## NETWORKING & SYSTEM ADMINISTRATION LAB

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## Experiment No.: 1

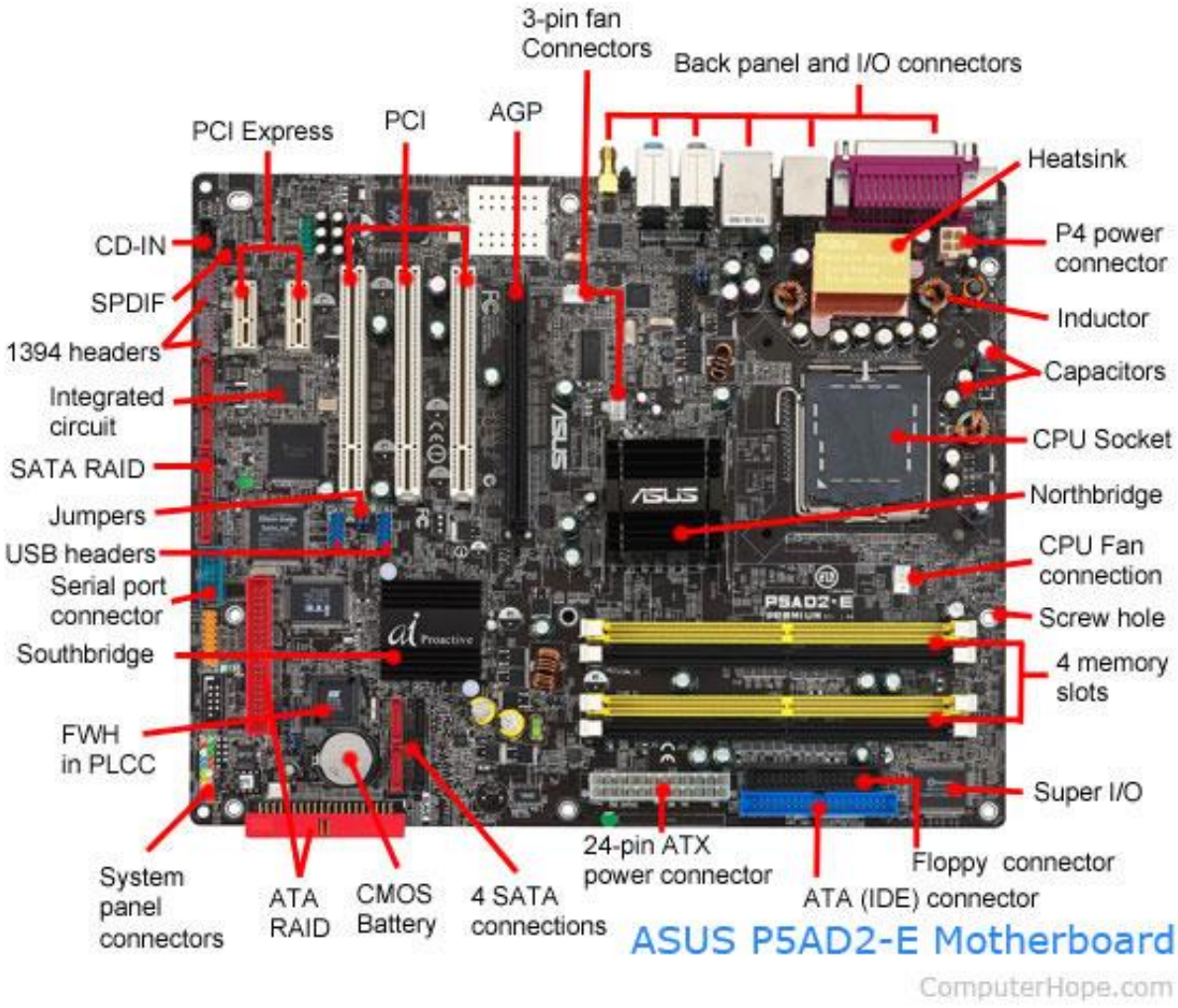
## Aim

Identify the major components of a computer such as motherboard, RAM modules,daughterguards,bus slots,SMPS,internal storage devices and interfacing ports.

## MOTHERBOARD

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.

## Screenshot



## 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. 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.

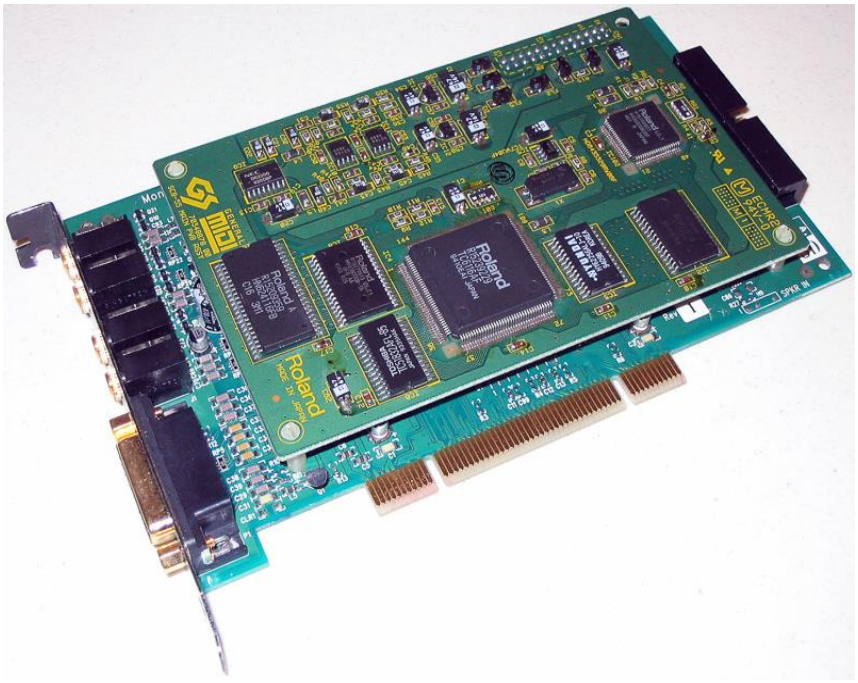
Types of memory module include:

- Trans Flash 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


## Daughter guards

A daughterboard is type of circuit board that plugs in or is attached to the motherboard orsimilar expansion card to extend its features and services. A daughterboard complements

the existing functionality of a motherboard or an expansion card. A daughterboard is connected directly to the motherboard. Unlike expansion cards, which connect with the motherboard using bus and other serial interfaces, daughterboards are usually directly embedded through soldering. Like a motherboard, a daughterboard has sockets, pins, plugs and connectors to be attached to other boards.

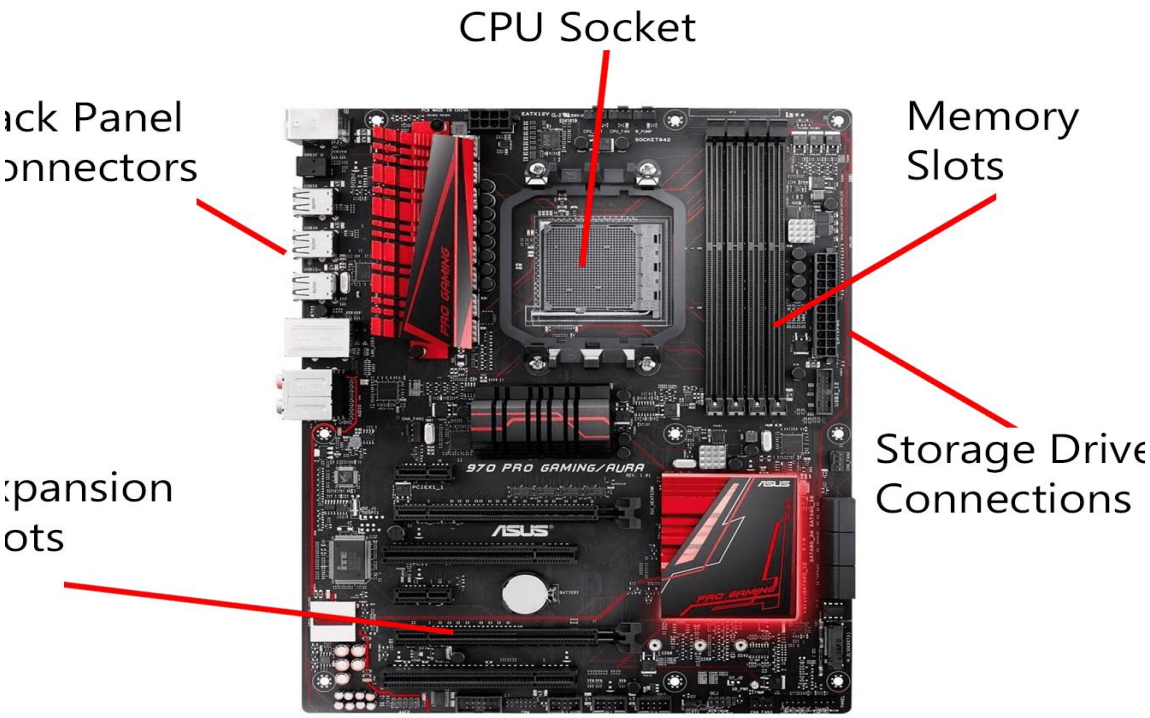


## Bus Slots

Alternatively known as a **bus slot** or **expansion port**, an **expansion slot** is a connectionor 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. Clicking any of the links below provide you with additional details.

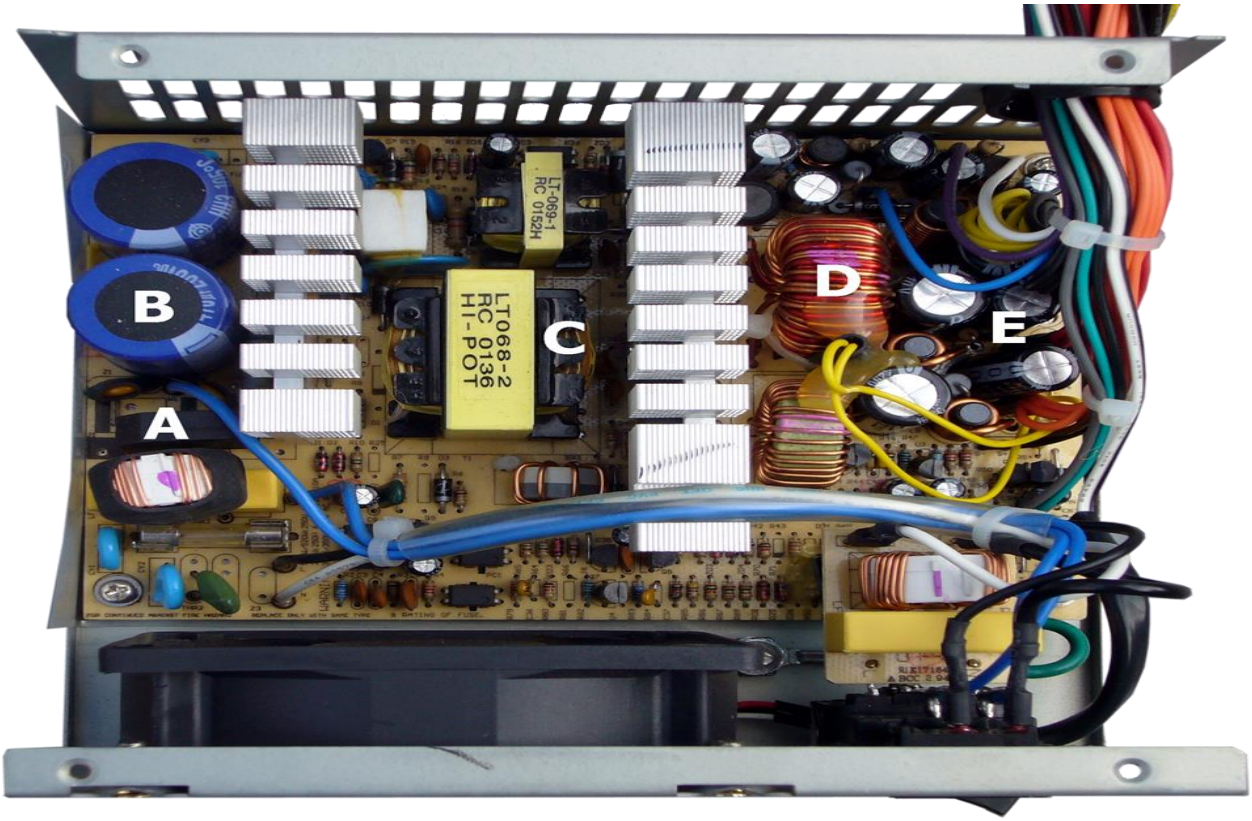
- **AGP** - Video card.
- **AMR** - Modem, sound card.
- **CNR** - Modem, network card, sound card.
- **EISA** - SCSI, network card, video card.
- **ISA** - Network card, sound card, video card.
- **PCI** - Network card, SCSI, sound card, video card.
- **PCI Express** - Video card, modem, sound card,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



## SMPS

SMPS (Switched Mode Power Supply) 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. In the SMPS device, the switching regulators are used which switches on and off the load current to maintain and regulate the voltage output. Suitable power generation for a system is the mean voltage between off and on. Unlike the linear power supply, the SMPS carry transistor switches among low dissipation, full-on and full-off phase, and spend much less time in high dissipation cycles, which decreases depleted strength.



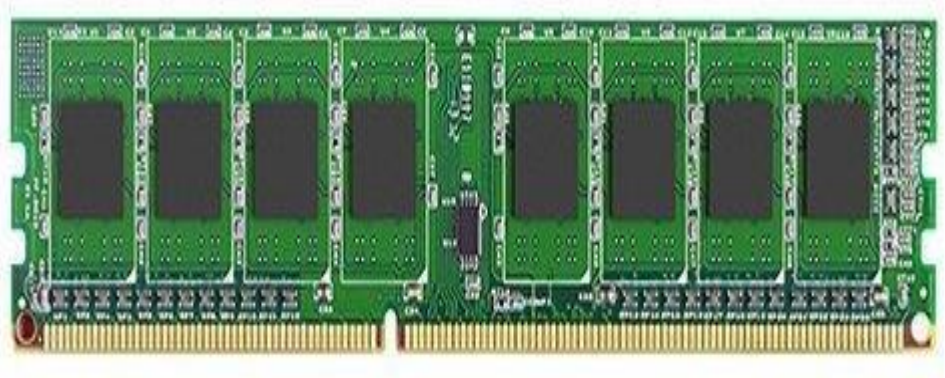
## Internal Storage Devices

A storage device is a piece of hardware that is primarily used for storing data. Everydesktop computer, laptop, tablet, and smartphone will have some kind of storage device within it. There are also standalone, external storage drives that can you can use across devices.Storage is not only necessary for saving files, but also for running tasks and applications. Any file you create or save on your computer saves to your computer's storage device. This storage device also stores any applications and your computer operating system.

### Primary Storage: Random Access Memory (RAM)

Computer random access memory (RAM) is one of the most important components in determining your system's performance. RAM gives applications a place to store and access data on a short-term basis. It stores the information your computer is actively using so that it can be accessed quickly.

A memory module is another name for a RAM chip. It is often used as a general term used to describe SIMM, DIMM, and SO-DIMM memory. 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.



**Secondary Storage: Hard Disk Drives (HDD) & Solid-State Drives (SSD)**

In addition to RAM, every computer also has another storage drive that's used for storing information on a long-term basis. This is secondary storage. Any file you create or download saves to the computer's secondary storage. There are two types of storage device used as secondary storage in computers: HDD and SSD. While HDDs are the more traditional of the two, SSDs are fast overtaking HDD as the preferred tech for secondary storage.

**Hard Disk Drives (HDD)**

A computer hard disk drive (HDD) is a **non-volatile data storage device**. Non-volatile refers to storage devices that maintain stored data when turned off. All computers need a storage device, and HDDs are just one example of a type of storage device.

## Solid-State Drives (SSD)

A solid-state drive (SSD) is a new generation of storage device used in computers. SSDs use flash-based memory, which is much faster than a traditional mechanical hard disk. Upgrading to an SSD is one of the best ways to speed up your computer


## Interfacing ports

A port is a physical docking point using which an external device can be connected to the computer. It can also be programmatic docking point through which information flows from a program to the computer or over the Internet.

### Serial Port

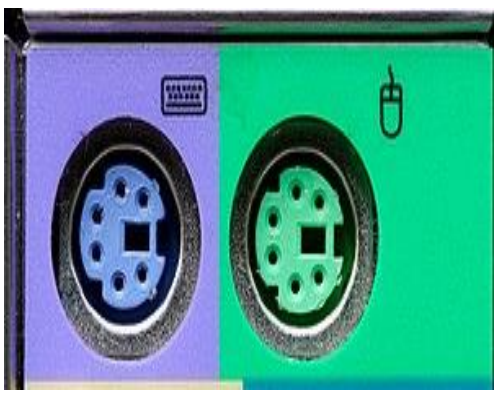
- Used for external modems and older computer mouse
- Two versions: 9 pin, 25 pin model
- Data travels at 115 kilobits per second

**Parallel Port**

- Used for scanners and printers
- Also called printer port
- 25 pin model
- IEEE 1284-compliant Centronics port

**PS/2 Port**

- Used for old computer keyboard and mouse
- Also called mouse port
- Most of the old computers provide two PS/2 port, each for the mouse and keyboard
- IEEE 1284-compliant Centronics port



**Universal Serial Bus (or USB) Port**

• It can connect all kinds of external USB devices such as external hard disk, printer, scanner, mouse, keyboard, etc.

• It was introduced in 1997.

• Most of the computers provide two USB ports as minimum.

• Data travels at 12 megabits per seconds.

**Digital Video Interface, DVI port**

• Connects Flat panel LCD monitor to the computer's high-end video graphic cards.

• Very popular among video card manufacturers.