

S.1 ICT TERM 1&2, 2020

INTRODUCTION TO COMPUTERS

COMPUTERS TODAY

Computer studies is a subject that deals with the study of the theoretical basics of information and computers together with the practical techniques for the implementation and application (use) of computers and related technologies.

Aim of learning Computer Studies

The subject aims at equipping the learner with computer, information and communication technology skills in order to improve one's productivity.

Reasons for learning about Computers

1. To lay a foundation for a learner to acquire knowledge and skills in the use of information and communications technology for improved productivity and development.
2. To promote creative skills for problem solving.
3. To promote critical and analytical thinking skills for proactive solutions.
4. To create awareness in a learner in regards to the developments and emerging issues concerning computers and society.
5. To enable a learner to be a computer literate and capable citizen who can develop, communicate and implement innovative, practical and responsible ICT solutions to problems.
6. To exhibit basic computer skills that is required for employment opportunities in future.
7. To use the acquired knowledge in computer studies to enhance learning in other subjects.
8. To acquire knowledge as a foundation for further studies in computer technology.
9. To use a variety of computer technologies to access, analyze and interpret information.

DEFINITION OF A COMPUTER

What is a Computer?

A computer is an electronic device operating under a set of instructions or commands (software or application programs) that

accepts data (input), processes it, outputs information, and stores the results (information) for future use.

Computer Literacy

Computer literacy refers to having the knowledge and understanding of computers and their uses.

Characteristics of Computers:

Computers are powerful machines for a variety of reasons. The computer's ability to perform these tasks is because of the following characteristics:

a) **Speed:**

Computers are fast in their operations and processing. The speed is measured in millions of instructions per second (MIPS) or billions of instructions per second (BIPS). The speed of a processor is measured in terms of a clock cycle performed in seconds. A single cycle of processing performed in a second is called a **Hertz**. Current personal computers run at clock speeds equivalent to a **Megahertz (MHZ)** or **Gigahertz (GHZ)**.

b) **Accuracy:**

Computers have the ability of processing large amounts of data and produce results without errors. Computer errors are due to human errors or data that is not accurate. A computing phrase **GIGO** (Garbage In Garbage Out) means that when wrong data with errors is entered into the computer you get output with errors from the computer.

c) **Storage:**

Computers can store large amounts of data before and after processing in the computer's memory (temporarily) and on the storage media (permanently). The temporary memory of the computer uses is called **Random Access Memory (RAM)**. Computers today use **RAM** chips with capacities ranging from 32 Megabytes (MB) to 8 Gigabytes (GB) and beyond.

d) **Versatile:**

Computers are said to be versatile because they are used to perform a variety of tasks such as creating documents, sending bills to customers, storing records, performing calculations, entertainment, etc.

e) **Diligence:**

Computers are diligent machines because they repeat processing tasks over and over again without making any errors or getting tired. Once programmed, the computer automatically performs as many cycles as possible and produces output in a short period of time with less human interruption.

f) **Reliability and Consistency:**

Computers are reliable machines because the electronic components inside the computer are dependable and have a low failure rate. The high reliability of the components inside enables computers to produce accurate and consistent results.

g) **Communication:**

A computer today can communicate with other computers often wirelessly or through connected wires. Two computers located in the same room can be connected by a communications device i.e. a network switch to share stored data, instructions and information.

COMPUTER TERMINOLOGIES

Data

This is a collection of raw and unprocessed facts, including letters, figures, symbols, images, sound and video that is relating to an activity.

Information

Information is organized, meaningful, and useful results or output obtained after processing data, useful in making a decision.

Bit

The smallest piece of information used by the computer and is the short form of **binary digit**. In computer language it is either a 0 (zero) or a 1(one)

Byte

A byte is a piece of information made up of 8 (eight) bits that is used to represent one character.

Input

Any data or instructions that are entered into the memory of the computer for processing.

Output

Data that has been processed into information which is in a useful form from a computer.

Storage

A location where data, instructions and information are held in a computer for future use. Storage takes place in memory and on storage media e.g. hard disk, compact disk, flash disks, digital versatile disk (DVD).

Processing

This refers to any action that converts input data into information.

Hardware

Hardware is the physical electronic components that make up a personal computer.

Software

Software is a series of instructions that directs the computer on each task it will perform and how to do it. Software is also called a **computer program or application program**.

Booting:

Booting is the process of starting up a computer. There are two methods of booting namely: ***cold booting*** and ***warm booting***.

Command:

A command is an instruction on a menu or a keystroke that causes a program to perform a specific action.

Central Processing Unit (CPU):

An electronic component that interprets and carries out the basic instructions that operate a computer. It is also referred to as the “**brains**” of the computer.

File:

A collection of stored data, instructions, information or programs that is assigned (given) a name.

Saving:

Saving is the process of writing a file onto a disk.

Disk:

A hardware device made of magnetic or optically fixed material on which data can be stored.

Downloading:

Downloading is the process of receiving data from one computer to another for example a web page from a computer server on the Internet or a file from a computer network.

Uploading:

Uploading is the process of transferring data from one computer to another for example a document, graphics through a computer network or to a server on the Internet.

Folder:

An electronic subdirectory which contains files.

Icon:

A graphical symbol representing an application program, file, folder or command.

Memory:

Memory is a temporary holding area where data, programs and instructions and information while processing is taking place. RAM (Random Access Memory) and ROM-BIOS (Read-Only Memory Basic Input Output System) are two types of memory chips.

Menu:

A menu is an item in a program or computer screen containing a series of commands from which a user can make a selection.

Operating System:

A piece of system software that interacts between hardware, application programs and the user to control the computer and coordinate all computer resources.

Multi-tasking:

A method in computing that allows a user to run several tasks also known as processes during the same period of time. The tasks share common processing resources such as the CPU and main memory.

Multi-Processing:

This is the use of two or more central processing units (CPUs) within a single computer system. The term also refers to the ability of a system to support more than one processor and/or the ability to allocate tasks between them.

Multi-user:

A term that defines an operating system or application software that allows access by multiple users (two or more users) of a computer at the same time.

Network:

A collection of computers and devices connected together via communication channels i.e. telephone lines, and transmission media i.e. network cables that allow computers to share resources. There are basically two types of networks

- i) Local Area Network (LAN)
- ii) Wide Area Network (WAN)

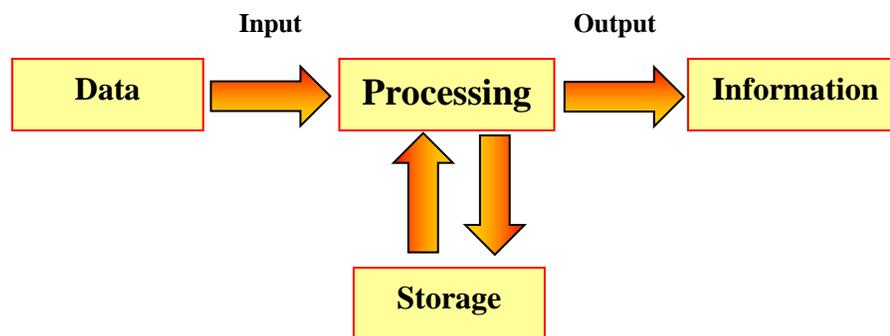
Internet

A worldwide collection of computer networks that links millions of businesses, government agencies, educational institutions and individuals.

DATA AND INFORMATION PROCESSING

Data processing involves a series of **input**, **process**, **output**, and **storage** activities that converts data into information. These series of activities are often called the **information processing cycle**.

Below is a diagram illustrating the information processing cycle



Stages of Information Processing

The five basic stages of processing data into information are:

1. **Data Collection** - capturing data from their sources and recording it onto some media (e.g., paper).The paper or document on which data is recorded is called a **source document**.
2. **Data Preparation** - copying, grouping, or arranging data in a more convenient way for input. During this stage data validation and verification is carried out.
 - **Data Validation** is the checking of input data for errors.
 - **Data Verification** is when data is checked for mistakes while it's being copied from one place to another.
3. **Input of Data** - entering the data or sending the stored data into the processing system.
4. **Processing** - calculating or manipulating the input data and even storing the results for future use.
5. **Output of Information** - giving out the processed results in a readable form (e.g., a report).

Methods of Data processing:

1. Electronic Data Processing

When an electronic device (e.g., a computer) is used to process data into information, this is called **electronic data processing**. Electronic data processing is also referred to as **Computerization**.

Advantages of using computers for data processing

1. Tasks can be completed faster because computers work at amazing speed.
2. Computers can process large amounts of data and generate error-free results, provided that the data is entered correctly.
3. Computers can store enormous amounts of data for future use.
4. The high reliability of components inside modern computers enables computers to produce consistent results.
5. Efficiency and productivity of tasks carried out can be raised .
6. Running cost becomes lower in the long term.
7. Tasks can be completed with little human intervention (i.e., automatic).
8. Overall, security can be raised due to less human intervention.
9. The management can observe new information trends and new changes more quickly.

10. Customer services can be improved due to more efficient management and operations.
11. Computers with communicating capability can share data and information with other computers.

Disadvantages of using computers for data processing

1. Computers are very costly. The initial cost of purchase can be high when buying or repairing computer equipment.
2. Extra cost is required to employ specialized staff to operate and design the data processing system.
3. Some jobs may be lost due to use of computers and this may lower the morale of staff members.
4. Some staff has to be trained or retrained on how to use computers and software.
5. Face-to-face interactions among staff may be reduced.
6. Due to the rapid changes in information technology, computers and related equipment become outdated within a short period of time.
7. In case of computer breakdown, data can be easily lost.
8. The devices used require a source of power or energy to function.
9. A lot of care is needed in handling the devices used for processing data.
10. There are health risks associated with using computers such as eye sight defects, repetitive strain injuries (RSI), backaches, etc.
11. Easier transmission of computer viruses through the Internet and other computer networks.

USE OF ICT AND COMPUTERS

Information Technology (IT) or Information and Communication Technology (ICT) deals with the use of electronic computers and computer software to convert, store, protect, process, transmit, and retrieve information.

Information technology (IT) or information and communication technology (ICT) is the combination

of computers and communication technologies that process *data* into *information*.

Examples of IT or ICT devices include:

computers, radios, televisions, digital cameras, video cameras, mobile phones, faxing machines, photocopiers, scanners, etc.

Today, the term IT or ICT includes many aspects of computing and technology, and the term is more recognizable than ever before. Information Technology covers many fields. IT professionals perform a variety of duties that range from installing applications to designing complex computer networks and information databases. A few of the duties that IT professionals perform include, but not limited to:

- Data Management
- Computer Networking
- Database Systems Design
- Software design
- Management Information Systems

Information and Communications Technologies (ICT) and computers have been used today to perform a variety of functions. Some of the ways through which ICTs and computers have been used include:

1) USES OF ICT IN EDUCATION

There is general agreement that computer technology is a crucial resource in education today. IT today is

used in school settings to perform a variety of functions including:

a) **Computer based training (CBT)**, which includes:

- i) **Computer Assisted Instruction (CAI)**, where teachers can use computers and other IT equipments to present teaching materials in a more interesting way.
- ii) **Computer Assisted Learning (CAL)**, where students can use computers and appropriate software to learn at their own pace. CAL involves the use of interactive teaching packages available on CD for many different subjects for learning purposes.
- iii) **Computer Assisted Assessment (CAA)**, where students use computers to take exams online (using the Internet) which may reduce the time and labour to mark the answer scripts.

b) **Distance learning** is a method of studying in which learning or classes are conducted by correspondence or over the Internet, without the student's needing to attend a school or college physically. The student and teacher are at remote locations using electronic communication while learning is taking place. Also called E-Learning or Online learning, it includes computer based training and web based training.

- c) **Simulations** are computer programs that imitate real life situations or processes such as simulated experiments such as biological processes i.e. cutting a frog, chemical reactions.
- d) **Electronic Library System** an information retrieval system used for searching, borrowing and returning digital books accessed remotely via computer networks. It is also referred to as a digital library.
- e) **The School Administration and Management System (SAMS)** an information system designed for keeping records of students and producing report cards or other related documents.
- f) **Edutainment**, which is a type of educational software that combines education with entertainment.

More uses of ICT in schools include:

- The use of productivity tools like word processors, database management systems, presentations and spreadsheet software for use in projects and other school activities.
- Access to the Internet and thousands of online databases for educational information including subject directories and educational websites.
- Links with other schools or colleges, or with industrial or business organization to exchange information.

- Special facilities are available for students with disabilities – for example blind people can use text-to-speech conversion packages to work on a computer.

Advantages of using ICT and computers in teaching and learning

- CAI and CAL packages that usually contain [multimedia](#) effects make learning more interesting and interactive.
- Students can learn by themselves when the teacher is not available.
- Students can learn and proceed at their own pace.
- Students can usually get their results or feedback immediately after they have answered the question or taken an action.
- There are rich educational resources on CD-ROMs and the [Internet](#).
- Teachers can present subject matter and explain abstract concepts more clearly with multimedia.
- Teachers can show experiments that are difficult to perform or dangerous in nature through simulations software.
- Advanced instructions can be given to students in areas where the teacher may not be qualified.

Disadvantages of using ICT and computers in teaching and learning

- Face to face interaction between students and teachers may be reduced.

- Students can only follow what the CAL packages are predefined to offer.
- Computers are costly to acquire for the CAL process.
- Students may fail to understand some concepts using CAL & CAI without proper explanations.
- Some of the educational programs are not easy to acquire.

2) USES OF ICT AT HOME

ICTs and computers can be used at home to perform a variety of functions. Some of the uses and functions of ICTs and computers include:

- Pay bills through the payment by phone services (PPS) such as water bills, UMEME bills, and DSTV bills using MTN mobile money, Warid Pesa and other services. With a payment by phone service account, bills can be paid either by phone or on the Internet.
- Budgeting and personal financial management for the family.
- Buy and sell stocks online using the Internet.
- Manage family investments or businesses and family budgets
- Carry out research and education at home including taking college classes online (i.e. cyber classes), produce assignment and reports, learn to speak a foreign language, help youngsters to read, write, count and spell.
- Use ICT as a personal and business communication channel including the organization of names and addresses of contacts
- Communicate with others around the world using e-mail and chat rooms. A **chat room** is a location on an Internet server that permits users to chat with each other by typing lines of text on the computer. Some chat rooms support voice chats and video chats.
- Access the Internet to:
 - Obtain a wealth of information such as news, stock prices, and educational materials.

- Enjoy online banking and investments services.
- Shop for goods and services (e-commerce)
- Communicate and exchange information with other people around the world
- Provide information to others through personal websites.

3) USES OF ICT in ENTERTAINMENT and LEISURE

ICTs and computers can be used in entertainment to perform a variety of functions. Some of the uses include:

- a. Playing computer games
- b. Listening to music using audio software
- c. Watching a video or a movie using video playing software
- d. Compose and edit video using video editing software
- e. Retouch a photograph which includes cropping (cutting off portions of an image), brighten, darken, sharpen images and other tasks.
- f. Read a book, newspaper or magazine online when connected to the Internet
- g. Plan a vacation for family members or organization.
- h. Computers are also used in cinema halls and podiums for faster instant audio and video playback and presentation through projectors.
- i. Computers are used in the entertainment industry to produce music, video editing, CD burning, etc.

4) USES OF ICT in HEALTH/HOSPITALS

ICTs and computers have been used in the medical and health sector in a number of ways. These include:

- a. Medical records stored in a hospital information system improve the quality of patient care. The records are more accurate, they can keep track of prescriptions and tests administered on patients, hospital admissions, and dietary requirements and so on.
- b. Databases of donors for body organs and patients needing transplants can be accessed when needed.
- c. Computerized devices such as pacemakers, artificial organs and artificial limbs have enabled thousands of people to live

- longer. These implanted computerized devices can help physically impaired people to become more mobile.
- d. Computerized monitoring devices can keep a 24-hour watch on critically ill patients and sound an alarm if the patient is in danger.
 - e. Expert medical systems are used in medical diagnosis. They help to diagnose diseases often at remote locations far from the care of specialists. Vast amounts of data on symptoms and illnesses are stored in a 'knowledge database' which can help a doctor to arrive at a preliminary diagnosis.
 - f. Surgeons use computer-controlled devices to carry out operations with greater precision such as for laser eye surgery and robot-assisted heart surgery.
 - g. Computers can be used to model new drugs and test their effects, significantly reducing the time taken for new drugs to come onto the market.
 - h. Doctors use the internet and medical software to assist with researching and diagnosing health conditions and the e-mail to correspond with patients.
 - i. Web sites also maintain lists of specialists (doctors, surgeons and dentists) to help you find the one that suits your needs. They set up chat rooms where you can talk to others diagnosed with similar conditions.
 - j. **Telemedicine** is a form of long-distance health care that allows health-care professionals in separate locations to have live conferences on the computer. For example, a doctor at one location can have a conference with a doctor at another location to discuss a bone x-ray. Live images of each doctor, along with the x-ray, are displayed on each doctor's computer. This is a new development in health care.

5) USE OF ICT IN BANKING

The banking industry makes extensive use of ICT in all its operations in the following ways:

- Using **telephone banking**, a customer can ring in to the bank or check an account balance or pay a bill as well as handling account queries and transactions.
- **Online banking, PC Banking or Internet Banking** enables users to keep track of cash balances and transactions on the

account, print account statements, etc. A customer needs to connect to the bank's server or computer using the Internet and he/she carries out banking transactions on his account.

- **Short Message Service (SMS) banking** enables customers to use their mobile phones and request for services from the bank such as buying airtime, checking account balances, etc
- Using an **Automated Teller Machine (ATM)**, a user can make cash deposits, withdraw money, transfer money, apply for bank mini statements and obtain account balances at thousands of cash point machines all over the country. An ATM is a self-service banking machine attached to a host computer through a telephone network.
- Millions of cheques are processed each day using Magnetic Ink Character recognition (MICR) devices.
- Salaries, bills and other payments can be paid automatically by using **Electronic Funds Transfer (EFT)** systems. Electronic Funds Transfer (EFT) is the electronic exchange or transfer of money from one account to another through computer-based systems. Money from one bank account is directly deposited to another account without any paper money payments involved.
- **Electronic smartcards** which store money on a microchip which can be topped up just like cash can be used to purchase goods. The smartcard is inserted into a reader and the amount to be deducted is typed in.
- Mobile money transfer services today are used to send and receive money. It is a transfer of money to a receiver in which the funds are deposited into a mobile wallet. A mobile wallet is an electronic account that is linked to a person's mobile phone in which money can be electronically deposited and used the same way as cash.
- Banks use ICT for security purposes i.e. computerized doors and locks, CCTV surveillance cameras, etc.

6) USE OF ICT in MILITARY/SECURITY

- a. Computer aided cameras are used for domestic and business premise security by using closed circuit television (CCTV) surveillance cameras or laser guided beams.
- b. Flying and directing fighter/combat planes.

- c. Security of gates and doors on business premises is controlled using computerized locks and doors.
- d. For deploying, controlling and directing weapons (missiles) and ammunition.
- e. Detecting weapon of mass destruction.
- f. Computers are used in conjunction with satellites for spying and tracking enemy positions or targets using the Global Positioning System (GPS) technology.
- g. Computers are also used to help the military/security personnel communicate using secure and encrypted communication channels.
- h. Computers have also been used to keep track of records of the army personnel as well as the ranks of the different officers in the army.
- i. Computers have also been used to capture data for National Police Computer databases, vehicle registration, national identity card registration, etc.
- j. Use of closed circuit television (CCTV) systems in many institutions (banks, schools, hospitals) to provide security services.
- k. Manufacture weapons of warfare or mass destruction to be used by the military.

7. USES OF ICT in BUSINESS and COMMERCE

Information technology can play a crucial part in the success or failure of a new enterprise, business or commerce. The uses of ICT in business include:

- a) A business can use a variety of software packages to run a business such as
 - i) A **word processing package** can be used to design invoices, stationery, letters, memos, contracts and other business documents.
 - ii) A **spreadsheet package** can be used to draw up a business plan and to calculate expected income and expenses.
 - iii) A **graphics package** can be used to design the company logo, headed stationery and business cards.

- iv) A **desktop-publishing (DTP) package** can be used to design advertising or promotional material such as billboards and for creating business websites.
- v) A **database package** can be used to keep business records, contacts of customers and inventory (stock) for the business.
- vi) An **accounts package** can be used to set up the company books of accounts (cash account, trial balance, cash flow statements).
- b) A computer with associated peripherals such as a laser printer is used to produce hard copies of documents, budgets, reports and other material.
- c) A fax machine can be used to communicate with potential suppliers, wholesalers, distributors, printers etc.
- d) The Internet can be used to sell products to new and existing customers and can also be used as a valuable research tool.
- e) E-mail can be used to correspond with customers or suppliers.
- f) Computers enable people working from home to use a computer connected to an employer's network or via the Internet. This is known as **Telecommuting/Teleworking**.
- g) Computers have enabled the buying and selling of goods and services over electronic networks such as the Internet. This is known as **Electronic Commerce (E-Commerce)**.
- h) Computers are used for sending and receiving money transactions and transfers using Mobile Money Services or world wide money transfers using Western Union Money Transfer.
- i) Computers through Electronic Data Interchange (**EDI**) have been used to transfer business data. **EDI** is a set of standards that control the transfer of business data and information both within and among companies.
- j) Through **online shopping** users can purchase any product or service on the Web such as flowers, books, computers, prescription of drugs, music, movies, cars, airline tickets (e-tickets).
- k) Through **online investing**, individuals buy and sell stocks, bonds, foreign currencies without using a broker (middleman).

8) USES OF ICT in MANUFACTURING and INDUSTRIES

Computers and ICTs are used in the industrial and manufacturing plants as follows:

- a) Computers and ICTs have enabled the automation of many complicated processes that would be dangerous or which cause health risks to humans. Fewer skilled employees are employed to manage computerized systems.
- b) Computer programs are used to run machines e.g. robots with artificially intelligent programs carry out repetitive and dangerous tasks such as packing chemicals, tightening nuts, welding in industries, etc
- c) Robots are used today in manufacture of many products in industrial complexes replacing human beings. They are employed in processes that require speed, accuracy and consistency.
- d) ICTs are used in production of documents, reports and budgets, order entry and processing systems that accept and process customer orders.
- e) Project management software provides management with the information necessary to keep projects within budget and on time. Reports can be produced showing actual costs versus projected costs, and the number of days ahead or behind schedule.
- f) Through **Computer-aided design (CAD)** systems, excellent designs for different products can be created easily using different applications from designing a new jumbo jet, car, computer chips, bridges, buildings, etc.
- g) Through **Computer-Aided manufacturing (CAM)** systems, computers have been used to control the production of goods in factories enabling components to be manufactured with the utmost accuracy.
- h) Computers can be used for communication within and outside the manufacturing plants by using Internet and email between customers and manufactures.
- i) Computers are also used to carry out stock control ensuring that the right stock is maintained by the business.

9) USES OF ICT in COMMUNICATION

An organization such as a business or school provides communications services to employees, students, or customers. The different uses of computers for communication include:

a) **Accessing the Internet and World Wide Web (WWW):**

The **Internet** is a worldwide collection of networks that link millions of businesses, government agencies, education institutions, and individuals together. The **World Wide Web** is a collection of electronic documents on the Internet that users can access through a Web browser.

An **Internet Service Provider (ISP)** is an organization that enables computer users to access the Internet and Web e.g. Mobile Telecommunication Network (MTN), Orange, Airtel, Smile, Vodafone, Infocom, AFSAT, etc.

b) **Electronic Mail (E-Mail) Transmission:**

This is the transmission of electronic messages and files via a computer network from one computer to another by use of e-mail servers and e-mail accounts.

c) **Instant Messaging (IM):**

Instant messaging is the real time Internet communications service that allows you to exchange messages with one or more online users. With instant messaging both the sender and receiver should have identical and compatible messaging software such as Face book messenger, Yahoo messenger, WhatsApp, Viber, Google Talk, etc.

d) **Text messaging:** With text messaging, also called SMS (short message service), users type and send short text messages from a smart phone, PDA, or a personal computer to a smart phone or PDA with a compatible text messaging service. Most text messages have a limit about 160 characters per message.

e) **Picture Messaging:** Picture messaging allows users to send graphics, video, digital images as well as sound files combined with text messages. Picture messaging is also referred to as **Multimedia Message Service (MMS)**.

- f) **Use of Chat Rooms:** Chat rooms are virtual rooms that offer real-time typed conversation services that take place on computers connected to the Internet.
- g) **Use of Voicemail:** Voicemail allows someone to leave a voice message for one or more people. A computer in the voicemail system converts an analog voice into a digital form and stores it in a voicemail box. Recipients of a call listen to voice messages at a later time and respond appropriately.
- h) **Public Internet Access Points:** In many public locations, people connect wirelessly to the Internet through Internet cafes using their mobile computers or devices. Mobile users check e-mail, browse the web, and access any service on the Internet as long as their computers or devices have an appropriate network card and they are in a hot spot. A **hot spot** is an area with the capability of transmitting wireless internet connectivity signals. Most hot spots send wireless signals ranging from 10 to 300 feet and some can extend to 15 miles.
- i) **Groupware:** Groupware is a software application that helps groups of people work together on projects and share information over a network. Groupware also called **workgroup computing** enables group members to communicate, manage projects, schedule meetings, and make decisions.
- j) **Newsgroups** are online areas in which users conduct written discussion about a particular subject.
- k) **Internet Telephony:** Internet telephony, also called **Voice over Internet Protocol (VoIP)**, enables users to talk to other users over the internet. To call using the Internet, you need internet telephone software such as Skype. As you speak into a computer microphone, the internet telephone software and the computer's sound card digitize and compress your spoken words and then transmit the digitized audio over the internet to the called parties.

l) **File Transfer Protocol (FTP):** An Internet standard that permits users to upload files from your computer to Internet Servers as well as download files from FTP servers on the Internet to your computer.

m) **Video Conferencing:**

Video conferencing is a real time meeting between two or more geographically separated people who use a network or the Internet to transmit audio and video data. To participate in a video conference, you need video conferencing software along with a microphone, speakers, and a video camera attached to a computer. As you speak, members of the meeting hear your voice on their speakers. Users with higher-speed broadband internet connections experience much better video performance.

MERITS and DEMERITS of USING INFORMATION COMMUNICATIONS TECHNOLOGY or COMPUTERS to SOCIETY

It is obvious that the computers are revolutionizing our daily life. More and more educated people are being attracted in using computers for solving their daily problems from word processing, spreadsheet calculation to solving a very complex simultaneous equation. Computers and the Internet have touched almost all aspects of life. It is rare to come across a business or household that does not experience routine use of a computer in some shape or form.

Technology has allowed people to have higher levels of convenience and proficiency. Many people today would find it very difficult to go back to an age where computers were not in existence. While there have been many positive effects of computers on society, there have also been some drawbacks too. Let's take a look at some of the positive and negative effects of computers on society:

MERITS of USING COMPUTERS (Positive Impact of ICT to Society)

- a) Tasks can be completed by computers at a very fast speed due to the amazing ability of computer processing. Transactions that used to be solved with a hand and often tedious are now done electronically.
- b) ICTs and computers ensure that transactions are completed quickly with a high degree of accuracy. High quality information is produced with less human intervention
- c) More information can now be stored in a small space electronically and can be accessed quickly when needed instead of using paper files that occupied large spaces.
- d) The ability to access vast amounts of information on the Internet for research yields a lot of results containing information you are looking for easily.
- e) Use of ICTs enables faster and cheaper communication. The improved communication facilities (e-mail, sms, social networking sites) and networks with high bandwidth and broadband connections, enable people to connect and converse or share information with each other.
- f) Computers possess multitasking and multiprocessing capabilities which facilitate quick processing of data. Many tasks can be carried out in less time such as budgeting, document production, etc.
- g) ICTs and computers ensure that productivity and efficiency is realized during processing. The costs of production reduce as cheaper technology is invented every now and then.
- h) ICTs and computing have created and widened employment opportunities and jobs e.g. software engineers, computer teachers, technicians, etc. through investments made in ICTs.
- i) With the use of ICTs, users enjoy more flexible working hours and conditions through telecommuting (working from home).
- j) Improved education and research by simplifying teaching and learning. For example abstract content can be made real through cyber science technology – others are computer aided teaching and computer aided learning, presentations software, etc.
- k) Improved entertainment and leisure through computer games, music, etc for people to refresh and make-up.

- l) Improved health services where computers facilitate recording, monitoring, and diagnosis for patients.
- m) Improved security through computer managed gates and monitoring of commercial and domestic premises, detecting and controlling crime by police.
- n) Reduced production time and manufacturing processes through computer aided manufacturing and computer aided designing which have greatly improved the quantity and quality of life.
- o) Improved customer services delivery and care e.g. networked computers provide 24/7 on-line services like credit cards
- p) Improved business and investment opportunities.
- q) Improved data and document production, storage and manipulation.

DEMERITS of USING COMPUTERS (Negative Impact of ICT to Society)

- a) For those who spend many hours in front of a computer, there is a risk of addiction. Many people don't care about anything except for the computers.
- b) Using computer for many hours during a day can be very harmful for eyes.
- c) Computer can destroy the culture of a certain group of people in the society, especially youths.
- d) In spite of continuously reducing prices, computers are still costly because the initial costing and maintenance cost of a computer are very expensive.
- e) Use of computers requires additional efforts in form of learning to use computers and their programs.
- f) There is dehumanizing of people. Excessive use of computer for communication with others threatens to reduce the intensity of personal bond that often develops between people. For instance, the telephone calls
- g) Computers have led to unemployment of people such as Tellers, shop workers, postal workers; since many manual/repetitive jobs have been replaced by computers like ATMs

- h) Electronic fraud: Stealing money electronically through practices like Credit card cloning
- i) Impact on Environment: Computer manufacturing processes and computer waste are depleting natural resources and polluting the environment.
- j) Hacking: Unauthorized access into computers possibly to access information, compromising privacy. E.g Wikileaks
- k) Software Piracy: Stealing software, not paying for licenses through cracking.
- l) Presence of Viruses: You may lose all your programs, files, documents folders and other data on your computer because of virus infection on the computer.
- m) Moral Decay: The internet has websites with content such as pornography, which have a bad impact on the users especially the young children.
- n) Computers are delicate and they must be given a great care.
- o) Our creativity, skills and reasoning can decrease when we are too dependant to the computer. For instance, with email replacing the hand-written letter, onscreen Art designing instead of Hand drawing Art etc.

COMPUTER CARE AND SAFETY

END OF TERM