



PUBLIC SCHOOL DARBHANGA
SESSION (2020-21)
COMPUTER SCIENCE CHAPTER-1
COMPUTER SYSTEM

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Some decades ago, computers were known to a common man as simply a fast calculating device. But now with Information Technology (IT) revolution, computers have entered into each and every field of life. People in every walk of life now understand that the knowledge of computers is very essential if they need to keep pace with the information and technology in society. Computers have relieved us from the boring and tiring tasks like copying, comparing, choosing, checking etc. and now human time and labour can be used much more



Fig. 1.1: Parts of Computer

effectively.

CHARACTERISTICS OF COMPUTERS

What has made computers so popular and essential that we feel their need in any task we do? The answer lies in the following:

1. **Speed:** Computers work at an enormous speed, so much so that while talking about computer speed, minutes and seconds seem to be a lifetime because time taken by a computer to execute an instruction ranges from picoseconds to nanoseconds to microseconds.

Usually the speed of computer is measured in MIPS (million instructions per second). So if we say that the speed of a computer is 60 mips, it means that the computer can execute 60 million instructions in one second.

2. **Accuracy:** Another very important characteristic of computers is the accuracy of results. It can give a result of very complicated calculations accurate upto say 10 decimal places (depending upon the type of computer) within fraction of a second. But yes, a computer follows the principle of GIGO i.e., Garbage in Garbage out. If the computer is given correct data and instructions, then only it will return an accurate result.

3. **Diligence:** Imagine doing the same work a number of times. You will definitely feel tired or bored. But a computer neither gets tired nor bored doing the same task as many number of times as you want.

4. **Versatility:** Computers are capable of doing varied types of jobs. For example, on your personal computer you can play games, do mathematical calculations, surf the Internet, send e-mail, draw pictures etc.

5. **Enormous Storage Capacity:** Computers can store a large amount of information and data in their memory. The data can be stored on external storage devices like CDs (Compact Disks) and Pen drives. This way the data can be taken anywhere. Data from the computer's memory and from the storage devices can be retrieved accurately anywhere and at anytime. This has also made the workplaces free of the junk of loads of files with old records.

AREAS OF COMPUTER APPLICATION

1. **Education:** To make our next generation ready for a computer-dominated world, computers have been introduced in every school and college. A time has come when there can be classrooms without teachers. Each student can learn at his/her own pace and can spend as much time on a particular topic as he/ she wants. He/she can then evaluate himself/herself on the topic using on-line examination.

2. **Medicine:** Computers are acting as doctors in remote areas where medical experts or even doctors are not available. In hospitals, computers are being used to monitor patients. Many operations are being done by robots controlled by expert surgeons sitting far away from operation theatre.

3. **Weather Forecasting:** Supercomputers have proved to be of great help to meteorologists in forecasting the weather worldwide. This has helped in reducing human and animal casualties and damage to crops.

4. **Quality Improvement:** Computers help in designing high quality products. Computers Aided Design (CAD) software helps engineers to design machine parts on computers and study the effects of various stress factors on its various parts. This helps in creating the better design.

5. **Better Service:** Computers at railways and airline reservation counters have made the process of reservation/cancellation of tickets very easy and less tiresome. Now people do not have to stand in long queues for reservation of tickets at some restricted counters. Tickets can be reserved/cancelled for anywhere from anywhere. Nowadays one can sit at home and contact various travel agencies on internet and get a whole tour to any place booked including the railway/airline, hotel reservation. Computers in banks have improved their services tremendously. Introduction of credit cards and ATM (Automated Teller Machine) have resulted in easier shopping and drawing of money.

6. **Better Management by Government:** Computers have helped various departments of government in successful planning and control. For example, law enforcement, healthcare, land records and registration, billing, etc.

7. **Data Management:** In the departments like Income Tax and National Stock Exchange where everyday enormous amount of data has to be dealt with, computers have helped in replacing huge stacks of files by a few disks and drives.

8. **Entertainment:** Besides many interesting games which can be played on personal computers (PCs), computer graphics have brought a revolution in the cine world also. Movies like Jurassic Park and Godzilla have been made using computer graphics.

9. **Information Access and Mailing:** Internet has been the best gift of computers to our society. Any information about anything can be had anywhere in the world by just sitting in front of your computer, mobile phone or smart television and connecting to the internet. E-mail and chats on the internet have literally brought people of the world close. There are many more applications like Desk Top Publishing, Research, Defence, Space Travel etc. where also use of computers have brought a revolution.