

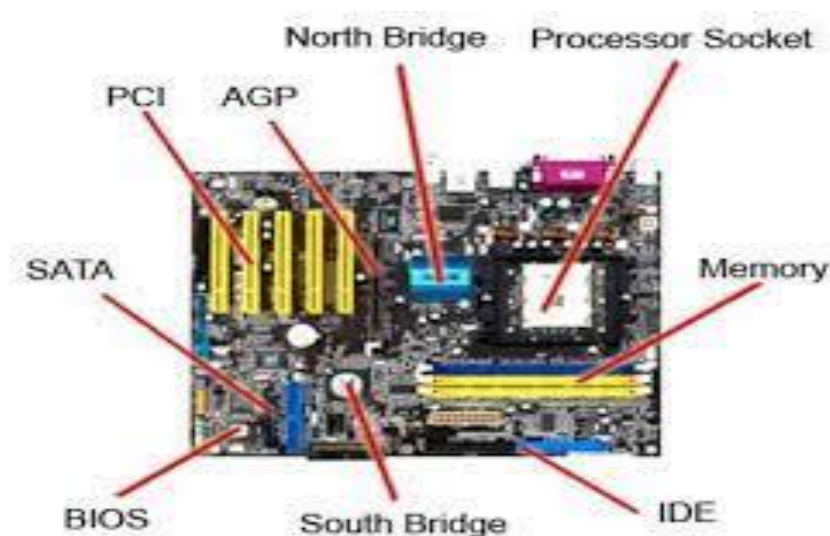
**NETWORKING & SYSTEM ADMINISTRATION LAB****Name: Aiswarya Baiju****Roll No:6****Batch:A****Date:20/03/22****Experiment No.: 1****Aim**

Identify major components of a computer system such as Motherboard, RAM modules, Daughter Cards, Bus Slots, SMPS, Internal Storage Devices, Interfacing Ports

**Procedure****Motherboard**

A motherboard (also called mainboard, main circuit board, or mobo) is the main printed circuit board (PCB) in general-purpose computers and other expandable systems. It holds and allows communication between many of the crucial electronic components of a system, such as the central processing unit (CPU) and memory, and provides connectors for other peripherals. Unlike a backplane, a motherboard usually contains significant sub-systems, such as the central processor, the chipset's input/output and memory controllers, interface connectors, and other components integrated for general use.

An important component of a motherboard is the microprocessor's supporting chipset, which provides the supporting interfaces between the CPU and the various buses and external components. This chipset determines, to an extent, the features and capabilities of the motherboard.



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**RAM modules**

In computing, a memory module or RAM (random-access memory) stick is a printed circuit board on which memory integrated circuits are mounted.[1] Memory modules permit easy installation and replacement in electronic systems, especially computers such as personal computers, workstations, and servers. The first memory modules were proprietary designs that were specific to a model of computer from a specific manufacturer. Later, memory modules were standardized by organizations such as JEDEC and could be used in any system designed to use them.

**Types of memory module include:**

- TransFlash Memory Module
- SIMM, a single in-line memory module
- DIMM, dual in-line memory module

Rambus memory modules are a subset of DIMMs, but are normally referred to as RIMMs

SO-DIMM, small outline DIMM, a smaller version of the DIMM, used in laptops

Distinguishing characteristics of computer memory modules include voltage, capacity, speed (i.e., bit rate), and form factor. For economic reasons, the large (main) memories found in personal computers, workstations, and non-handheld game-consoles (such as PlayStation and Xbox) normally consist of dynamic RAM (DRAM). Other parts of the computer, such as cache memories normally use static RAM (SRAM). Small amounts of SRAM are sometimes used in the same package as DRAM.[2] However, since SRAM has high leakage power and low density, die-stacked DRAM has recently been used for designing multi-megabyte sized processor caches.

Dynamic random access memory is produced as integrated circuits (ICs) bonded and mounted into plastic packages with metal pins for connection to control signals and buses. In early use individual DRAM ICs were usually either installed directly to the motherboard or on ISA expansion cards; later they were assembled into multi-chip plug-in modules (DIMMs, SIMMs, etc.).

**Daughter Cards**

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.

Some daughtercard designs are made so that engineers can add functionality to a device without requiring a lot more room inside its housing. These kinds of items are often called riser boards or risers. Some might also call them “mezzanine boards.”

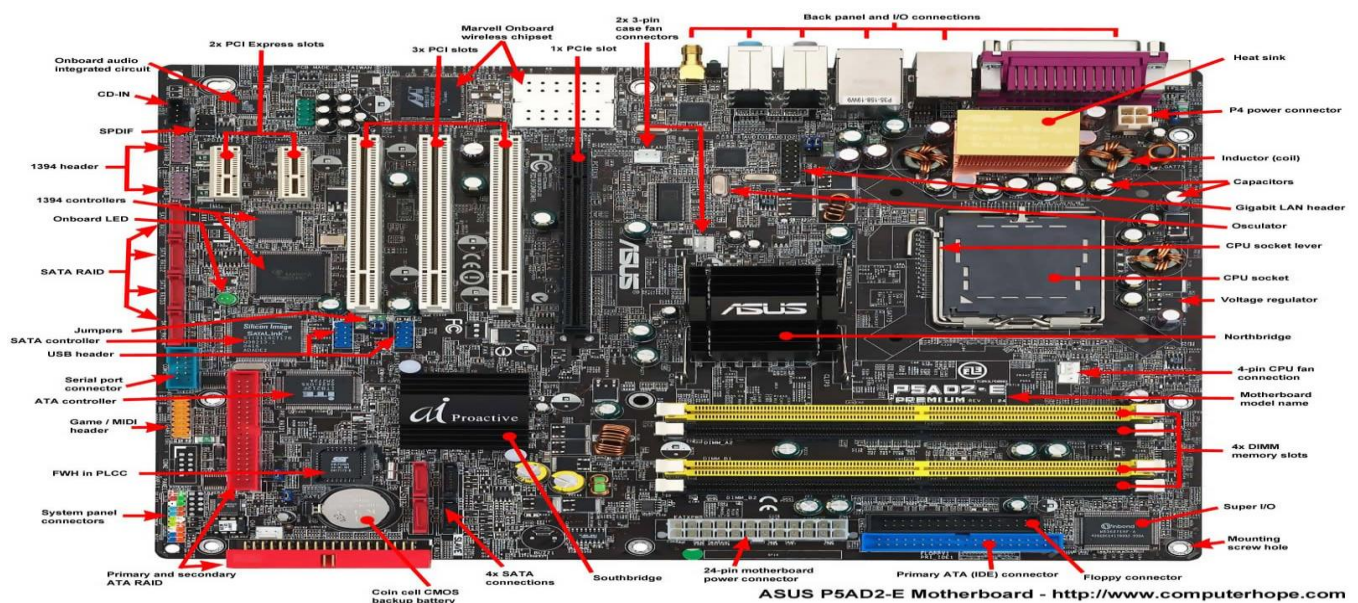


## **Bus Slots**

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.
- PCI Express - Video card, modem, sound card, network card.
- VESA - Video card.



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## **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. Ideal switching concepts determined by transistors controlled outside of their active state that have no resistance when ‘on’ and carry no current when ‘off.’ It is the idea why switches with an ideal function will operate with 100 per cent output, that is, all input energy is provided to the load; no power is wasted as dissipated heating. In fact, such ideal systems do not exist, which is why a switching power source can not be 100 per cent proficient, but it is still a vital improvement in effectiveness over a linear regulator.

## **Internal Storage Devices**

Most computers have some form of internal storage. The most common type of internal storage is the hard disk. At the most basic level, internal storage is needed to hold the operating system so that the computer is able to access the input and output devices. It will also be used to store the applications software that you use and more than likely, the original copies of your data files.

Internal storage allows the data and applications to be loaded very rapidly into memory, ready for use. The data can be accessed much faster than data which is stored on an external storage device. This is because internal storage devices are connected directly to the motherboard and its data bus whereas external devices are connected through a hardware interface such as USB, which means they are considerably slower to access.

## **Interfacing Ports**

In computer hardware, 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. Computer ports have many uses, to connect a monitor, webcam, speakers, or other peripheral devices. On the physical layer, a computer port is a specialized outlet on a piece of equipment to which a plug or cable connects. Electronically, the several conductors where the port and cable contacts connect, provide a method to transfer signals between devices. Computer ports in common use cover a wide variety of shapes such as round (PS/2, etc.), rectangular (FireWire, etc.), square (Telephone plug), trapezoidal (D-Sub — the old printer port was a DB-25), etc..