INTRODUCTION TO ICT

UNIT OUTCOME

Students will be able to:

- ✎ understand the components of ICT;
- ✎ recognize the major system unit components;
- ✎ recognize the major motherboard components.

1.1 BASICS OF ICT

Let us revise some basic concepts of ICT that we have learned in the earlier grade.

● Revision

When computer and communications technologies are combined, the result is Information and Communications Technology.

Fig. 1.1: Communications Technology—An important part of ICT

Information and Communications Technology (ICT) refers to the concept of using technology to get information. ICT involves the use of computers and other electronic devices to access information easily and quickly. Almost all the countries of the world, including Ethiopia, have recognized ICT as an important source to promote computer literacy and enhance the overall knowledge level of students. As evident from the above definition of ICT, this concept merges computing with high-speed communication links carrying data, sound and video. Examples of Information and Communications Technology include not only personal computers but also new forms of telephones, televisions, appliances, and various hand held devices.

● Components of ICT

ICT refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication media.

Modern Information and Communication Technologies have created a "global village", in which people can communicate with others across the world, as if they were living next door. For this reason, ICT is often studied in the context of how modern communication technologies affect society.

What is an ICT System?

An ICT system is a set-up consisting of hardware, software, data and the people who use them. It commonly includes communications technology, such as the Internet.

ICT and computers are not the same thing. Computers are the *hardware* that is often part of an ICT system.

Input, Output and System Diagrams

What comes out of an ICT system is largely dependent on what you put into the system to begin with.

ICT systems work by taking inputs (*instructions* and *data*), processing them and producing outputs that are stored or communicated in some way. The better the quality of inputs, the more useful the outputs.

Garbage In, Garbage Out (GIGO)

ICT systems cannot function properly if the inputs are inaccurate or faulty; they will either not be able to process the data at all, or will output data which is erroneous or useless.

GIGO is a useful term to remember in the examination—it can help explain many issues such as why validation is needed and why accurate data is valuable.

> GIGO stands for Garbage In, Garbage Out.

An ICT System Diagram

A system is an assembly of parts that together make a whole. ICT systems are made-up of some or all of the parts shown in Fig. 1.2. Various devices are used for input, processing, output, and communication.
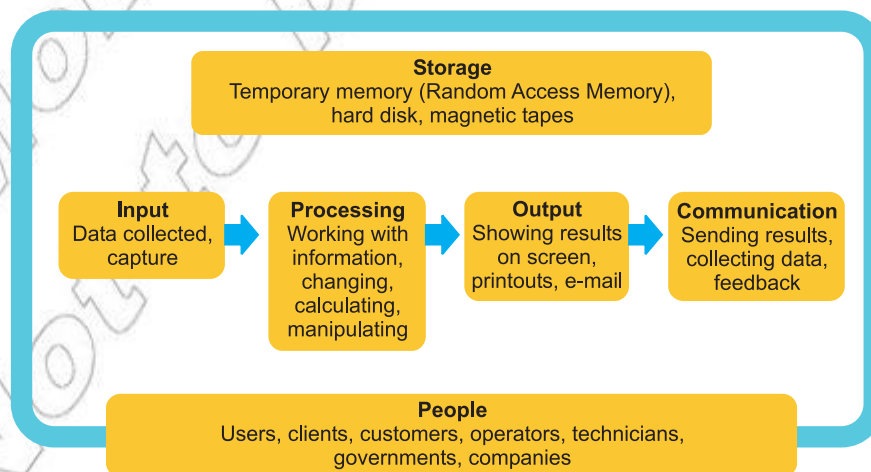

Fig. 1.2: ICT system diagram

Feedback

It is sometimes good to have feedback in an ICT system. This is when the *output* from a system **feeds back** to influence the *input* and the process repeats itself.

Media Integration

Methods used for *input* to and *output* from ICT systems vary a lot. So, you should be familiar with examples of input and output formats.

Input and output formats are the different kinds of *media* that are used to either gather and collect *data* and instructions or to display, present or issue the outputs of processing.

Up until recently, most media formats required dedicated devices—for example, digital cameras to take *digital* photographs, scanners to digitise images for use on a computer, or *DVD* players for video playback—so the correct devices are needed in order to work with each media format.

There is now a growing tendency for multi-purpose ICT devices or convergence. The driving force is the communication power of the Internet, and the increasing availability of small high-powered electronic technology. This means that you can now get an all-in-one box that can do the same thing as several different ones did before it. Some examples are:

(*i*) Combined printers, scanners and photocopiers

(*ii*) Televisions with built-in *Internet connections* and *web browsers*

(*iii*) Mobile phones (see Fig. 1.3) that can take photos, record video, access the Internet and playback music.

Fig. 1.3: Mobile phones— Multipurpose ICT devices

The Internet

The Internet is a worldwide system of interconnected computer networks. When you connect your computer to the Internet via your Internet Service Provider (ISP), you become part of the ISPs network, which is connected to other networks that make up the Internet.
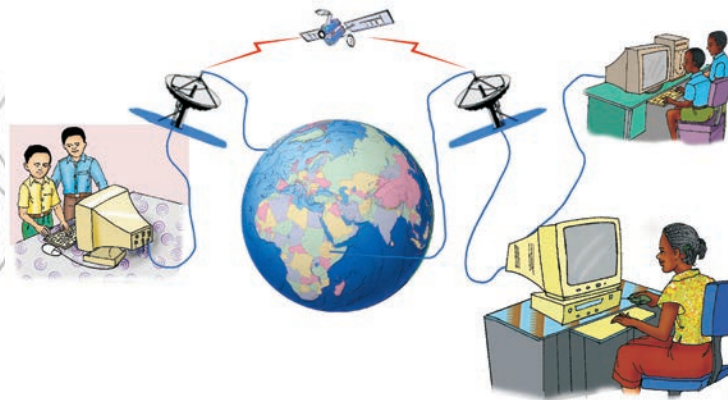
Fig. 1.4: Working of Internet

Connecting to the Internet

To connect to the Internet, the following are needed:

(*i*) a computer

(*ii*) telephone line (cable being the exception)

(*iii*) modem and/or router

(*iv*) an ISP (Internet Service Provider)

(*v*) Web browser, *e.g.*, *Internet Explorer*, *Mozilla Firefox*, *Google Chrome*, *Safari*, *Opera,* etc.

Intranet

An intranet is a network that works like the Internet but is only available within a particular organization, not to the public. An intranet may have web pages used to share company specific data within that company, such as internal telephone numbers or details of employee benefits.

Network

A computer network (see Fig. 1.5) consists of a number of computers linked together to allow them to share resources. Networked computers can share *hardware*, *software* and *data*.
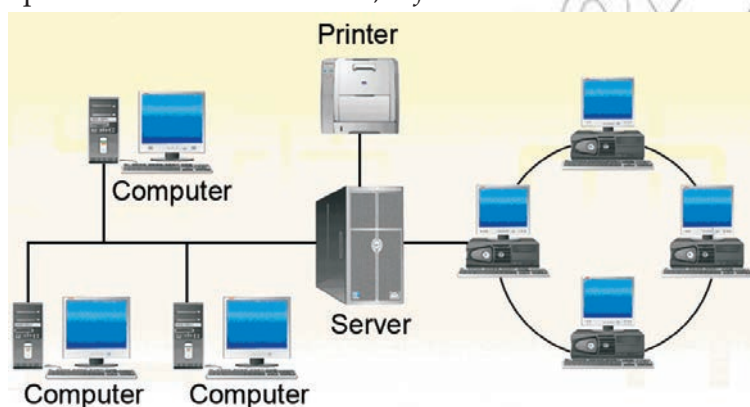

Fig. 1.5: A computer network

Most computer networks have at least one server. A server is a powerful computer that provides one or more services to a network and its users, for example, *file storage* and *e-mail*.

Types of Networks

The two main types of network are Local Area Network (LAN) and Wide Area Network (WAN).

Local Area Network (LAN)

A LAN (see Fig. 1.6) covers a small area such as one site or building, *e.g.*, a school or a university campus.
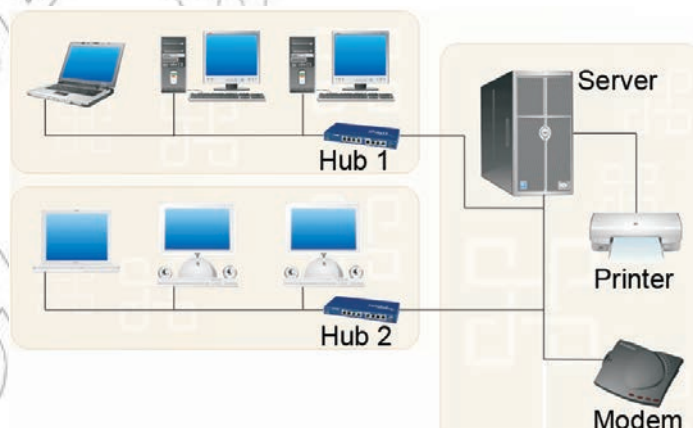

Fig. 1.6: LAN—Local Area Network

A school network is usually a LAN.

Wide Area Network (WAN)

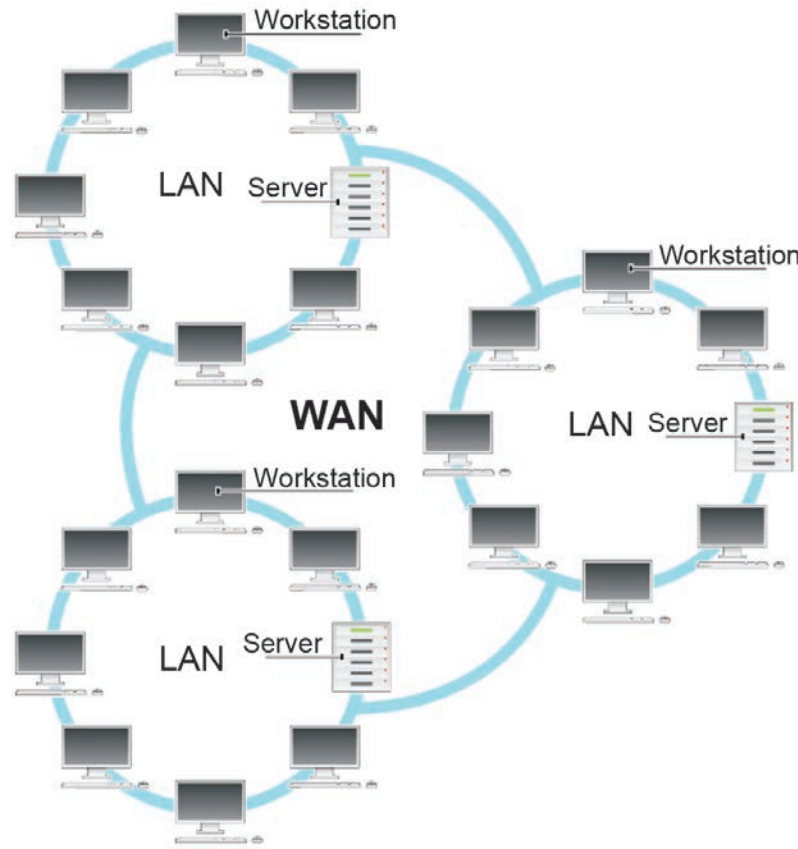A WAN (see Fig. 1.7) covers a large geographical area. Most WANs are made from several LANs connected together.

Fig. 1.7: WAN—Wide Area Network

Some important points about WANs are:

(*i*) The *Internet* is a WAN.

(*ii*) A network of bank cash dispensers is a WAN.

(*iii*) LANs are often connected to WANs, for example, a school or college network could be connected to the Internet.

(*iv*) WANs can be connected together using the Internet, leased lines or satellite links.

> *note* The main components of Information and Communication Technology (ICT) are computer and communication networks.

● Characteristics of Valuable Information

All the information is not helpful to a business or an organization. It might be detailed, but has been obtained for too much cost. What are the main features of a good quality information in a business or an organization?

Table 1.1 summarizes the key characteristics of good quality information, and suggests ways in which information can be improved if it is not quite up to the standard.

Table 1.1: Characteristics of Valuable Information

Quality Required	Purpose
Relevant	The information obtained and used should be **needed** for decision-making. It does not matter how interesting it is. Businesses or organizations are often criticized for producing too much information simply because their information systems can "do it". A good way of ensuring relevance is to closely define the objectives of the information reports. Another way to improve relevance is to produce information that focuses on "exceptions," *e.g.*, problems, high or low values, where limits have been exceeded.
Up-to-date	Information needs to be timely if it is to be used. For example, the manager of a large retail business needs daily information on how stores are performing, which products are selling well (or not) so that immediate action can be taken to improve business. To improve the speed with which information is produced, businesses or organizations usually need to look at upgrading or replacing their information systems.
Accurate	As far as possible, information should be free from errors (*e.g.*, the figures add up; data is allocated to the correct categories). The users of information should be informed whenever assumptions or estimates have been used. Accurate information is usually a function of accurate data collection. If information needs to be extremely accurate, then more time needs to be allocated for it to be checked. However, businesses or organizations need to guard against trying to produce "perfect" information—it is often more important for the information to be up-to-date than perfect.
Meet the needs of the user	Users of information have different needs. The managing director does not have time to trawl through thick printouts of each week's production or sales listings—he or she wants a summary of the key facts. The quality control supervisor will want detailed information about quality testing results rather than a brief one-line summary of how things are going. It is a good idea to encourage users to help develop the style and format of information reporting that they require.
Easy to use and understand	Information should be clearly presented (*e.g.*, use summaries, charts) and not too long. It also needs to be communicated using an appropriate medium (*e.g.*, e-mail, printed report, presentation). Businesses should also consider developing "templates" which are used consistently throughout the organization—so that users get used to seeing information in a similar style.
Worth the cost	Often forgotten. Information costs money. Data is costly to collect, analyze and report. Information takes time to read and assimilate. All users should question whether the information they receive/have requested is worthwhile.
Reliable	Information should come from authoritative sources. It is a good practice to quote the source used—whether it be internal or external source. If estimates or assumptions have been applied, these should be clearly stated and explained.

Integration of Information Services

Alongside the joining together of technologies, there is also a tendency toward the integration of common public information services.

Digital television by satellite, cable or terrestrial aerial now gives access to many channels that have interactive content, which can be used in a way similar to the web. The digital radio provides large amounts of text data to be transmitted along with the signal.

The *Internet* now enables broadcasts from radio and TV stations to be 'time-shifted' by the user, who watches or listens to the programme whenever required.

News services and the mass media such as newspapers, radio, and television are making themselves available so that people can access them when they want and wherever they are. Two of the key reasons for this are:

1. The growth of *broadband* Internet access that allows lots of information to be viewed quickly and effectively.

2. The success of *digital broadcasting*, the signals of which can carry very much more content than old style *analog* TV and radio.

ACTIVITY 1.1

THE CHARACTERISTICS OF VALUABLE INFORMATION

Students will discuss in small groups the characteristics of valuable information.

Fig. 1.8: Students discussing the characteristics of valuable information

In order for information to be valuable, it must have the following characteristics:

1. **Accurate.** Accurate information is free from error.

2. **Complete.** Complete information contains all of the important facts.

3. **Economical.** Information should be relatively inexpensive to produce.

4. **Flexible.** Flexible information can be used for a variety of purposes, not just one.

5. **Reliable.** Reliable information is dependable information.

6. **Relevant.** Relevant information is important to the decision-maker.

7. **Simple.** Information should be simple to find and understand.

8. **Timely.** Timely information is readily available when needed.

9. **Verifiable.** Verifiable information can be checked to make sure it is accurate.

🔑 KEY CONCEPTS

➤ ICT refers to technologies that provide access to information through telecommunications. It focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication media.

➤ An ICT system is a set-up consisting of hardware, software, data and the people who use them. It commonly includes communications technology, such as the Internet.

➤ The Internet is a worldwide system of interconnected computer networks.

➤ A computer network is a number of computers linked together to allow them to share resources. The two main types of network are Local Area Network (LAN) and Wide Area Network (WAN).

➤ The main components of ICT are computer and communication networks.

➤ The characteristics of valuable information are: relevant, up-to-date, accurate, meet the needs of the user, easy to use and understand, worth the cost, reliable.

ASSESSMENT 1.1

Fill in the Blanks

1. When computer and communications technologies are combined, the result is ....
2. ICT refers to technologies that provide access to information through ....
3. An ICT system is a set-up consisting of ...., ..., ... and people who use them.
4. .... is a worldwide system of interconnected computer networks.

State Whether True or False

1. There are two important components of ICT—computers and communications.
2. Communications technology is not called telecommunications technology.
3. ICT and computers are the same thing.
4. GIGO stands for Go In, Go Out.
5. All the information is helpful to a business or an organization.

Answer the Following

1. Identify and explain the components of ICT.
2. List the characteristics of valuable information.

Suggested Activity

Identify the components of Information and Communications Technology such as computer, communication networks, etc.

Field Trip

Organize a field trip to various places like Cyber Cafe's, Universities, Private Colleges, or Ethiopian Telecommunication Corporation (ETC) stations to find out and report on: Components of ICT.

1.2 COMPUTER SYSTEM

Computer is perhaps the most powerful and versatile tool ever created by human being. In today's world, the use of computers has increased so rapidly that we can no longer ignore them. Computers influence our lives in one way or the other. These days we see computers being used to perform several functions that have made our life easy. The list of services for which computers are used is a long one.

What is a Computer?

Computer is an electronic device that can accept, store and process data under the control of a set of instructions. The instructions, called a *program*, are stored in the computer when in use, so they can be executed automatically.

A computer appears to be far more intelligent and informed than human beings but the fact is, it cannot perform any task on its own. We need to give the computer instructions on exactly what it has to do.

If an unanticipated situation arises, computers will either produce wrong results or abandon the task altogether. They do not have the potential to work out alternative solutions.

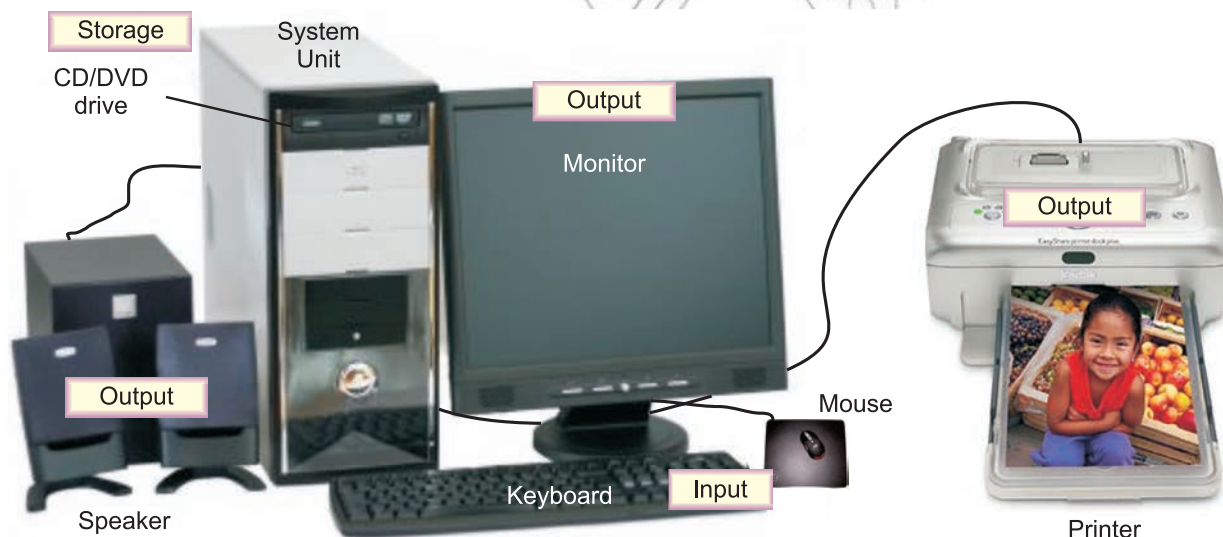Figure 1.9 shows some of the main components of a computer system:

Fig. 1.9: Main components of a computer system

● Major System Unit Components

The *System Unit* is also called a *case*. It is a box that houses the motherboard (into which processor and RAM chips are plugged), power supply, as well as secondary storage devices—floppy disk drive, hard disk drive, and CD or DVD drive. The case comes in desktop or tower models. It includes a power supply unit and a fan to keep the circuitry from overheating. The number of buttons on the outside of the computer case will vary, but the on/off power switch will appear somewhere, either front or back. Figure 1.10 illustrates the front side of system unit.
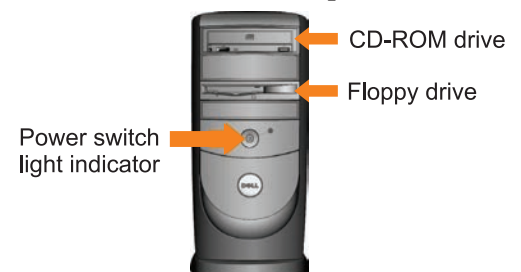

Fig. 1.10: Front side of System Unit
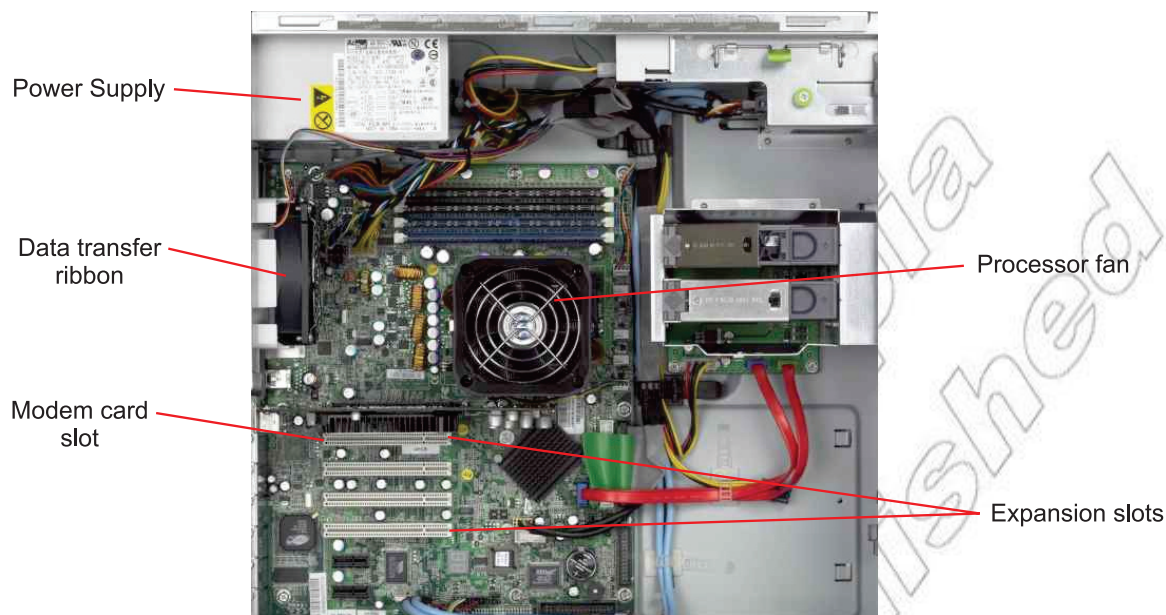
Figure 1.11 shows the inside of system unit.

Power Supply

Data transfer ribbon

Modem card slot

Processor fan

Expansion slots

Fig. 1.11: Inside of system unit
(The arrangement of the components varies among different models)

Let us discuss the major system unit components and their functions:

Motherboard

The *motherboard*, or *system board*, is the main circuit board in system unit. The motherboard (see Fig. 1.12) consists of a flat board that fills one side of the case. It takes care of the entire system task in one way or the other. The primary function of the motherboard is to serve as the base upon which a computer's components are built. It contains both soldered, non-removable components and sockets or slots for components that can be removed—microprocessor chip, RAM chips, and various expansion cards.
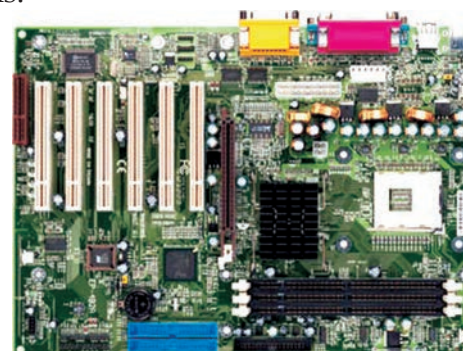

Fig. 1.12: Motherboard

Power Supply

The electricity available from a standard wall outlet is Alternating Current (AC), but a computer runs on Direct Current (DC). The *power supply* is a device that converts AC to DC to run the computer. The on/off switch in your computer turns on or shuts off the electricity to the power supply. Because electricity can generate a lot of heat, a fan inside the computer keeps the power supply and the other components from becoming too hot.

Electrical power drawn from a standard AC outlet can be quite uneven. For example, a sudden surge, or "spike," in AC voltage can burn out the low-voltage DC circuitry in your computer ("fry the motherboard"). Instead of plugging your computer directly into the wall electrical outlet, it is a good idea to plug it into a power protection device. One of the principal types is UPS.

A *UPS* (*Uninterruptible Power Supply*) is a battery-operated device that provides a computer with electricity if there is a power failure. The UPS will keep a computer going for 5 to 30 minutes or more. It goes into operation as soon as the power to your computer fails. It also stabilizes any sudden fluctuation in the power supply.

Hard Disk

Hard disks are thin but rigid metal, glass, or ceramic platters covered with a substance that allows data to be held in the form of magnetised spots. Most hard disk drives have at least two platters; the greater the number of platters, the larger the capacity of the drive. The platters in the drive are separated by spaces and are clamped to a rotating spindle that turns all the platters in unison. Hard disks are tightly sealed within an enclosed hard disk drive unit to prevent any foreign matter from getting inside. Data may be recorded on both sides of the disk platters (see Fig. 1.13). In a microcomputer, the hard disk is enclosed within the system unit. Unlike a floppy disk, it is not accessible.
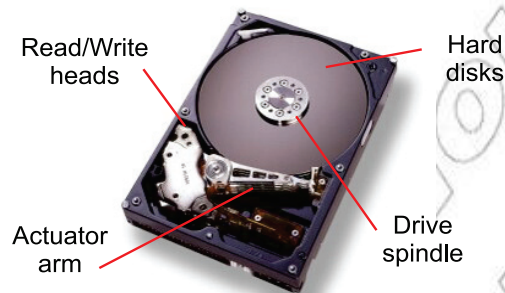

Fig. 1.13: Hard disk

CD-ROM Drive

A CD (Compact Disk) drive, or its more recent variant, a DVD (Digital Video Disk) drive, is a storage device that uses laser technology to read data from optical disks (see Fig. 1.14). (Some companies call a DVD a "Digital Versatile Disk.") These days new software is generally supplied on CDs rather than on floppy disks.

Fig. 1.14: CD/DVD drive and a CD

Floppy Drive

A floppy disk drive is a storage device that stores data on removable 3.5-inch-diameter disks (see Fig. 1.15). These diskettes do not seem to be "floppy," because they are encased in hard plastic, but the mylar disk inside is indeed flexible or floppy. Each can store 1.44 MB or more data. Using the floppy disk drive you can insert a diskette through a slot in the front and remove it by pushing the eject button.

Fig. 1.15: Floppy drive and floppy

> You must not remove the diskette from floppy disk drive until its light goes off, or else you risk damage to both the disk and the drive.

● Major Motherboard Components

The major motherboard components are CPU, RAM, ROM, Slots, Chips and CMOS battery, etc. Let us discuss these components and their functions:

CPU

The most fundamental part of a motherboard is the microprocessor chip or the Central Processing Unit (CPU) (see Fig. 1.16). A *microprocessor* is the miniaturised circuitry of a computer processor. It consists of mainly an

integrated circuit of semiconductor devices and other electronic components manufactured on a thin sheet of semiconductor material. CPU executes and stores program instructions that process or manipulate data into information. The CPU is often referred to as the "brain" of the computer.

CPUs have to communicate with the rest of the PC. This is accomplished through a collection of interconnected chips on the motherboard called a *chipset*. Chipsets determine what types of processors, memory, and video card ports will work on the same motherboard.
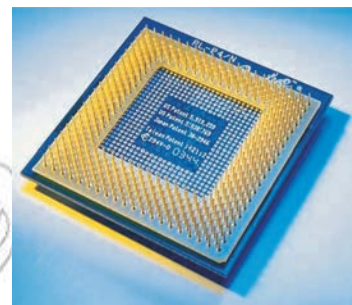

Fig. 1.16: Microprocessor chip

Memory

So far we have described only the kinds of chips known as microprocessors. But other silicon chips called *memory chips* are also attached to the motherboard. There are two types of memory storage—primary and secondary. Primary storage is temporary or working storage and is often called the *memory* or the *main memory*; secondary storage, usually called just *storage*, is relatively a permanent storage. *Memory* refers to storage media in the form of chips, and *storage* refers to media such as disks and tape. The two principal types of memory chips are *RAM* and *ROM*.

RAM chips—to temporarily store program instructions and data: RAM (Random Access Memory) chips (see Fig. 1.17) temporarily hold (1) software instructions, and (2) data before and after it is processed by the CPU. You can think of memory (RAM) chips as a collection of boxes, each of which, holds a single byte of data.

Because its contents are temporary, RAM is said to be *volatile*—the contents are lost when the power goes off or is turned off. This is why you should *frequently*—say, every 5 minutes, save your work to a secondary storage medium such as your hard disk—in case the electricity goes off while you are working.
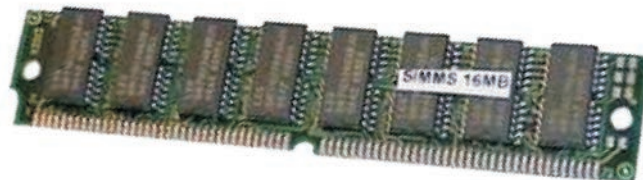

Fig. 1.17: Random Access Memory (RAM) chips

RAM allows the stored data to be accessed in any order, that is, at *random*.

> RAM is a volatile form of storage. It is the working memory of the computer. Having enough RAM is critical for the user to run many software programs.

ROM chips—to store fixed start-up instructions: Unlike RAM, to which data is constantly being added and removed, *ROM* (*Read Only Memory*) cannot be written upon or erased by the computer user. ROM chips contain fixed start-up instructions.

ROM chips are loaded, at the factory, with programs containing special instructions for basic computer operations, such as those that start the computer (BIOS) or put characters on the screen. These chips are non-volatile; their contents are not lost when power to the computer is turned off.

In computer terminology, *read* means to transfer data from an input source into the computer's memory or CPU. The opposite is *write*—to transfer data from the computer's CPU or memory to an output device. Thus, with a ROM chip, *read-only* means that the CPU can retrieve programs from the ROM chip but cannot modify or add to those programs. A variation is *PROM* (*Programmable Read Only Memory*), which is a ROM chip that allows you, the user, to load read-only programs and data. However, this can be done only once.

Slots

The motherboard has expansion slots—for expanding the PC's capabilities—which give you places to plug in additional circuit boards, such as those for video, sound and communications (modem).

CMOS Battery

This is a battery that maintains the time, date, hard disk and other configuration settings in the CMOS (Complementary Metal Oxide Semiconductor) memory. CMOS batteries are small and attached directly to the motherboard.

● Memory Capacity and Computer Speed

Memory is a part of the computer that holds data and instructions for processing. As mentioned earlier, memory chips deal only with temporary storage, secondary storage or permanent storage, stores the data for as long as you want. Although closely associated with the central processing unit, memory is separated from it. A computer system's storage capacity is represented by bytes, kilobytes, megabytes, gigabytes and terabytes. The computer speed, that is, the CPU speed is measured in gigahertz (GHz).

Memory Capacity

Memory capacity is the maximum or minimum amount of memory a computer or hardware device is capable of having or it is the required amount of memory for a program to run or execute.

The storage capacity of a computer is measured in bytes. The hierarchy of byte memory capacity is as follows:

(i) Bit. It is the smallest unit of memory. A bit has the value 0 or 1. This is determined by no voltage or high voltage.

(ii) Byte. One byte means 8-bits.

(iii) Kilobyte. Kilo means one thousand, so a kilobyte (KB) is approximately one thousand bytes. Actually, a kilobyte is 1,024 bytes.

(iv) Megabyte. Mega means one million, so a megabyte (MB) is approximately one million bytes (1,048,576 bytes, or 1,024 KB or 1,024 × 1,024 bytes, to be exact). Most personal computers have hundreds of megabytes of RAM.

(v) Gigabyte. Giga means one billion. A gigabyte (GB) is actually 1,073,741,824 bytes or 1,024 MB (i.e., 1,024 × 1,024 × 1,024 bytes). The storage capacity of a hard drive in modern personal computers is often many gigabytes.

(vi) Terabyte. One trillion bytes (actually, 1,099,511,627,776 bytes) is a terabyte (TB).

Table 1.2 summarizes the units of memory capacity.

Table 1.2: Units of Memory Capacity

Unit	Abbreviation	Size	Symbol	Equivalent
Bit	–	–	–	An atom or speck, the smallest unit of memory.
Byte	–	8 bits		A single letter, a number, or a symbol.

Kilobyte	K or KB	1,024 bytes		A one-page, double-spaced letter.
Megabyte	M or MB	1,024 KB or 1,048,576 bytes		A best-selling novel.
Gigabyte	G or GB	1,024 MB or 1,024 × 1,024 KB or 1,073,741,824 bytes		An encyclopaedia set.
Terabyte	T or TB	1,024 GB or 1,024 × 1,024 MB or 1,024 × 1,024 × 1,024 KB or 1,099,511,627,776 bytes		A bookstore.

Table 1.3 summarizes the characteristics of the various kinds of data storage.

Table 1.3: Characteristics of Various Kinds of Data Storage

Storage	Speed	Capacity	Relative Cost (Birr)	Permanent?
Registers	Fastest	Lowest	Highest	No
RAM	Very Fast	Low/Moderate	High	No
Floppy Disk	Very Slow	Low	Low	Yes
Hard Disk	Moderate	Very High	Very Low	Yes

Computer Speed

When we refer to the speed of a computer, we are talking about the speed of CPU. The microprocessor (CPU) is the "brain" of a computer. One of the most important things about CPUs is speed. The speed of CPU is measured in Hertz or Hz, *i.e.*, number of operations that can be done per second. Nowadays, we usually use Giga-Hertz or GHz (*e.g.*, 2.8 GHz, 3.06 GHz) because the CPUs are too fast to be measured in Hz.

Because of the extremely high speed of CPU, computers can do millions of operations in a very short time.

Heat is released when a CPU is run. High temperature, however, decreases the performance of CPU. You, therefore, need a fan to cool down the CPU.

Tip: *Do not play with the CPU speed*

You can change the speed of CPU in BIOS of your computer. Some people change the speed of their CPU to a very high GHz. This can increase the speed of the computer but would make the CPU overloaded and overheated. Finally, the whole computer may break down. Therefore, it is not recommended to do so.

Activity 1.2

IDENTIFICATION OF VARIOUS COMPONENTS OF A COMPUTER SYSTEM

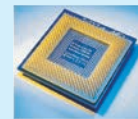Students to form groups in their class and identify the following components.

(*i*) ....   (*ii*) ....   (*iii*) ....

(*iv*) ....   (*v*) ....   (*vi*) ....

(*vii*) ....   (*viii*) ....   (*ix*) ....

Fig. 1.18: Main components of a computer system

KEY CONCEPTS

➢ Computer is an electronic device that can accept, store and process data under the control of a set of instructions.

➢ The System Unit is also called a case. It is a box that houses the motherboard (into which processor and RAM chips are plugged), power supply, as well as secondary storage devices —floppy disk drive, hard disk drive, and CD or DVD drive.

➢ The motherboard, or system board, is the main circuit board in the system unit.

➢ The most fundamental part of a motherboard is the microprocessor chip or the Central Processing Unit (CPU). It is often referred to as the "brain" of the computer.

➢ Memory capacity means the amount of program instructions and data that can be stored on it.

➢ Computer speed means the speed of the CPU.

REVIEW QUESTIONS

Fill in the Blanks

1. .... is perhaps the most powerful and versatile tool ever created by human being.

2. The .... is also called a case.

3. A CD (Compact Disk) drive, is a storage device that uses .... technology to read data from optical disks.

4. The contents of .... are lost when the power goes off or is turned off.

5. Memory is the part of the computer that holds .... and .... for processing.

State Whether True or False

1. A computer can perform any task on its own.

2. The motherboard is the main circuit board in the system unit.

3. The power supply is a device that converts DC to AC.

4. The CPU is often referred to as the "brain" of the computer.

5. The two principal types of memory chips are RAM and ROM.

Multiple Choice Questions

1. Which of the following is/are multipurpose ICT device(s) or convergence?
   (*a*) Combined printers, scanners and photocopiers
   (*b*) Televisions with built-in Internet connections and web browsers
   (*c*) Mobile phones that can take photos, record video, access the Internet and playback music
   (*d*) All of these

2. Which of the following is not a characteristic of valuable information?
   (*a*) Irrelevant   (*b*) Up-to-date
   (*c*) Accurate   (*d*) Reliable

3. Which of the following is not enclosed in System Unit of a PC?
   (*a*) UPS   (*b*) Hard disk
   (*c*) Motherboard   (*d*) Power Supply

4. Which of the following is another name for primary storage?
   (*a*) CPU   (*b*) ROM
   (*c*) RAM   (*d*) CD drive

Match the Following

Column A		Column B
1. A characteristic of valuable information	(*a*)	The most fundamental part of the motherboard
2. Intranet	(*b*)	Worth the cost
3. Read Only Memory	(*c*)	A network only available within a particular organization, not to public
4. CPU	(*d*)	Non-volatile storage

Answer the Following

1. Name major components of the system unit.

2. Identify function of the system unit and its components.

3. Name major components of the motherboard.

4. Identify function of the motherboard components.

5. Write a short note on the memory capacity and computer speed.

Suggested Activities

1. Cut out an advertisement from a newspaper or a magazine that features a new microcomputer system. Circle all the terms that are familiar to you. Define these terms on a separate sheet of paper. Is this computer expandable? How much does it cost? Is the monitor included in the price? Is a printer included in the price?

2. Consider the secondary storage components for a new system you are planning to buy. Using the advertisements in a computer magazine or a newspaper, pick out particular examples of each of the following devices and write a brief description of why you would want them and how much they would cost. Keep in mind that many of these components are already part of many systems, so you will concern yourself with adding them only after the system has been purchased.

   (*i*) Hard disk drive   (*ii*) Floppy disk drive

   (*iii*) Floppy disks   (*iv*) Removable disks

   (*v*) CD-ROM drive   (*vi*) DVD drive