

LESSON

6

Hardware and Software

Objective of this Chapter

- 6.1 What is Hardware?
- 6.2 What is Software?
- 6.3 Types of Software
- 6.4 System Software and Application Software
- 6.5 Relationship between Hardware & Software

Introduction

Computer is a type of an electronic machine which stores data, uses it for future, process it and which can be programmed through instructions. Computer is a combination of hardware and software which are inter-dependent. It means without software hardware is limited and without hardware software cannot be operated properly. To work efficiently hardware and software needs each other.

6.1 What is Hardware ?

In the computer world, hardware refers to the physical components like Keyboard, Mouse, Printer, Monitor that make up computer system. Input is feed and output is received through hardware. Data is stored and processed on Hardware. Hardware can be touched and sensed.

Features of Hardware :

- 1. We can touch it.
- 2. We can feel it.
- 3. It occupies space.
- 4. We can process & store data on it.





Fig. 6.1

6.1.1 Computer Case

The Computer case also known as Computer Chassis or System unit or Cabinet etc is the usually made up of plastic or metal box that contains the computer's main parts such as the motherboard, hard drives, etc.

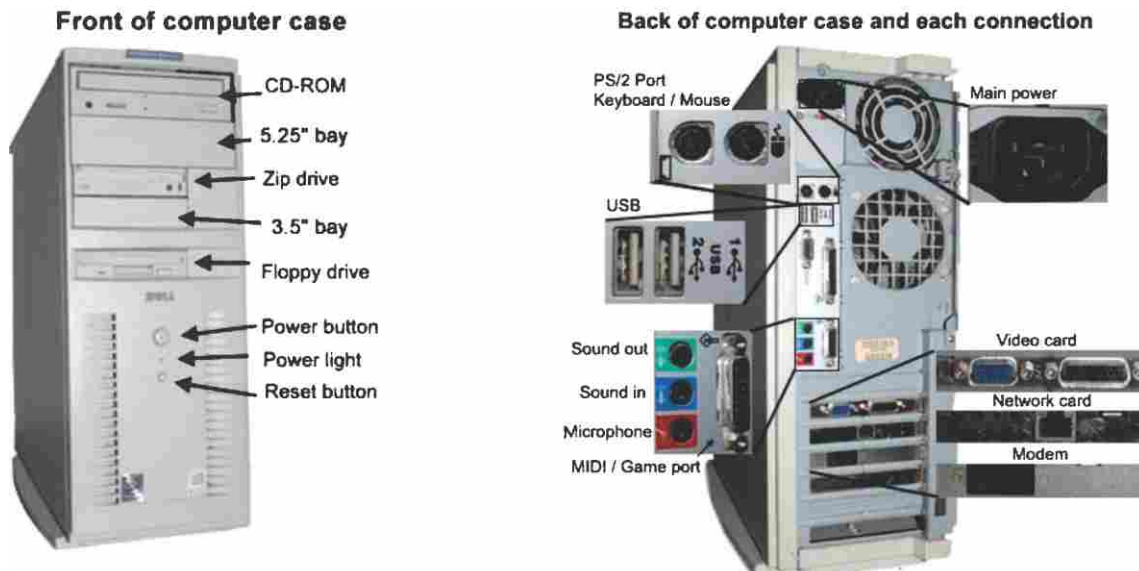


Fig. 6.2 Computer Case Views

6.1.2 Motherboard

The motherboard is a sheet of plastic (board) that holds all the circuitry to connect the various components of a computer system.



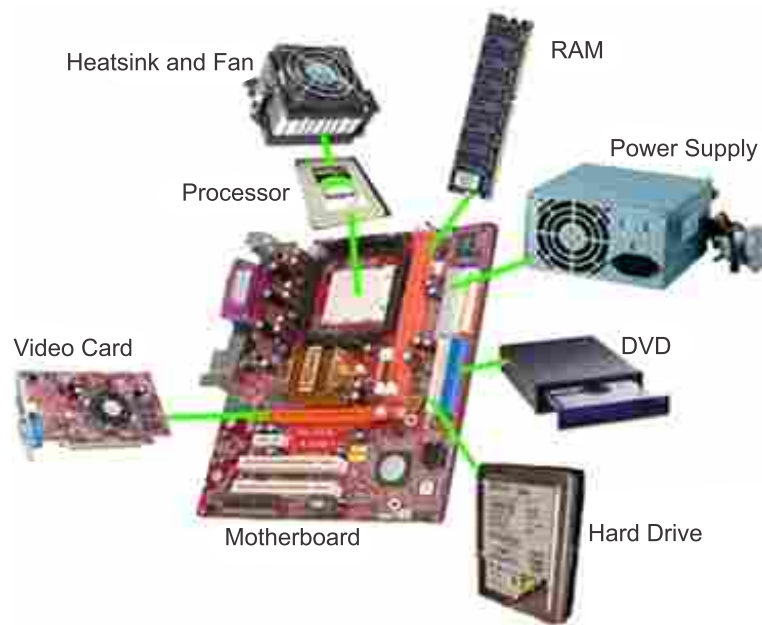


Fig 6.3 Mother Board

Some of the Hardware components that are connected with motherboard are :

- **Hard Drive** : Hard drive Or Hard Disk is the main storage media device that permanently stores all data on the computer.
- **Video Card** : The video card is the device in a computer that outputs visual information to the monitor.
- **Processor** : Processor is the main part of computer system which carries out the instructions of a computer program by performing the basic arithmetical, logical, control, and input/output operations of the system. It acts as a brain of the computer system & termed as CPU
- **FAN** : Every computer has a cooling fan designed primarily to prevent the CPU from overheating. Cooling fans may bring cool air into the computer cabinet and draw hot air out of it.
- **RAM** : It is a type of data storage used in computers that is generally located on the motherboard. This type of memory is volatile and all information that was stored in this memory is lost when the computer is turned off.
- **Power Supply (SMPS)** : The component that supplies power to a computer. it is also called switched-mode power supply (SMPS).
- **CD/DVD ROM** : It is used to run CD/DVD in the computer.

6.1.3 Important points for taking care of Hardware.

If different components of computer are not properly looked after, they get spoiled very soon. Following points should be kept in mind while handling Hardware:

1. We must keep all the parts of computer clean.
2. We must cover it after use.
3. We must not pull cables of computer parts.
4. We must press keyboard keys gently.
5. We must not eat anything in the Computer Room.
6. We must keep Hardware properly
7. We must handle different parts of computer in a proper way.
8. We must use soft cloth or brush to clean computer.
9. We must not clean the equipment while the computer is turned on.

6.2 What is Software

A Computer without instructions is like a car without a driver. It requires a set of instructions given by us to work on. Sequence of instructions is called program.

Software is the collection of program that are stored and run on computer hardware and help user to work on the computer. Software is a program stored in a storage device. You can make a software or you can get ready made software from market. e.g. MS Word, Games etc.

Features of software :

1. Software has no weight.
2. We cannot touch it.
3. A software helps the computer to work.
4. These are costly.



A group of instructions is known as **Program**

Many programs are combined to make up a **Software**

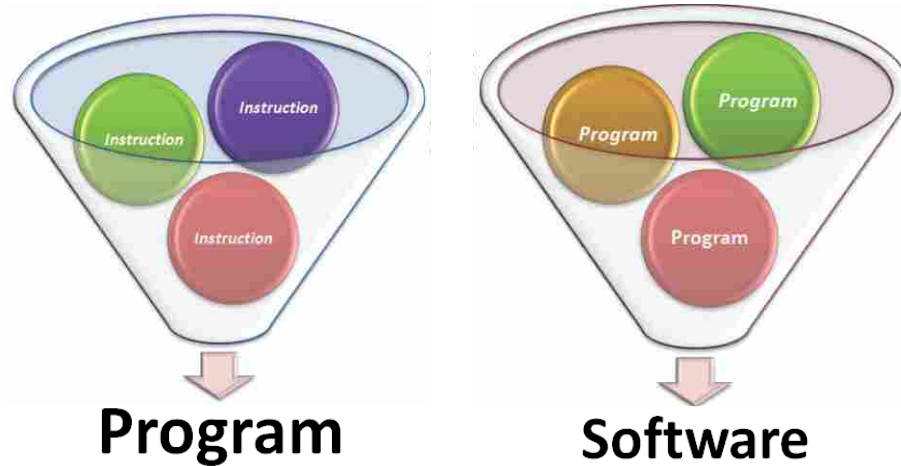


Fig 6.4

6.3 Types of Software

Software is of two types :

- System Software
- Application Software

6.3.1 System Software

System Software is defined as a collection of programs that control the operation and internal working of the computer system. It reads data from input devices and transfers the processed information to output devices. It works like a manager. It plays an important role in computer. We cannot take any work from computer without it. Example of system software are- Operating System, Utility Program, Language Translator.

Features :

1. It is costly.
2. It is difficult to generate system software.
3. It is complex. It can be developed by an expert only
4. A computer system cannot work without it.





Fig. 6.5 System Software

6.3.2 Application Software

It is used for an important task. These are sets of program developed by programmers in order to perform specific types of jobs like creating the documents, making calculations, preparing results & reports, creating graphics, arranging data in an organized way. System software is the need of every computer but application software can be different for different computers. Today there are many application software available in the market. e.g wordprocessor, spreadsheet, presentation tool, graphics software, database etc.

Features of application software :

1. It depends on user requirement
2. It is cheaper than system software
3. Graphics, documents, reports are easily created in them.



Fig. 6.6 Application software

6.4 System Software and Application Software

System software is different from Application Software in many aspects. Let us differentiate the two :

S.No.	System Software	Application Software
1.	System software is compulsory to operate a computer. Computer cannot work without it.	Application software is not compulsory to operate a computer. Computer can work without it.
2.	It is very complex. It can be made by expert only.	It is generally simple. A person with less experience can make it.
3.	It is expensive.	It is cheaper
4.	System software interact directly with hardware. It depends on operating system	Application software does not interact directly with hardware. It depends on system software
5.	Example : window, Unix etc.	Example : MS-Word, MS-Excel, Paint etc.

6.5 Relationship Between Hardware And Software

For a Computer to produce useful output its **Hardware and Software** must work together. Hardware & software cannot work properly without each other. Hardware components are controlled by software. For example: when we purchased a new mobile phone & memory card from market they are hardware's. We upload songs & games on them they act as software's.

Another example is ATM machine. ATM machine acts as a hardware & the set of instructions that are followed by machine to operate its functions are software. In the same way in washing machine, washing machine acts as hardware & the set of instructions or process by which it rinses & spins the clothes are known as software.





Fig 6.6

Points to Remember

1. Parts of computer are called Hardware.
2. Hardware can be touched and sensed.
3. Printer, Monitor, Keyboard, Mouse, Hard Disk are parts of Hardware.
4. Set of all programs are called Software.
5. Software is of two types : System and Application Software.
6. We cannot touch software.
7. MS-Word, MS-Excel, MS-PowerPoint are examples of Application Software.

Exercise

1. Fill in the Blanks using the right option :

1. Computer is a product of hardware and
(1) Software (2) Application (3) Program (4) All of these
2. Set of instructions is called
(1) Software (2) Hardware (3) Program (4) Application
3. Group of programs is called
(1) Hardware (2) Software (3) Processor (4) None of these



4. Software is mainly of types.
(1) Two (2) Three (3) Four (4) Five
5. Computer cannot work without
(1) Word (2) Excel
(3) System software (4) PowerPoint

2. Write down True or False :

1. Other name of software is hardware.
2. All the instructions given in the form of program are called Software.
3. We cannot touch Hardware.
4. System and Application Software are two types of Software.
5. System software is expensive.

3. Which of the following are Hardware :

1. Hard disk
2. CD
3. Mouse
4. MS-Paint
5. Presentation
6. Keyboard

4. Short Answer type Questions :

1. What is Hardware?
2. What is Software?
3. Name two types of Software.
4. Give four examples of Hardware.
5. What are the qualities or features of Software?

5. Long Answer type Questions :

1. Write the difference between Application Software and System Software.
2. Write a note on Hardware.



3. What are the points while taking care of Hardware?
4. Define Motherboard. Explain any of its five parts?

Group Activities

1. Write the name of the Pictures given below.



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