

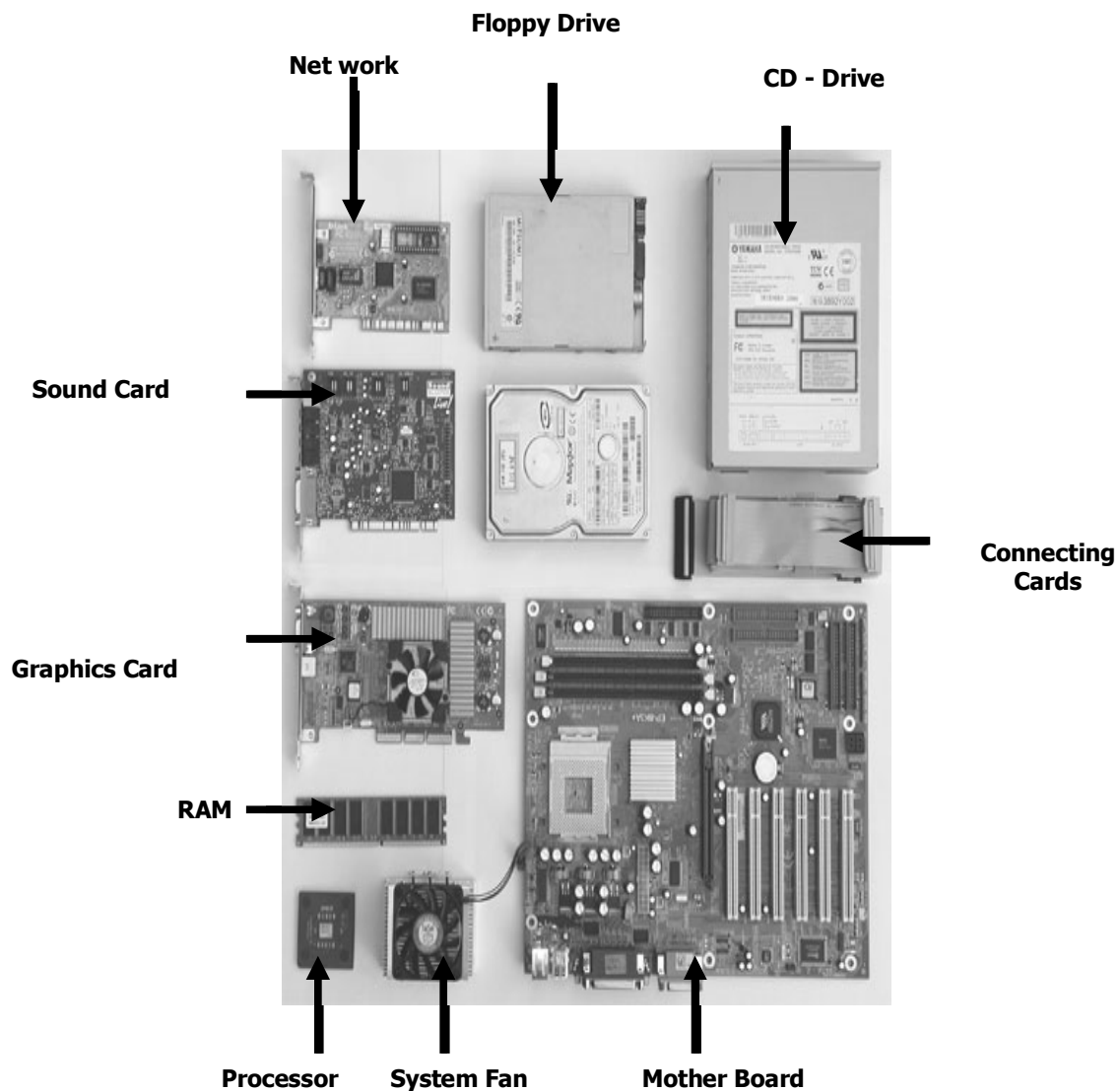
## Unit - II

### Important internal devices of CPU

By completing this module, you will be able to understand and learn the following

- Important parts of CPU
- Mother Board and its components
- Memory – RAM & ROM
- Sound card , Video Card and Net work card
- Installing Storage device

Main parts of the computer:



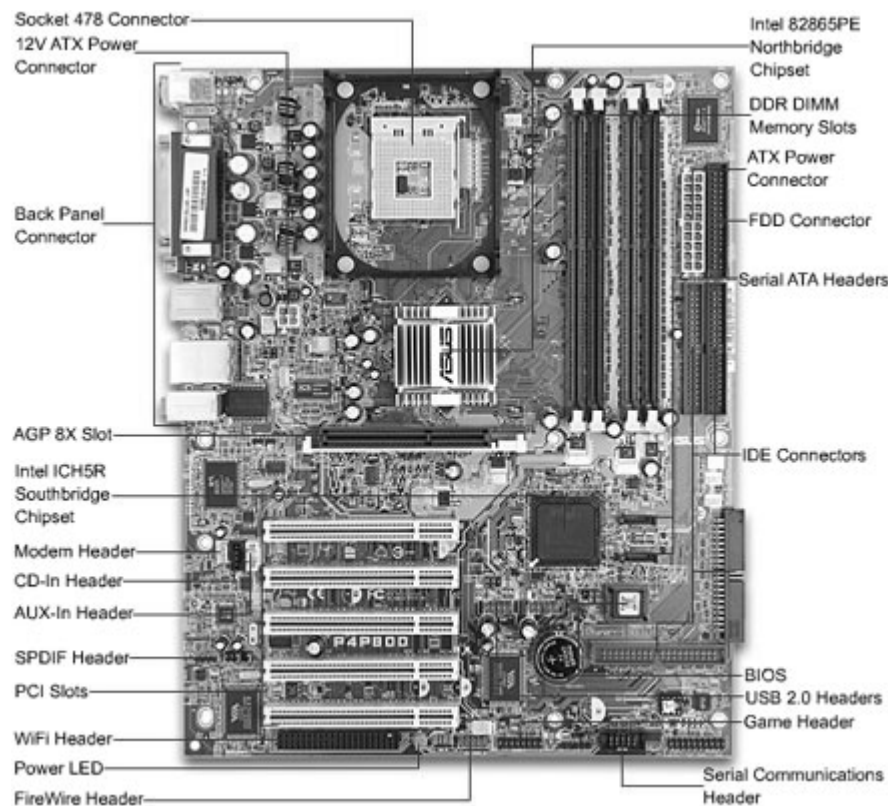
## Processor:

The processor is the main part of the computer. The greater the number of GHz the faster the speed of Personal Computer (PC) and the more expensive the processor will be. The processor is also known as the CPU or Central Processing Unit.



## Mother Board:

- If the processor is the main part of the computer and the RAM is the memory, then the motherboard is the backbone of the computer.
- This is the circuit board that contains the slots and sockets that everything else plugs into.
- Many motherboards now come with onboard sound, eliminating the need for a sound card, video, networking ports and USB ports.
- Several different types of slots can be found on your board. It is important to know what these are for, as the number of them on your motherboard will affect the number of hard disks, memory chips, graphics cards, optical cards, modems, network cards, sound cards.



**Note: Diagram of a motherboard. Note that the location of these components vary, depending on your motherboard.**

**AGP slot:** This is for the graphics card; you only need one AGP slot.

**DIMM slot:** This is for your memory. There are several different types of memory. 2 slots = good, 4 slots = better.

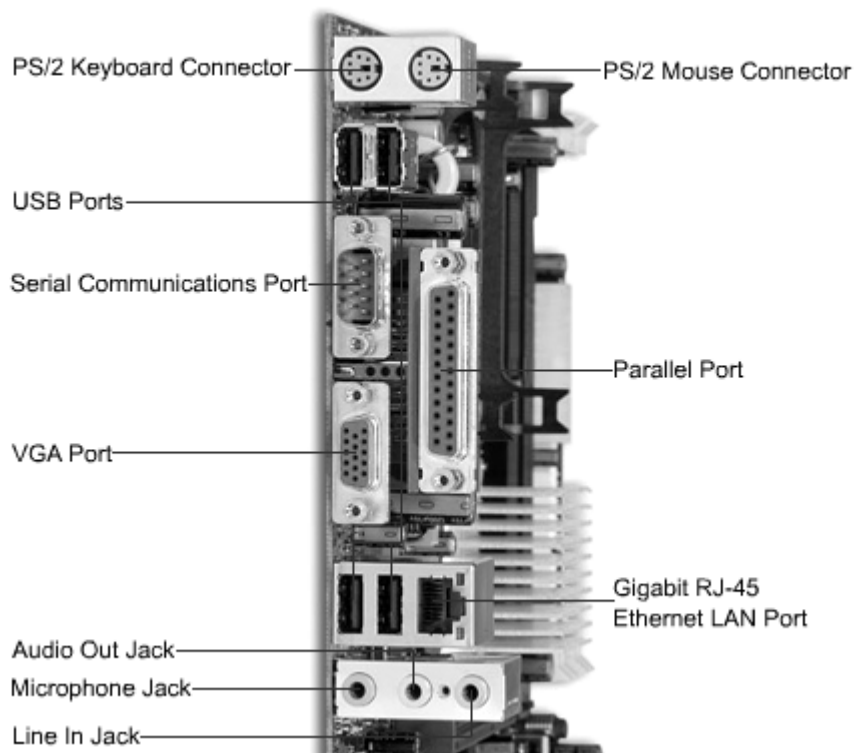
**PCI slot:** This is for cards like sound card, network card, modem etc. These slots will be the ones you use most often, so make sure that mother board have plenty - at least four.

**CPU socket:** Make sure that the socket type is right for the processor you have chosen and the case chosen.

### **Back panel of CPU:**

There will also be a number of ports on the edge of your motherboard, which will form part of the back panel of your PC.

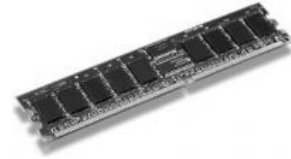
In the example on the right there are PS/2 ports for connecting keyboard and mouse, a parallel port for a printer or scanner, serial ports that will rarely be used, a couple of LAN ports, four USB ports and a sound port. More and more devices like printers and scanners are connecting the computer using USB.



## Memory

### RAM-Random Access Memory:

- Memory is also known as RAM. The more memory you add to a computer in theory the faster it will be.



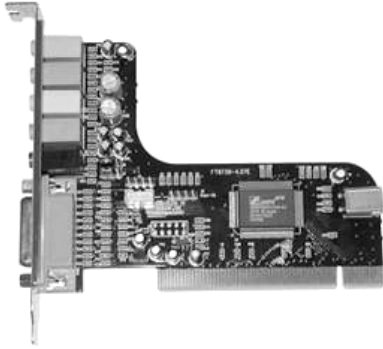
### ROM - Read-Only Memory

- It is an integrated-circuit memory chip that contains configuration data.
- ROM is commonly called firmware because its programming is fully embedded into the ROM chip.
- ROM is hardware and software in one, as data is fully incorporated at the ROM chip's manufacture, data stored can neither be erased nor replaced.
- ROM gives permanent and secure data storage. However, if a mistake is made in manufacture, a ROM chip becomes unusable / useless.
- The most expensive stage of ROM manufacture, therefore, is creating the template. If a template is readily available, duplicating the ROM chip is very easy and affordable.
- A ROM chip is also non volatile so data stored in it is not lost when power is turned off.

### RAM versus ROM

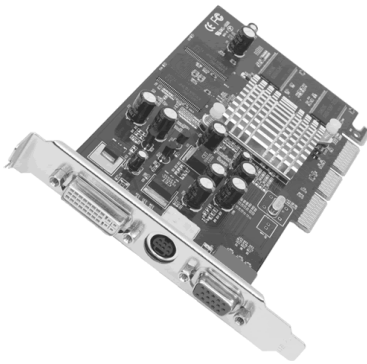
RAM	ROM
<ul style="list-style-type: none"><li>• provides the user random access to stored data</li><li>• provides only short-term memory, since data stored in RAM is lost when power is turned off</li><li>• RAM's data can frequently and speedily be altered and changed at will</li></ul>	<ul style="list-style-type: none"><li>• provides the user random access to stored data</li><li>• Provides long-term storage, since data is permanently etched into the ROM chip.</li><li>• ROM cannot be reconfigured at all</li></ul>

### Sound Card:



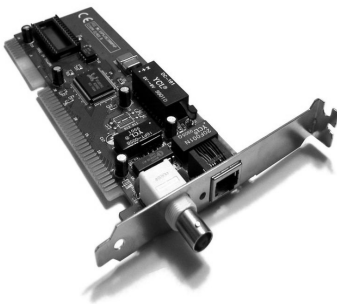
- Responsible for any noise that comes out of your PC (apart from the whirring of fans and spinning drives). Most motherboards now come with built in sound chips.

### Video Card:



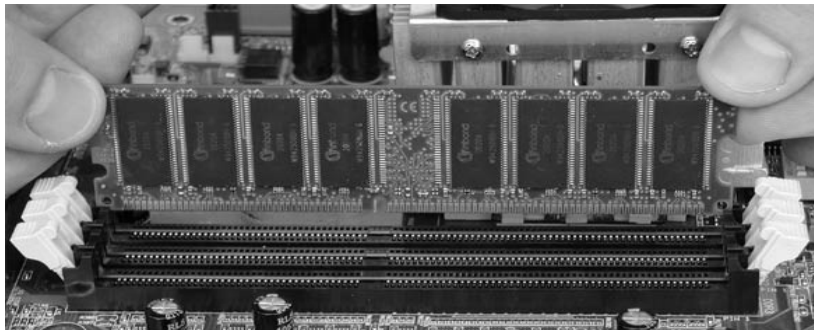
- A video card also referred to as a graphics accelerator card, display adapter, graphics card, and numerous other terms.
- It is an item of personal computer hardware whose function is to generate and output images to a display.
- It operates on similar principles as a sound card or other peripheral devices.

### Network Card:

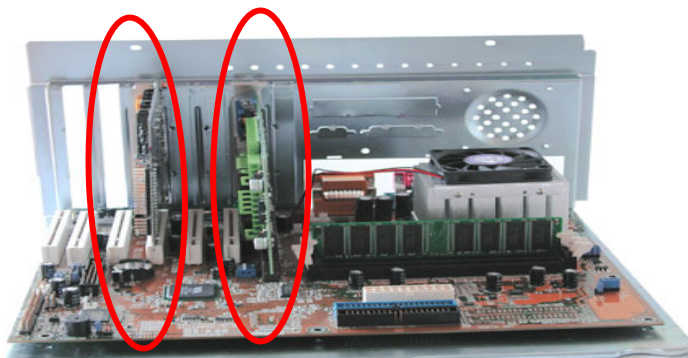


- A network card, network adapter, LAN Adapter or NIC (network interface card) is a piece of computer hardware designed to allow computers to communicate over a computer network.

### Installing RAM



## Inserting Sound and Graphics card



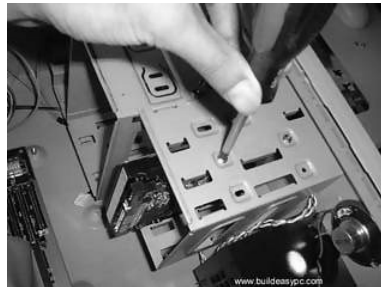
### Storage Device



- A Hard drive is the main storage area of the computer. All software is likely to be stored on it along with all the files.
- A hard drive works in a similar method to the floppy disk, data is stored by magnetizing sections of the disk creating a one, or not magnetizing sections creating a zero.

### Steps in –‘Inserting the Hard Disk’:

- Place hard disk drive into the HDD mounting slot of the case;
- Ensure the IDE/ATA connector is facing outwards.
- Screw the HDD to the case using screws provided with the HDD or the ATX case.



- Insert the ATA 66 cable into the ATA connector of the HDD.
- Make sure the pin 1 on the cable is connected to pin 1 on the HDD connector. Pin 1 is the red or pink strip on the edge of an ATA cable.

- Most new IDE/ATA cables are designed so that it will only go in one way which will correspond to pin 1.



- Push the power cable into the power connector as shown. The power cable is designed to go in one way, so you shouldn't have any problems.



- Connect the other end of the ATA 66 cable to the primary ATA socket of your motherboard as shown.
- Ensure the pin 1 on the cable connects to the pin 1 on the ATA socket.

### Steps in – 'Installation of CD-ROM / DVD-ROM

- Connect the IDE cable to the drives IDE connector.
- Make sure the pin 1 on the cable is connected to pin 1 on the drives IDE connector. Pin 1 is the red or pink strip on the edge of an IDE cable.
- Connect the other end of the IDE cable to the IDE socket on your motherboard as shown below. Ensure sure you connect the cable to pin 1.
- The IDE socket could be your primary or secondary socket depending which socket you choose. If your HDD is on the primary IDE socket and your secondary IDE socket is free, then it is better to use your secondary IDE socket for the CD/DVD-ROM.



### Optical drive:

- An optical drive is a collective term for CD drives, DVD drives, CD RW burners and DVD burners.
- All of these devices read information from an optical disk which is different from the magnetic media like floppy disks.

