- A collection of individual applications sold as a single package
- Two major advantages:
  - lower cost
  - ease of use

Computer Software

What is a programmer?
- Someone who develops application or system software
  - Programmer writes instructions to direct computer to process data into information

Categories of Computers

What are the categories of computers?
- Personal computers (desktop)
- Mobile computers and mobile devices
- Midrange servers
- Mainframe computers
- Supercomputers

Personal Computers

What are the two most popular series of personal computers?
- PC and compatibles use the Windows operating system
- Apple Macintosh uses the Macintosh operating system (Mac OS)

Personal Computers

What is a desktop computer?
- Designed so all of the components fit on or under a desk or table
Personal Computers

What is a notebook computer?
- Portable, small enough to fit on your lap
- Also called a laptop computer
- Generally more expensive than a desktop computer

Handheld Computers

What is a tablet PC?
- Resembles a letter-sized slate
- Allows you to write on the screen using a digital pen
- Especially useful for taking notes

Handheld Computers

What are Web-enabled handheld computers?
- Allow you to check e-mail and access the Internet
- Web-enabled telephone is a “smart phone”

Handheld Computers

What is a handheld computer?
- Used by mobile employees such as meter readers and delivery people

Handheld Computers

What is a personal digital assistant (PDA)?
- Provides personal organizer functions
  - Calendar
  - Appointment book
  - Address book
  - Calculator
  - Notepad

Elements of an Information System

What are information system elements?
- People
- Procedures
- Data
- Software
- Hardware
Examples of Computer Usage

What are five categories of computer users?

Examples of Computer Usage

What software is available for a home user?

Examples of Computer Usage

What is available for a small office/home office (SOHO) user?

Examples of Computer Usage

What are the needs of the large business user?

Examples of Computer Usage

What are the needs of a power user?
Computer Applications in Society

What are some examples of computer applications in society?

- Education
- Finance
- Government
- Healthcare
- Science
- Publishing
- Travel
- Industry

TERMS & CONCEPTS:

1. Hardware & Software examples? Main components on the motherboard?
2. Different Types of Computers? What is a PDA?
3. Input Devices, Processing Devices, Output Devices, Storage Devices
4. What is a Chip?
5. Data? Information? Instructions?
6. What is a Modem?
7. Server?
9. What is a software suite?
10. What do Programmers do?
12. What can you do on the Internet? What is a Web Site?
13. What is the WWW? Link? Browser Program?
14. What are some different types of computers? Notebook Computer?
15. What is a Power User?

WINDOWS

16. GUI? How does windows start? Default settings?
18. What is Pointing? Screen Tips? What is the Pointer? What are some different pointer shapes?
19. What are some Mouse Commands?
21. What is Multitasking? How do you switch back and forth between multiple programs? How do you select a program? Exit program?
23. What is print preview? Word wrap? Insertion point?
24. Where is Page Setup located?
25. Where is the Undo button? What does it do?
26. What does Formatting do? Where do you go to do this?
27. Where is the designation letter of first hard drive? Floppy drive?