Introduction To Multimedia Applications
CT801-4-0-OIMA

Hardware and Software in Multimedia

ASIA PACIFIC UNIVERSITY
OF TECHNOLOGY & INNOVATION

Topic & Structure of Lesson

System Unit and Its Components

Common Input/Output Devices

System Software

Application Software

Learning Outcomes
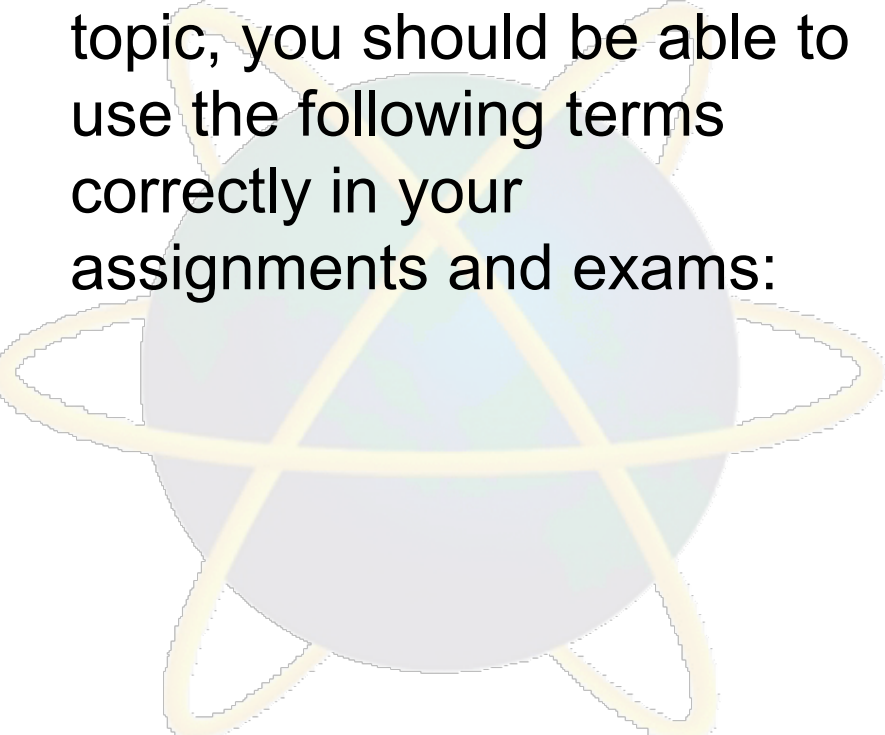
At the end of this lecture, you will be able to:

Identify the system unit and its components, and common input/output devices.

Differentiate between system software and application software.

Key Terms you must be able to use

If you have mastered this topic, you should be able to use the following terms correctly in your assignments and exams:

Motherboard

Processor

Memory

Ports

Power Supply

Expansion Cards

Operating System

Utility

Device Driver

Application Software

Hardware

Hardware is the collection of physical elements that constitute a computer system.

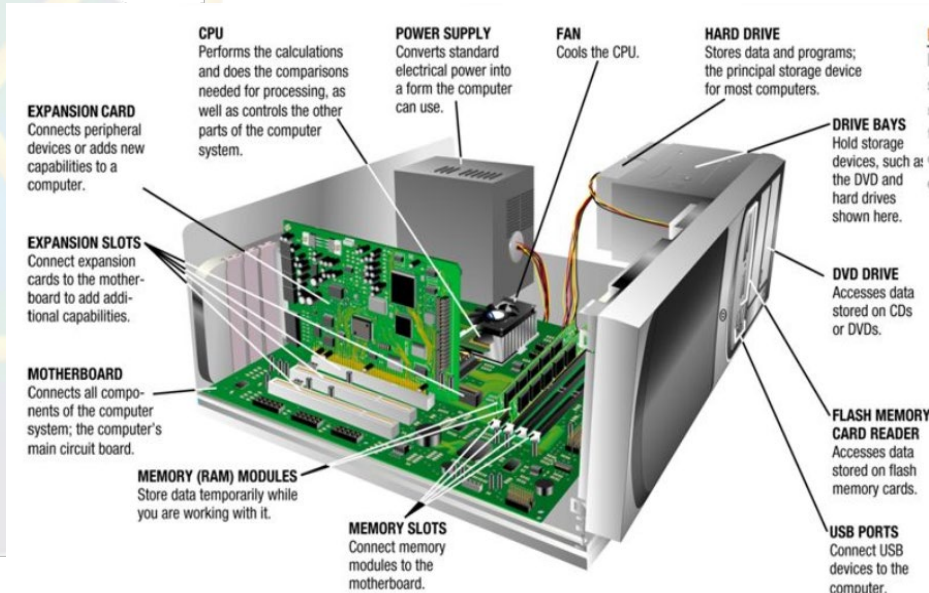These elements include the **system unit** and **input/output devices**.

System Unit

The system unit is a case that contains electronic components of the computer used to process data.

These components include:

- Motherboard
- Processor (CPU)
- Memory
- Ports
- Power Supply
- Expansion Cards

EXPANSION CARD
Connects peripheral devices or adds new capabilities to a computer.

EXPANSION SLOTS
Connect expansion cards to the motherboard to add additional capabilities.

MOTHERBOARD
Connects all components of the computer system; the computer's main circuit board.

MEMORY (RAM) MODULES
Store data temporarily while you are working with it.

MEMORY SLOTS
Connect memory modules to the motherboard.

CPU
Performs the calculations and does the comparisons needed for processing, as well as controls the other parts of the computer system.

POWER SUPPLY
Converts standard electrical power into a form the computer can use.

FAN Cools the CPU.

HARD DRIVE
Stores data and programs; the principal storage device for most computers.

DRIVE BAYS
Hold storage devices, such as the DVD and hard drives shown here.

DVD DRIVE
Accesses data stored on CDs or DVDs.

FLASH MEMORY CARD READER
Accesses data stored on flash memory cards.

USB PORTS
Connect USB devices to the computer.

System Unit

Motherboard
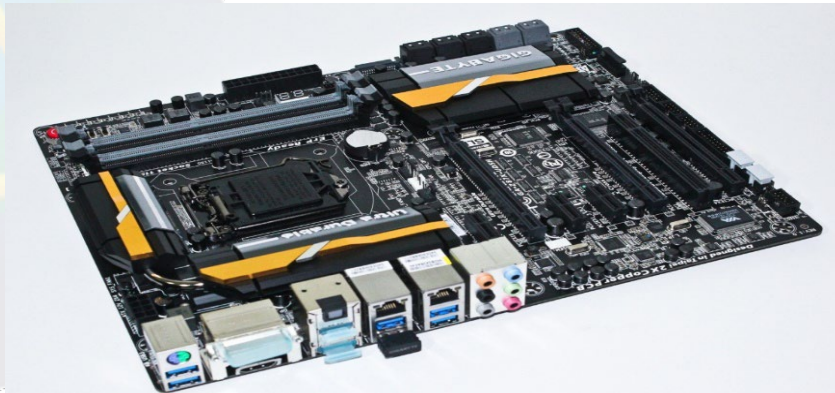
Processor (CPU)

Memory

Ports

Power supply

Expansion cards

Motherboard

Motherboard

- The main circuit board of the system unit serves to connect all parts of a computer.

Processor (CPU)

Processor (CPU)

- The Central Processing Unit (CPU), is the "computer's brain" that interpret and execute basic instructions that operate a computer.

Memory

Random Access Memory (RAM)

- A type of primary memory
- Volatile-memory: loses its content when computer is turned off
- Used to hold data while it is being processed, and program while it is being executed.

Read-only Memory (ROM)

- A type of primary memory
- Non-volatile memory: does not lose its content when computer is turned off.
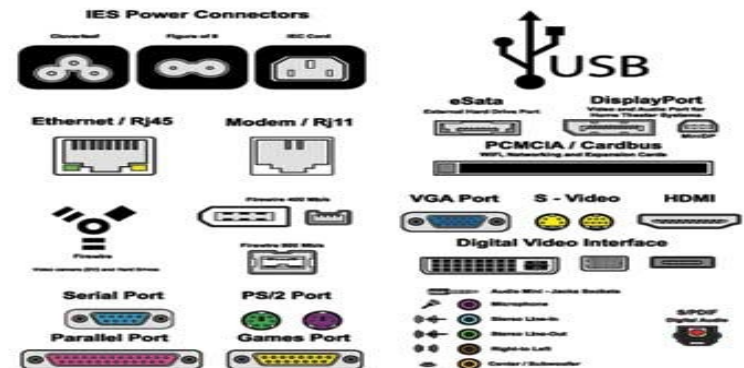- Used to store instructions during computer set up, called the *firmware*.

Secondary memory

- Refers to the storage in a computer which it acts as a mean to store the processed information. Example of storage devices includes the:
- Hard disk
- Optical disk
- Floppy disk
- USB flash memory
- Memory card

Ports

Ports

- A port is the point at which a peripheral attaches to or communicates with a system unit (sometimes referred to as a jack).
- Example of storage devices includes:
  - RJ 45
  - USB
  - HDMI
  - VGA
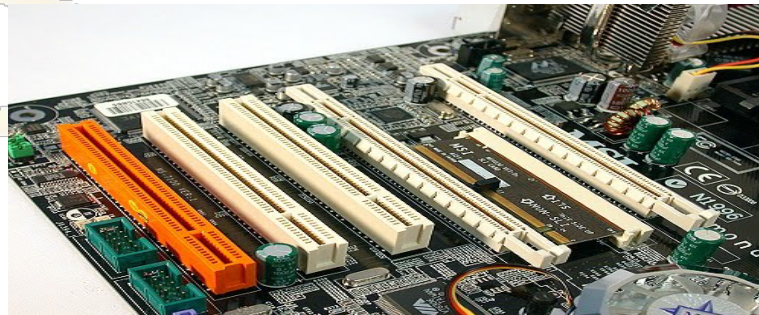 - Serial Port

Power Supply

Power Supply

- It receives power from an electrical outlet and convert the AC to DC which is what the computer requires.
- It regulates the voltages to an adequate amount which avoid the computer from overheating.

Expansion Card

Expansion Card

- Inserted into an expansion slot on the motherboard to add extra functionality to a computer.
- Used to enhance the quality of their specific function.
- Examples includes:
  - Memory card slot
  - Graphics card slot
  - Network card slot

Input & Output Device

Input Device

- An input device is any hardware that allows users to enter data and instructions into a computer.
- Examples include:
  - Keyboard
  - Mouse
  - Mic
  - Webcam

Output Device

- An output device is any type of hardware component that conveys information to one or more people.
- Examples include:
  - Monitor
  - Printers
  - Speakers

Software

Software is a program consists of a set of instructions that guide the computer how to do its work.

Types of software:

- System Software
- Application Software

System Software

System software is a program designed to operate the computer hardware and to provide a platform for running application software.

It works at the background in a computer managing its own internal resources.

Types of system software:

- Operating system
- Utility
- Device Driver

Operating System

Operating system – program that manages the computer resources and provides the interface between the user and computer hardware.

Popular computer OS include:

- Windows 10, Mac OS X, Ubuntu.
- Popular mobile Oss:
- Android OS, iOS, Window Phone OS

Utility

Utility – program that ensures optimum functionality of devices and applications by running diagnostic and maintenance tasks for the computer.

Common tasks carried out by utilities software are:

- Antivirus and firewall
- Data backup and recovery
- Disk partition and defragmentation
- Hardware diagnostic services
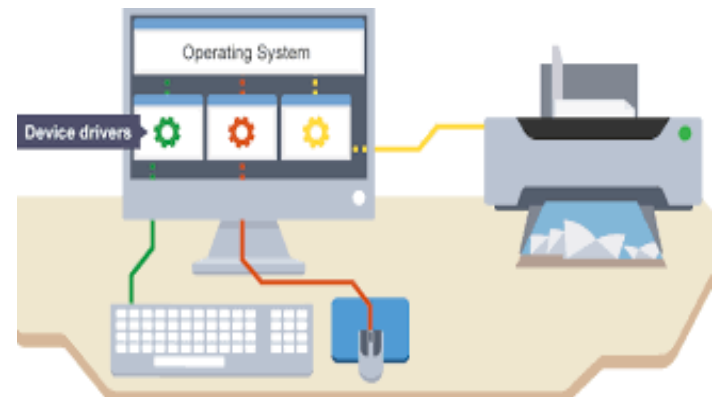- File conversion and compression

Device Driver

Device driver – program that tells the operating system how to communicate with the device that is attached to the computer.

Examples of devices which require drivers:

- Mouse
- Keyboard
- Soundcard
- Display card
- Network card
- Printer

Application Software

A program or group of programs designed for end users.

Used to accomplish specific tasks other than just running the computer system

Types of application software:

- General-purpose application
- Specialized applications
- Mobile applications

General Purpose Application

General purpose applications are widely used in nearly all career areas.

Examples:

- Word processor
- Spreadsheet
- Presentation Software
- Database Management System
- Graphic Editor
- Web Browser

Specialized Application

Specialized applications includes thousands of other programs that are more narrowly focused on specific disciplines and occupations.

Examples:

- Help desk system
- Asset management system
- Hospital management system
- Student management system
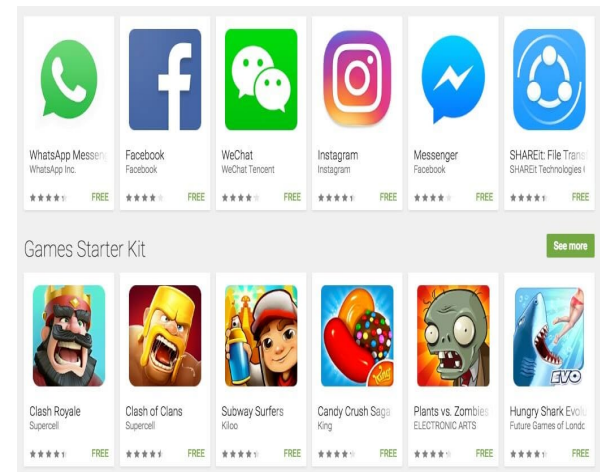- Library management system

Student Management System

Mobile Application

Mobile applications are small programs primarily designed for mobile devices such as smartphones and for tablet computers.

Examples:

- Social media applications
- Video streaming applications
- Music streaming applications
- E-commerce applications
- Mobile game applications

Quick Review Question

01
Identify the components in a system unit

02
List 3 examples each of an input and output device

03
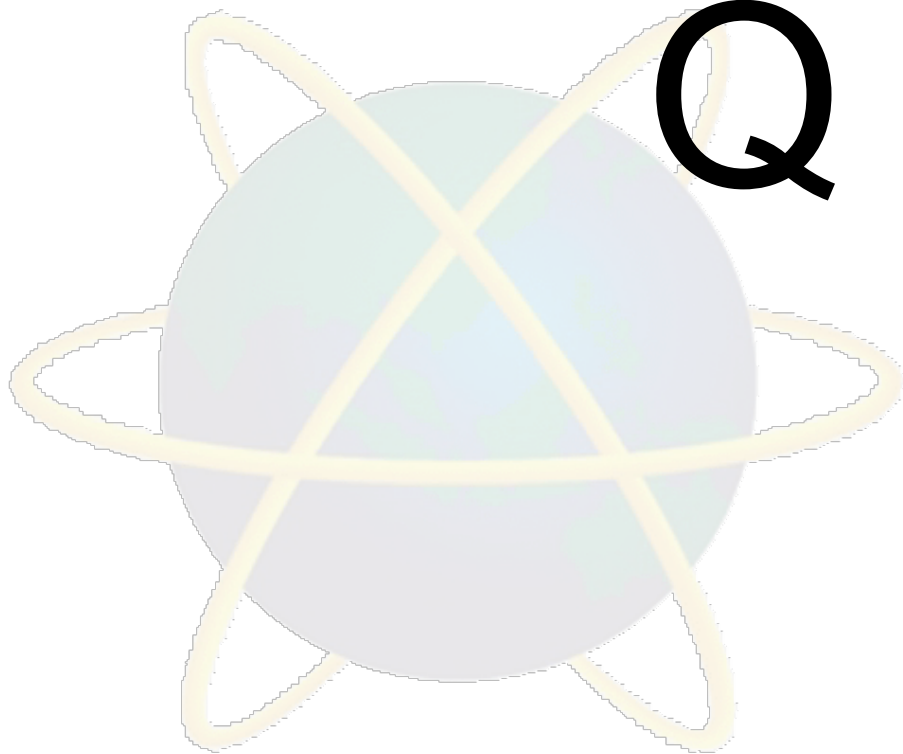Describe the 2 types of software

Question and Answer Session

Q & A

Next Session

Multimedia Development Methodology