

BCA 3RD

PC ASSEMBLY & TROBLESHOOTING

**Perform installation, configuration,
and upgrading of
microcompner/computer:**

H/w and S/w requirement

Introduction to Computer Hardware

CPU CASE AND POWER SUPPLY

The PROCESSOR

The MOTHERBOARD

The MEMORY

STORAGE DEVICES

EXPANSION CARDS/PERIPHERAL

DEVICES

PC PORTS

Introduction Computer Software

**HARD DISK MANAGEMENT &
CONFIGURATIONS**

Operating System Installations and upgrades

Hardware Device Driver Installation

Software Installation

Virus Management: Detecting and Removing

DATA RECOVERY Concept

Configuring and Troubleshooting WINDOWS

DISK PARTITIONING

VIRTUAL MACHINES

Intro.to H/W

Computer hardware includes the physical parts of a computer, such as the case, central processing unit, monitor, mouse, keyboard, computer data storage, graphics card, sound card, speakers and motherboard

What is Computer Hardware and Software

Hardware Component Used in Computer

- ✓ Cabinet Case
- ✓ Motherboard
- ✓ Ram
- ✓ Hard Disk
- ✓ CPU
- ✓ SMPS (Switching Mode Power Supply)
- ✓ Keyboard
- ✓ Mouse
- ✓ Monitors
- ✓ Printers
- ✓ Speaker etc

Computer Software and Their Uses

Types of System Software

- Windows
- MacOS
- UNIX® Celebrating 40 years uptime

Application Software's of Computer

- Google
- Ps
- Music
- Office
- ChTips

CPU and PowerSupply

A **central processing unit (CPU)**, also called a **central processor**, **main processor** or just **processor**, is the electronic circuit within a [computer](#) that executes [instructions](#) that make up a [computer program](#). The CPU performs basic [arithmetic](#), logic, controlling, and [input/output](#) (I/O) operations specified by the instructions in the program

A **power supply unit** (or **PSU**) converts [mains AC](#) to low-voltage regulated [DC power](#) for the internal components of a computer. Modern personal computers universally use [switched-mode power supplies](#). Some [power supplies](#) have a manual switch for selecting input voltage, while others automatically adapt to the mains voltage.

Processor & Motherboard

In **computing**, a **processor** or processing unit is an digital circuit which performs operations on some external data source, usually memory or some other data stream. It typically takes the form of a microprocessor, which can be implemented on a single metal–oxide–semiconductor integrated circuit chip.

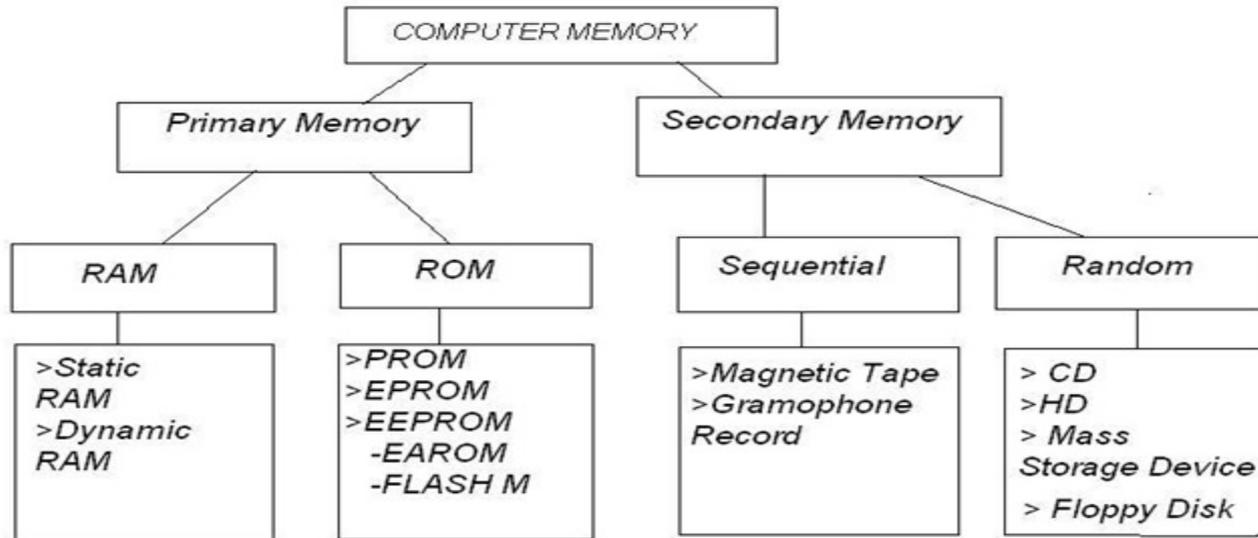
The **motherboard** is a printed [circuit board](#) and foundation of a computer that is the biggest board in a computer [chassis](#). It allocates power and allows communication to and between the [CPU](#), [RAM](#), and all other computer [hardware](#) components.



Memory & Storage devices

In [computing](#), **memory** refers to a device that is used to store information for immediate use in a [computer](#) or related [computer hardware](#) device.

Secondary storage that is separate from computer itself, where software and data can be stored on a permanent basis.



Intro.to Software

Software is a set of programs, which is designed to perform a well-defined function. A program is a sequence of instructions written to solve a particular problem.

There are two types of software –

System Software

The system software is a collection of programs designed to operate, control, and extend the processing capabilities of the computer itself. System software is generally prepared by the computer manufacturers. These software products comprise of programs written in low-level languages, which interact with the hardware at a very basic level. System software serves as the interface between the hardware and the end users.

Some examples of system software are Operating System, Compilers, Interpreter, Assemblers, etc.

Application Software

Application software products are designed to satisfy a particular need of a particular environment. All software applications prepared in the computer lab can come under the category of Application software.

Application software may consist of a single program, such as Microsoft's notepad for writing and editing a simple text. It may also consist of a collection of programs, often called a software package, which work together to accomplish a task, such as a spreadsheet package.

Hard Disk Management & configuration

It enables users to view and manage the [disk drives](#) installed in their computer and the [partitions](#) associated with those drives. As the image below shows, each drive is displayed followed by the layout, type, file system, status, capacity, free space, % free, and fault tolerance

How to open Windows Disk Management

[1 Open the Control Panel.](#)

2 Double-click on **Administrative Tools** if in Classic View or click **Performance and Maintenance** and then **Administrative Tools** if in Category View. Note: If you do not have [admin](#) rights to the computer, this is not available.

3 Once in the Administrative Tools window, double-click **Computer Management** and then click **Disk Management** under the *Storage* section.

Operating System Installations and upgrades

A)clean INSTALL

A clean install is done on a new system or in cases where no upgrade path exists between the current OS and the one being installed.

It deletes all data on the partition where the OS is installed and requires application software to be reinstalled.

A new computer system requires a clean install.

A clean install is also performed when the existing OS installation has become damaged in some way.

B)UPGRADE

If you are staying with the same OS platform, doing an upgrade is often possible.

With an upgrade, system configuration settings, applications, and data are preserved.

It simply replaces the old OS files with the new OS files.

C)MULTI-BOOT

Installing more than one OS on a computer to create a multi-boot system is possible.

Each OS is contained within its own partition and can have its own files and configuration settings.

On startup, the user is presented with a menu to select the desired OS.

Only one OS can run at a time and it has full control of the hardware.

As an example of multiboot, it is possible to install Windows XP, Windows Server, and Linux all on the same system.

This setup can be useful in a test environment where only one PC is available but there is a need to test several different OS and applications

D)VIRTUALIZATION

Virtualization is a technique that is often deployed on servers.

It enables multiple copies of an OS to be run on a single set of hardware, thus creating many virtual machines.

Each virtual machine can be treated as a separate computer.

This enables a single physical resource to appear to function as multiple logical resources.

This type of approach generally demands more physical resources such as CPU processing and RAM because multiple OS's are running on the same machine