

NETWORKING & SYSTEM ADMINISTRATION LAB**Experiment No.: 5****Aim**

Introduction to Hardware Components

Procedure**1. Motherboard**

- A motherboard is the main circuit board inside a computer that connects the different parts of a computer together.
- It has sockets for the CPU, RAM and expansion cards and it also hooks up to hard drives, disc drives and front panel ports with cables and wires.
- Motherboard supports a single type of CPU and few types of memories.
- Video cards, hard disks, sound cards have to be compatible with the motherboard to function properly.
- Motherboards, cases, and power supplies must be compatible to work properly together.
- The motherboard is the backbone that ties the computer's components together at one spot and allows them to talk to each other.
- Without it, none of the computer pieces, such as the CPU, GPU, or hard drive, could interact.
- Total motherboard functionality is necessary for a computer to work well

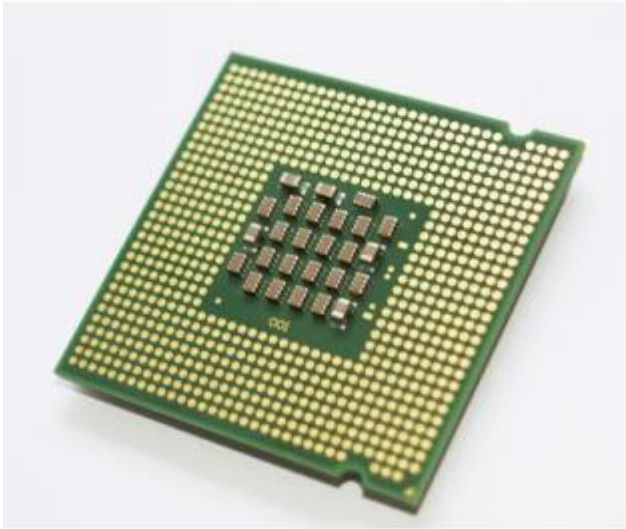
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2. Central Processing Unit



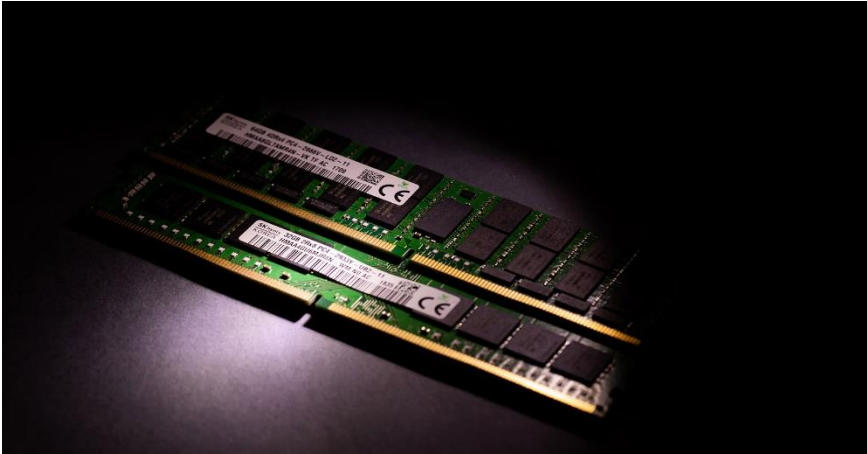
- A central processing unit (CPU), also called a central processor, main processor or just processor, is the electronic circuitry that executes instructions comprising a computer program.
- The CPU performs basic arithmetic, logic, controlling, and input/output (I/O) operations specified by the instructions in the program.
- CPU is considered as the brain of the computer.
- CPU performs all types of data processing operations.
- It stores data, intermediate results, and instructions (program).
- It controls the operation of all parts of the computer.

3. Hardware



- Computer hardware is the physical components that a computer system requires to function.
- It encompasses everything with a circuit board that operates within a PC or laptop; including the motherboard, graphics card, CPU (Central Processing Unit), ventilation fans, webcam, power supply, and so on.
- Hardware cannot perform any task without software.
- Hardware refers to the physical and visible components of the system such as a monitor, CPU, keyboard and mouse.
- Hardware refers to the physical, tangible computer equipment and devices, which provide support for major functions such as input, processing (internal storage, computation and control), output, secondary storage (for data and programs), and communication.

4. RAM



- Random access memory (RAM) is a computer's short-term memory, which it uses to handle all active tasks and apps.
- It stores the information your computer is actively using so that it can be accessed quickly.
- RAM is a memory device for reading/writing data
- RAM is volatile memory that temporarily stores the files you are working on.
- RAM allows your computer to perform many of its everyday tasks, such as loading applications, browsing the internet, editing a spreadsheet, or experiencing the latest game.
- RAM is known as the Primary memory of the computer.
- RAM is known to be expensive since the memory can be accessed directly.
- RAM is the fastest memory therefore, it is an internal memory for the computer.

5. Optical Disc Drive



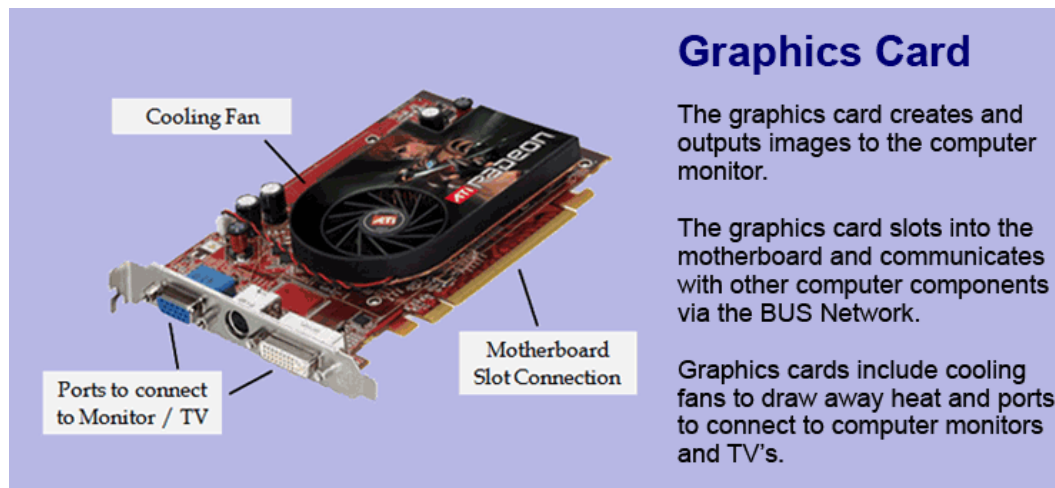
- An optical disc drive (ODD) in a computer system allows you to use CDs, DVDs, and Blu-ray discs to listen to music or watch a movie.
- Most drives also allow you to write data to a disc, so you can create your own music CDs, video DVDs or even create of back-up copy of your important data files.
- An optical disk drive uses a laser beam to read the data from the disk as it is spinning.
- It distinguishes between the pits and lands based on how the light reflects off the recording material.
- The drive uses the differences in reflectivity to determine the 0 and 1 bits that represent the data.
- Optical drives work by rotating the inserted disc at a constant speed, calculated in revolutions per minute (RPM).
- The rotating disc in an optical drive is read with a laser beam using a lens embedded within the optical drive's head.

6. Monitor



- Monitor is an electronic device with a screen used for display (as of television pictures or computer information)
- It is a device for observing a biological condition or function a heart monitor.
- Monitors are also known as computer screens or display screens.
- Screen monitors are used in many computer devices, from personal computers (PCs) and laptops to small mobile devices, such as cell phones and MP3 players.
- The display device in modern monitors is typically a thin film transistor liquid crystal display (TFT-LCD) with LED backlighting having replaced cold-cathode fluorescent lamp (CCFL) backlighting.
- Monitors have display functions that include powering it on and off, controlling brightness, contrast and position, among others.
- A computer monitor is considered an output device.

7. Graphics Card



- A graphics card is a type of display adapter or video card installed within most computing devices to display graphical data with high clarity, color, definition and overall appearance.
- Graphics cards allow computers to produce graphics and images more quickly.
- Graphics card is responsible for interpreting the instructions received from a CPU and display it so that a user can see it in on a computer monitor. It is an important component in a computer system which affects your computer performance.
- Cards with faster processor and memory will display images quickly. This dictates giving due attention when you select video cards.
- The GPU performs graphical instructions and data. It uses its own memory to store information and the settings such as color, resolution and refresh rate.

8. Sound Card



- A sound card is a computer component that translates digital audio signals to analog ones, and analog audio signals to digital ones.
- Technically, a sound card is an optional component but a necessary one if you want to hear sound from your PC on wired headphones or speakers (just like an EXTERNAL DAC), or plug in a mic with an analog output.
- In the reverse case, the sound card can convert analog audio data from the microphone to digital data which can be stored on a computer and converted using audio software.
- A sound card is also known as an audio adapter.

9. Keyboard



- A computer keyboard is an input device used to enter characters and functions into the computer system by pressing buttons, or keys.
- It is the primary device used to enter text.
- A keyboard typically contains keys for individual letters, numbers and special characters, as well as keys for specific functions.
- A keyboard is a peripheral device that enables a user to input text into a computer or any other electronic machinery.
- A keyboard is an input device and is the most basic way for the user to communicate with a computer.

10. Mouse



- The mouse is a small input device that you can use to move the pointer on the screen and click or double-click objects.
- Mice have a scroll wheel to scroll up and down through long documents, a left button for clicking, and a right button for double-clicking.
- The mouse was invented by Douglas Engelbart in 1963, but it wasn't until 1980 that it became part of mainstream commercial use.
- A computer mouse is a handheld hardware input device that controls a cursor in a GUI (graphical user interface) for pointing, moving and selecting the text, icons, files, and folders on your computer.
- In addition to these functions, a mouse can also be used to drag-and-drop objects and give you access to the right-click menu.

