NETWORKING & SYSTEM ADMINISTRATION LAB

Name: Abhijith S Babu

Roll No:02

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Aim

Identify the major components of a computer system such as motherboard,RAM modules,daughter cards,bus slots,SPMS,internal storage devices and interfacing ports.

Procedure

Motherboard

The motherboard is a printed circuit board and foundation of a computer that is the biggest board in a computer chassis. It allocates power and allows communication to and between the CPU, RAM, and all other computer hardware components.

A motherboard provides connectivity between the hardware components of a computer, like the processor (CPU), memory (RAM), hard drive, and video card. There are multiple types of motherboards, designed to fit different types and sizes of computers.

Each type of motherboard is designed to work with specific types of processors and memory, so they don't work with every processor and type of memory. However, hard drives are mostly universal and work with the majority of motherboards, regardless of the type or brand.

RAM Modules

A memory module is another name for a RAM chip. It is often used as a general term used to describe SIMM:-Single Inline Memory Module (SIMM) is a small circuit board that can hold a group of memory chips.,

DIMM:- A DIMM or dual in-line memory module comprises a series of dynamic random-access memory integrated circuits.,

SO-DIMM:- Notebook computers and other computers that require much smaller components don't use standard RAM packages like the SIMM or the DIMM.Instead, they can use much smaller memory form factor called Small Outline DIMM (SO-DIMM).

While there are several different types of memory modules available, they all serve the same purpose, which is to store temporary data while the computer is running.

Memory modules come in different sizes and have several different pin configurations. For example, the original SIMMs had 30 pins (which are metal contacts that connect to the motherboard). However, newer SIMM chips have 72 pins. DIMMs commonly come in 168-pin configurations, but some DIMMs have as many as 240 pins. SO-DIMMs have a smaller form factor than standard DIMM chips, and come in 72-pin, 144-pin, and 200-pin configurations.

While "memory module" is the technical term used to describe computer memory, the terms "RAM," "memory," and "RAM chip" are just as acceptable. But remember, while memory terms may be interchangeable, the memory itself is not. This is because most computers only accept one type of memory. Therefore, if you decide to upgrade you computer's RAM, make sure the memory modules you buy are compatible with your machine.

Daughtercards

A daughtercard or daughterboard is a type of circuit board that gets added to an existing one. Its name is appropriate for its use, since it is connected to a “motherboard” or “main board.” The motherboard is the primary circuit board for a device. It is usually in the device as it is shipped from the factory. A daughtercard may be added later.

Daughtercards are different from some other types of additional circuit boards that tech enthusiasts call “expansion cards.” In expansion cards, the circuit board is often plugged in through a gap in the housing of a computer or device. These expansion boards help to give a device more functionality, often for additional sound play or for better visuals on a high-tech monitor or screen.

Bus Slot

Alternatively known as a bus slot or expansion port, an expansion slot is a connection or port inside a computer on the motherboard or riser card. It provides an installation point for a hardware expansion card to be connected. For example, if you wanted to install a new video card in the computer, you'd purchase a video expansion card and install that card into the compatible expansion slot.

Below is a listing of expansion slots commonly found in a computer and the devices associated with those slots.

- AGP - Video card.
- AMR - Modem, sound card.
- CNR - Modem, network card, sound card.
- EISA - SCSI, network card, video card.
- ISA - Network card, sound card, video card.
- PCI - Network card, SCSI, sound card, video card.
- VESA - Video card.

SMPS

The full form of SMPS is Switched Mode Power Supply also known as Switching Mode Power Supply. SMPS is an electronic power supply system that makes use of a switching regulator to transfer electrical power effectively. It is a PSU (power supply unit) and is usually used in computers to change the voltage to the appropriate range for the computer. An SMPS adjusts output voltage and current between different electrical configurations by switching the basics of typically lossless storage such as capacitors and inductors.

Internal Storage Devices

There are two types of internal storage devices:-

- Primary Storage Device

  Random Access Memory, or RAM, is the primary storage of a computer. RAM is a volatile memory, meaning it cannot hold onto information once the system turns off. For example, if you copy a block of text, restart your computer, and then attempt to paste that block of text into a document, you'll find that your computer has forgotten the copied text. This is because it was only stored temporarily in your RAM.
- Secondary Storage Device

  HDD:-A hard disk drive is comprised of a stack of spinning metal disks known as platters. Each spinning disk has trillions of tiny fragments that can be magnetized in order to represent bits (1s and 0s in binary code). An actuator arm with a read/write head scans the spinning platters and magnetizes fragments in order to write digital information onto the HDD, or detects magnetic charges to read information from it.

  SSD:- Solid-state drives emerged far more recently, in the '90s. SSDs don't rely on magnets and disks, instead they use a type of flash memory called NAND. In an SSD, semiconductors store information by changing the electrical current of circuits contained within the drive. This means that unlike HDDs, SSDs don't require moving parts to operate.Because of this, SSDs not only work faster and smoother than HDDs (HDDs take longer to gather information due to the mechanical nature of their platters and heads), they also generally last longer than HDDs (with so many intricate moving parts, HDDs are vulnerable to damage and wear).

Interfacing Ports

A port serves as an interface between the computer and other computers or peripheral devices. In computer terms, a port generally refers to the part of a computing device available for connection to peripherals such as input and output devices. Examples are:

- Serial port
- Parallel port
- USB port
- PS/2 port
- VGA port
- Modem port
- FireWire Port
- Ethernet port
- Sockets
- Infrared Port
- Game Port