CSCA0102
IT & Business Applications

Foundation in Business Information Technology
School of Engineering & Computing Sciences
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Chapter 1
Basic Computer Concepts
What is a Computer?

An electronic device, operating under the control of instructions stored in its own memory unit, that can accept data (input), manipulate the data according to specified rules (process), produce information (output) from the processing, and store the results for future use.
What does a computer do?

- Input
- Process
- Output
- Storage
What does a computer do?

Input

• It is the process of capturing or acquiring the information, or it is the process of accepting data or information, by using input the computer can do any process.
• Information or data that is entered into a computer or computer device using input devices.
What does a computer do?

**Input**

**Types of Computer Input**

- **Data**
  - the raw facts given to the computer.

- **Programs**
  - the sets of instructions that direct the computer.

- **Commands**
  - special codes or key words that the user inputs to perform a task.

- **User response**
  - the user's answer to the computer's question.
What does a computer do?

Processing

• It is the transformation process to convert the input into output.
• A **process** is an instance of running a program.
• It cause the computer to follow instructions from the Memory.
• Perform by **Central Processing Unit (CPU)**.
What does a computer do?

Output

- It is the result, which comes from the transformation process or it is the outcome of the process.
- Anything that comes out of a computer.
What does a computer do?

Output

Types of Computer Output

- **Hard copy**
  - Printed on paper or other permanent media.

- **Soft copy**
  - A *soft copy* is the unprinted digital document file.
  - Displayed on screen or by other non-permanent means.
  - It can be transported from one computer to another.
Input Devices

- Any hardware component that allows you to enter data, programs, commands, and user responses into a computer

Input Device Examples
- Keyboard
- Mouse
Output Devices

- Output devices make the information resulting from processing available for use

Output Device Examples

- Printers
  - Impact
  - Nonimpact
  - Photo

- Display Devices
  - CRT
  - LCD
Storage Devices

- **Removable**
  - Floppy disk, or diskette
  - Compact Disc CD-R, CD-RW, CD-ROM
  - DVDs – DVD-ROM, DVD-R, DVD-RW, DVD-RAM
  - Zip disk
  - Flash disk/USB drive
  - Tape

- **Non-Removable**
  - Hard disk
System Unit

- The motherboard, or system board, is the main circuit board of the system unit.
- The processor, also called the central processing unit (CPU), interprets and carries out the basic instructions that operate a computer.
- The control unit interprets the instructions.
- The arithmetic/logic unit (ALU) performs the logical and arithmetic processes.
- Memory, also called random access memory, or RAM, consists of electronic components that store data, instructions, and information, as needed by the processor.
Communications Devices

• A **communications device** is a hardware component that enables a computer to send (transmit) and receive data, instructions, and information to and from one or more computers

• Communications occur over transmission media, such as telephone lines, cables, cellular radio networks, and satellites
Types of Computers

- Supercomputers
- Mainframes
- Microcomputers
  - Desktops
  - Laptops (Notebooks)
  - Handhelds
Types of Computers

Supercomputers

- The fastest type of computer.
- Very expensive and are employed for specialized applications that require immense amounts of mathematical calculations.
- An extremely fast computer that can perform hundreds of millions of instructions per second.
Types of Computers

Mainframes

• A very large and expensive computer capable of supporting hundreds, or even thousands, of users simultaneously.

• In some ways, mainframes are more powerful than supercomputers because they support more simultaneous programs.
Types of Computers

Microcomputers

• A microcomputer is a small, relatively inexpensive computer with a microprocessor as its central processing unit (CPU)

• A small, single-user computer based on one microprocessor.

• Microcomputers are designed to be used by individuals.
COMPUTER SOFTWARE

- **System software** consists of programs to control the operations of computer equipment.
- Instructions in the operating system tell the computer how to perform the functions of loading, storing, and executing an application program and how to transfer data.
- When a computer is turned on, the operating system is loaded into the computer’s memory from auxiliary storage, a process called booting.
- Most computers use an operating system that has a graphical user interface (GUI).
Operating System Tasks

• Operations Management
  • Load, store and execute programs
  • Transfer data

• File Management
  • Files
  • Folder

• System Maintenance
  • Defragment/Check Disk
  • Virus Check

• System Monitoring
Application Software

- Word Processing
- Spreadsheet
- Presentation Graphics
- Database
- Contact Management
- Utility Software – anti-virus, data backup, and file compression
NETWORKS

• A network is a collection of computers and devices connected together so users can share data and resources
• A local area network (LAN) connects computers in a limited geographic area
• A wide area network (WAN) covers a large geographical area
Networks and the Internet

• The world’s largest network is the Internet
• Most users connect to the Internet in one of two ways:
  • Internet service provider
  • Online service provider
The World Wide Web

- One of the more popular segments of the Internet is the World Wide Web, also called the Web.
- A Web page is a document that contains text, graphics, sound, and/or video and has built-in connections, or hyperlinks to other Web documents.
- A Web site is a related collection of Web pages.
- You access and view Web pages using a software program called a Web browser.
- A Web page has a unique address, called a Uniform Resource Locator (URL).
- A hyperlink is a virtual connection to another place on the Web.
More Internet Terms

- **Cookies** – a text file created by a Web server and your Web browser, that sits on your hard drive.
- **Search engine** – a Web site containing a database of web pages and their content.
- **Electronic commerce** – conducting business online, such as shopping or investing.
- **Portal** – a launching point for browsing online; one of the most well-known is Yahoo!, where you can search the Web, shop, chat, check e-mail, build a Web site, and view news articles.
Web Browsers

- **Internet Explorer** – built into Windows
- **Netscape** – the oldest browser; an all-round communications package for the Internet; free at http://www.netscape.com
- **Opera** – free version available at http://www.opera.com
Uniform Resource Locator (URL)

http://www.yahoo.com
COMMON APPLICATIONS

- E-mail—Send messages to other connected users
- Shop for goods and services
- Meet and converse with people around the world
  - Instant Messaging, such as ICQ, Windows (MSN) Messenger, and AOL Instant Messenger
  - Web browser plug-ins, such as Macromedia Flash and Shockwave
- Access sources of entertainment and leisure, such as online games, magazines, and vacation planning guides
- Access information such as news, maps, airline schedules, and stock market data
Electronic Commerce

• When you conduct business activities online, you are participating in **electronic commerce**, also known as e-commerce
• Business to consumer (**B2C**) involves the sale of goods to the general public
• Consumer to consumer (**C2C**) involves one consumer selling directly to another
• Business to business (**B2B**) provides goods and services to other businesses