

## JSS2 ICT THIRD TERM E-NOTE

- THE INTERNET
- INTERNET BROWSER
- BENEFITS OF THE INTERNET
- INTERNET ENVIRONMENT
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- FILE SHARING
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### Week 1

#### Topic: THE INTERNET

##### Definition

Internet is defined as a global electronic communication network. It is one of the largest networks that link trillions of computers all over the world. You can access this network via communication devices and media such as modems, cable, telephone lines and satellite.

The **Internet** is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to link several billion devices worldwide.

It is a *network of networks* that consists of millions of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies.

The internet offers many conveniences at your fingertips. You can send messages to others, meet new friends, bank, invest, shop, fill prescription, file taxes, take online courses, play games, listen to music or watch a movie on the internet, the advantage of the internet is that you can use it from a computer anywhere in the world.

Success today in the business world requires knowledge of the internet. Without it, you are missing out on a tremendous source for goods, services, information and, communication.

Here are some of the things one can do on the internet.

- Banking called E-banking Or Internet Banking
- Invest
- Shop for goods and services
- Watch movies
- Download and listen to music
- Access Educational material e.g. Passnownow.com
- Access source of entertainment and leisure, such as online games, magazines or vacation planning guide
- Access other computer and exchange files, share and edit document with other in real time
- Provide information, photographs or audio or video clips

## History of the Internet

The history of the internet begin with the following

1. **ARPANET**: The US defense department created a project called Advanced Research Project Agency (ARPA) in late 1960s, which was to work as network that would allow scientist and military personnel to exchange information in war scenario without disruption in communications. The network was connected in a way which ensured that if one section of the network was damage, the remaining computer on the network would still

be able to communicate with each other. This network was called ARPANET. By 1984, ARPANET had more than 1,000 individual computers linked as hosts.

2. **NSFNET**: In 1986, the national science foundation (NSF) connected its huge network of five supercomputer centre called NSFNET, to ARPANET. They used the technology developed for ARPANET to allow universities and schools to connect to each other. By 1987, NSFNET could no longer handle the amount of information that was being transferred. The national science foundation improved the network to allow more information to be transferred. This configuration of complex came to be known as the internet. Most of the people accessing the internet till late 1980s were scientist and researchers. In the early 1990s, many companies started to offer access to home users. This allows anyone with a modem and a computer to access the internet.
3. **WORLD WIDE WEB**: The World Wide Web was created in the early 1990s by European organization for nuclear research. The goal of WWW was also to allow researchers to work together on projects and to make project information easily accessible. The first publicly accessible website was created in 1991. By the mid 1990s, over 30 million people had access to the internet. Reach this huge market, most big companies created their own sites on the World Wide Web or provide information about their products. Now there are thousand companies on the web.

### Assessment

- Mention five things you can do on the internet

### Week 2

#### Topic: HOW THE INTERNET WORKS

On the internet, data and information are transferred world wide through the servers and clients (which are computers) connected to the internet.

The computers which are responsible for management of resources i.e program and data on a network, by providing a centralized storage area, is called a SERVER. The computer which has an access to the contents of the storage area on the server is CLIENT. On the internet, a client which can access file and services on a number of servers called a Host computer. Your computer is a Host computer.

The inner structure of the internet resembles a transportation system. In the transportation system, the maximum load of traffic is concentrated on the highways, which are linked to the major cities. Similarly, on the internet, there are certain main communication lines which carry the maximum load of traffic. These lines are collectively called the INTERNET BACKBONE.

The internet is a packet oriented network. It means that the data you transfer is divided into packets.

So what happens when you transfer data across the internet various networks?

The networks are linked by special computer, called ROUTERS. A router checks where your packet data goes and decides in which direction to send it. Of course, not every router is linked with every other router, they just decide on the direction your data takes. The internet knows where your data is going, as every destination has an address called an Internet Protocol (IP) address. The data transferred with IP is divided into packets. This is handled by another protocol, the transmission control protocol (TCP).

The internet is an addressing system used to send data and information to a fixed or specific destination, just like the postal system. An IP address i.e. internet protocol address has its own unique identification attached to a computer or a device connected to the internet. The IP address has a group of numbers and is separated by a period (.). The number varies between 0 and 255. For instance the number 153, 25. 15,10 are an IP address. Generally, the first part of the IP address identifies the network and the last portion identifies a specific computer.

It is difficult to remember and use this all numeric IP address. Hence, the internet favours the use of text name that represents one or more IP addresses.

The text version on IP is the domain name. The component of the domain name are separated by periods just like an IP address.

Every domain name contains a Top Level Domain (TLD) abbreviation that identifies the type of organization which is associated with the domain. Dot com (.com) is the name sometimes used to describe an organization that has TLD of com. The domain name system is a system on the internet that stores the domain names and their corresponding IP address. Each time you specify a domain name, an internet server called the DNS server translates the domain name into its associated IP address, so data can be routed to the correct computer.

## **WEB PAGE**

Web page is an electronic document on the World Wide Web. A web page consists of a HTML file in a particular directory on a particular machine ( and in thus identification by a URL) a vast amount of information is provided by these web pages. The information may include graphics, sounds, or even movies. Usually, a web page contains links to other pages as well

## **WEBSITE**

A website is a collection of web pages. Most websites have a home page as their starting point, which frequently has a table of contents for the site. Users need a web browser and a connection to access a website.

## **HOME PAGE**

Home page is the first page retrieved when accessing a website. It serves as a table of contents for the rest of pages on the site and offers links to other websites. For example, a company's welcome page typically includes the company logo, a brief description and links to the additional document available on that site.

## **UNIFORM RESOURCE LOCATOR**

The uniform resource locator is the address that defines the router to a file on the web. URLs are typed into the browser to access web pages.

## **HYPERLINKS**

Web pages contain highlighted text or image, called hyperlinks that connect to other pages on the web. A hyperlink allows you to easily move through vast

amount of information by jumping from one web page to another. You can select a hyperlink to jump to a web page located on the same computer or on a computer across the city, country or world. You can easily identify a text hyperlink in a web page because it appears underlined and in color.

## **WEB SERVER**

A web server is a computer on the internet that stores web pages. A web page is available for other people to view, when it is stored in the web server.

## **WEB BROWSER**

A web browser is a software program that allows you to access and view web pages. The web browser software is built on the hyperlinks, which allows users to point and click with a mouse in order to jump from one document to another in whatever order they desire.

## **TYPES OF BROWSER**

In January 1993, the first browser, Viola and Midas were released for the X window system (UNIX). At the same time, a Macintosh browser was released called ALPHA version.

In February 1993, the first popular graphical World Wide Web browser was NCSA Mosaic. It was released for all common platforms (UNIX, windows and Macintosh) in September 1993.

Marc Andersen, the mastermind of Mosaic, founded his own company, Mosaic Communication Corp., now known as Netscape and released a browser, the Netscape Navigator 1.0. He soon controlled 70 percent of the browser market. Microsoft saw this gigantic success and soon released a browser called MS Internet Explorer, for free, now new version of both browser support most HTML.

## **TYPES OF WEB BROWSER**

1. **MICROSOFT INTERNET EXPLORER:** Microsoft Internet Explorer is the most widely used by people around the world. It was developed by Microsoft in 1995 as a supportive package to the Microsoft Windows operating system.

2. **MOZILLA FIREFOX:** Mozilla fire fox is the second browser after the internet explorer. It can be used on many different operating systems including windows, Macintosh, OS/2 and UNIX. It supports tabbed browsing that allows user to open multiple sites in a single window.
3. **OPERA:** Opera is a web browser that was developed by Opera software in 1996. It is a well-known browser that is mainly used in activated mobile phone and smart phones. It is used with many operating systems like Linux, MAC OS and MS window.
4. **NETSCAPE NAVIGATOR:** Netscape navigator was developed by Netscape Communication Corporation and was very popular in the 1990s. it was compatible with almost every operating system.

### Assessment

There are numerous web browsers, mention 3 others that you know

### Week 3

#### Topic: BENEFITS OF THE INTERNET

The benefits of the internet are as follows:

1. **INFORMATION:** The internet gives you access to information on any subjects of your interest. This makes the internet a valuable research tool. Most sources such as news paper and magazines have websites and a number of them only exist online.
2. **RESEARCH:** You can make use of the internet search facilities to research just about any topic you can think of. This information can help you with a school project, or a presentation at work. You can search for the data you need, or go to specific research sites.
3. **E-MAIL (electronic mail):** Electronic mails enable us to exchange message with people around the world, including friends, family members, colleagues, customers and even people you meet on the internet. E-mail is an exciting feature of the internet as we can send and receive message over long distances. It is also fast, easy and inexpensive.
4. **ENTERTAINMENT:** The internet offer many different forms of entertainment, such as radio and television broadcast, video and music.

You can find picture from the latest film, watch live interview of your favorite celebrities and listen to music before it is available in stores.

5. **PROGRAM**: You can find thousands of programs that can be used on your computer, such as word processors, drawing programs, games and accounting programs.
6. **ONLINE SHOPPING**: You can order for products on the internet, while sitting at home. You can purchase items such as books, flowers, music, CDs, pizzas, stock and used cars.
7. **CHATTING**: Chat features allow you to exchange typed message with another person on the internet. The message you send will instantly appear on the other person's computer. You can chat with a person or a group at the same time.
8. **BANKING**: You can use the internet to find financial sites that enables you to do your banking and investing online. Banking online is much more convenient and much less time consuming than doing it in person. Online banking is extremely secure because all modern browsers support robust security protocol which ensures that your financial data remains safe.
9. **E-LEARNING**: E-learning is a training or education program by electronic means. E-learning involves the use of computer or an electronic device (GSM handset) to provide training on educational technology as a tool for learning . Distant education can be done by e-learning.

## Assessment

As a student, what are the benefits of the internet to you?

## Week 4

### Topic: Internet Environment

An internet is a logical collection of networks supported by gateways, routers, bridges, hosts, and various layers of protocols. An internet permits different physical networks to function as a single, large, virtual network, and permits dissimilar computers to communicate with each other, regardless of their physical connections. Processes within gateways, routers, and hosts originate and receive packet information. Protocols specify a set of rules and formats required to exchange these packets of information.



Protocols are used to accomplish different tasks in TCP/IP software. To understand TCP/IP, you should be familiar with the following terms and relationships.

A **client** is a computer or process that requests services on the network.

A **server** is a computer or process that responds to a request for service from a client. A **user** accesses a service, which allows the use of data or some other resource.

A **datagram** is a basic unit of information, consisting of one or more data packets that are passed across an internet at the transport level.

A **gateway** is a functional unit that connects two computer networks of different network architectures. A **router** is a device that connects networks at the ISO Network Layer. A router is protocol-dependent and connects only networks operating the same protocol. Routers do more than transmit data; they also select the best transmission paths and optimum sizes for packets. A **bridge** is a router that connects two or more networks and forwards packets among them. The operations carried out by a bridge are done at the physical layer and are transparent to TCP/IP and TCP/IP routing.

A **host** is a computer, connected to a network, that provides an access point to that network. A host can be a client, a server, or a client and server simultaneously. In a communication network, computers are both the sources and destinations of the packets. The **local host** is the computer to which a user's terminal is directly connected without the use of an internet. A **foreign host** is any machine on a network that can be interconnected. A **remote host** is any machine on a network that requires a physical link to interconnect with the network.

An **internet address** is a unique address identifying each node in an internet. Internet addresses are used to route packets through the network. Currently, there are two versions used for internet addressing: Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6). **Mapping** relates internet addresses to physical hardware addresses in the network. For example, in IPv4, the Address Resolution Protocol (ARP) is used to map internet addresses to Token-Ring or Ethernet physical hardware addresses. In IPv6, Internet Control Message Protocol Version 6 (ICMPv6) is used to map internet addresses to physical hardware addresses.

A **network** is the combination of two or more nodes and the connecting branches among them. A **physical network** is the hardware that makes up a network. A **logical network** is the abstract organization overlaid on one or more physical networks. An internet is an example of a logical network.

**Packet** refers to the unit or block of data of one transaction between a host and its network. A packet usually contains a network header, at least one high-level protocol header, and data blocks. Generally, the format of the data blocks does not affect how packets are handled. Packets are the exchange medium used at the internetwork layer to send and receive data through the network.

A **port** is an end point for communication between applications, generally referring to a logical connection. A port provides queues for sending and receiving data. Each port has a port number for identification. When the port number is combined with an internet address, a **socket** address results.

**Protocol** refers to a set of rules for achieving communication on a network.

## Characteristics of the Internet

The characteristics of the Internet that are clearly of importance in cyberlibel proceedings are:

- its global nature
- interactivity
- its potential to shift the balance of power in the offline world
- accessibility
- anonymity
- its facilitation of republication
- the prominence of intermediaries
- its reliance on hyperlinks/hypertext
- its long-term impact — the use of permanent archives
- its multimedia character
- its temporal indeterminacy

## Assessment

- Briefly describe the following terms; i. Client ii. Datagram iii. Internet Address iv. Host

## Week 5

### Topic: ABUSE OF THE INTERNET

**Internet abuse** refers to improper use of the internet and may include:

- **Computer Crime** – or **cybercrime**, is any crime that involves a computer and a network. Use of computers for criminal activity.
- **Cyber-bullying** – Use of the internet to bully and intimidate. The use of information technology to repeatedly harm or harass other people in a deliberate manner.
- **Spam (electronic)** – Is the use of electronic messaging systems to send unsolicited messages (**spam**), especially advertising, as well as sending messages repeatedly on the same site. Sending of unwanted advertising messages.
- **Malware** – Software designed to harm a user's computer, including computer viruses. Malware, short for **malicious software**, is any software used to disrupt computer operation, gather sensitive information, or gain access to private computer systems. Malware is defined by its malicious intent, acting against the requirements of the computer user, and does not include software that causes unintentional harm due to some deficiency.
- Other ways of Abuse include:
  1. You can get harassing/threatening messages from people or from stalkers.
  2. It is very easy to find sites that promote hatred, violence, drug, sex, and other things not appropriate for children.
  3. There is no restriction on marketing products, such as alcohol, tobacco to children on the internet.
  4. Request for personal information for contests, survey e.t.c are used in unauthorized way.

5. Pornographic sites are easily found on the internet instead of it being restricted.

### Assessment

- Briefly explain three internet abuse

## Week 6

### Topic: File Sharing

#### Definition

File sharing is the practice of sharing or offering access to digital information or resources, including documents, multimedia (audio/video), graphics, computer programs, images and e-books. It is the private or public distribution of data or resources in a network with different levels of sharing privileges.

File sharing can be done using several methods. The most common techniques for file storage, distribution and transmission include the following:

- Removable storage devices
- Centralized file hosting server installations on networks
- World Wide Web-oriented hyperlinked documents
- Distributed peer-to-peer networks

#### Computer Network

A network consists of two or more computers that are linked in order to share resources (such as printers and CDs), exchange files, or allow electronic communications. The computers on a network may be linked through cables, telephone lines, radio waves, satellites, or infrared light beams. A *network* is defined as a group of two or more computer systems linked together.

Computer networks allow you to share information with friends, family, coworkers and customers. **Network file sharing** is the process of copying data files from one computer to another using a live network connection.

Before the Internet and home networks became popular, data files were often shared using floppy disks. Nowadays, some people still use CD-ROM / DVD-ROM disks and USB sticks for transferring their photos and videos, but networks give you more flexible options.

## Types of Network

- **Personal Area Network** – The smallest and most basic type of network, a PAN is made up of a wireless modem, a computer or two, phones, printers, tablets, etc., and revolves around one person in one building. These types of networks are typically found in small offices or residences, and are managed by one person or organization from a single device. Often used at home, this network is more on connections between a computer and another gadget such as a telephone or a modem.
- **Local Area Network** – A connection that's used for groups of computers. This is common in small offices and internet cafes. This is where everyone can share files basically, and is also known to be a good way to connect between computers whenever they want to share an internet connection, or whenever they want to play games with each other.
- **Metropolitan Area Network** – A more powerful version of the local area network where it can cover up the whole city in terms of connection. A huge server is usually used for this type of connection.
- **Wide Area Network** – This is a common type of network nowadays that's made possible by wireless technology. As the term implies, a WAN spans a large physical distance. The Internet is the largest WAN, spanning the Earth. Usually, a credential or service from a certain company is needed to enter a connection in this type of network, but there are others that can be used for free. This is good for internet connection. The internet is a well-known version of this one. A WAN is a geographically-dispersed collection of LANs. A network device called a router connects LANs to a WAN. In IP networking, the router maintains both a LAN address and a WAN address.
- **Storage Area Network** – A type of network that specializes in file sharing and other matters in storing various software within a group of computers.

- **Enterprise Private Network** – This is a software network that's often used in businesses so that they can have privacy over files and interactions between computers.
- **Virtual Private Network** – This is a software that's capable of setting up a network where everyone registered in the network using a credential will be able to access each other through other registered computers.
- **Wireless Personal Area Network (WPAN)** which is virtually a synonym since almost any personal area network would need to function wirelessly. Conceptually, the difference between a PAN ( personal area network) and a wireless LAN ( Local Area Network) is that the former tends to be centered around one person Network while the latter is a local area network (LAN) that is connected without wires Network and serving multiple users.**Wireless Networks**

- The fastest growing segment of the computer industry is the mobile computers such as notebook computers and personal digital assistant (PDAs).

- The wireless networks are becoming increasingly important because the wired connection is not possible in cars or airplanes.

- Wireless networks can have many applications. A very common example is the portable office

- People traveling on road often want to make use of their portable electronic equipment for telephone calls, e-mails, faxes, read remote files etc.

- Wireless networks can exist on trucks, buses, taxies, aero planes etc. They are used where the telephone systems are destroyed in the event of disasters such as. fires, floods and earthquakes etc.

- The wireless networks are important for military.

- Wireless networks and mobile computing are related but they are not identical because portable computers are sometimes wired and some wireless computers are not portable.

## Types of Network Topology

A topology for the network is known to be a layout for the connected devices. This is important because this is used to provide a proper flow of data within the said network. Here are the various topologies:

- **Bus** – This is the type of structure that uses a single medium to connect the computer.
- **Ring** – Each computer is connected to another neighboring computer for data transfer. One failed network can cause all networks to turn off.
- **Star** – This is a structure that's common in homes. It uses a certain hub or a router to make the network possible.
- **Tree** – This is a complicated structure that connects the star into multiple buses. This is common for internet cafes and offices.
- **Mesh** – this is a connection that leads to various data transmissions which are perfect for routing huge networks.

### Assessment

- Mention four types of networks
- Name three types of Network topology

## Week 7

### Topic: COMPUTER ETHICS I

#### COMPUTER ETHICS

Computer ethics are rules that govern the use of a computer system. **Ethics** deals with placing a “**value**” on acts according to whether they are “**good**” or “**bad**”. Every society has its rules about whether certain acts are ethical or not. These rules have been established as a result of consensus in society and are often written into laws. Computer ethics are increasingly becoming important because of the rising number of cybercrime issues, including software piracy, unauthorized

access, pornography, spamming, target marketing, and hacking. The widespread popularity and use of the Internet has given rise to a number of cybercrime issues and concerns about user privacy. Various computing applications are tampered with to invade into other's privacy. Malware, spyware, freeware, and browser cookie exploits are some of the notorious computing applications that have spurred the debate of importance of ethical behavior in technology. Some of the rules you should follow while using computer are:

## **BASIC RULES**

- Check your email regularly
- Avoid liquid and moist from dropping into the computer system
- Protect the system from power fluctuation
- Unplug the system when not in use
- Respond to email promptly and politely
- Use dust cover or proof to cover the system after use

## **GENERAL RULES**

- Any restricted files stardom the computer should not be accessed
- You should not give your user name and password to any one
- You should not alter any information on the system except your own
- Be polite to others on the net
- Be careful not to use rude or bad language online
- Do not break any laws
- Be patients with new comers
- Your message should be simple on the point.

## **Assessment**

- Mention five Basic rules in computer ethics
- List four General rules in computer ethics



## Week 8

### Topic: THE TEN COMMANDMENTS OF COMPUTER ETHICS

The **Ten Commandments of Computer Ethics** were created in 1992 by the Computer Ethics Institute. The Ten Commandments is “a set of standards to guide and instruct people in the ethical use of computers.”

1. Thou shalt not use a computer to harm other people.
2. Thou shalt not interfere with other people’s computer work.
3. Thou shalt not snoop around in other people’s computer files.
4. Thou shalt not use a computer to steal.
5. Thou shalt not use a computer to bear false witness
6. Thou shalt not copy or use proprietary software for which you have not paid.
7. Thou shalt not use other people’s computer resources without authorization or proper compensation.
8. Thou shalt not appropriate other people’s intellectual output.
9. Thou shalt think about the social consequences of the program you are writing or the system you are designing.
10. Thou shalt always use a computer in ways that ensure consideration and respect for your fellow humans.

#### EXPLANATION:

- **Commandment 1**

Simply put: Do not use the computer in ways that may harm other people.  
Explanation: It is unethical to use a computer to harm another computer user. It is not limited to physical injury. It includes harming or corrupting other users’ data or files. The commandment states that it is wrong to use a computer to steal someone’s personal information. Manipulating or destroying files of other users is ethically wrong. It is unethical to write programs, which on execution leads to stealing, copying or gaining unauthorized access to other users’ data. Being involved in practices like

hacking, spamming, phishing or cyber bullying does not conform to computer ethics.

- **Commandment 2**

Simply put: Do not use computer technology to cause interference in other users' work.

Explanation: Computer software can be used in ways that disturb other users or disrupt their work. Viruses, for example, are programs meant to harm useful computer programs or interfere with the normal functioning of a computer or delete files on a computer. Malicious software can disrupt the functioning of computers in so many ways. It may overload computer memory through excessive consumption of computer resources, thus slowing its functioning. It may cause a computer to function wrongly or even stop working. Using malicious software to attack a computer is unethical.

- **Commandment 3**

Simply put: Do not spy on another person's computer data.

Explanation: We know it is wrong to read someone's personal letters. On the same lines, it is wrong to read someone else's email messages or files or documents. Obtaining data from another person's private files is nothing less than breaking into someone's room. Snooping around in another person's files or reading someone else's personal messages is the **invasion of his privacy**. There are exceptions to this. For example, spying is necessary and cannot be called unethical when it is done against illegitimate use of computers. For example, intelligence agencies working on cyber-crime cases need to spy on the internet activity of suspects.

- **Commandment 4**

Simply put: Do not use computer technology to steal information.

Explanation: Stealing sensitive information or leaking confidential information is as good as robbery. It is wrong to acquire personal information of employees from an employee database or patient history from a hospital database or other such information that is meant to be confidential. Similarly, breaking into a bank account to collect information

about the account or account holder is wrong. Illegal electronic transfer of funds is a type of fraud.

- **Commandment 5**

Simply put: Do not contribute to the spread of misinformation using computer technology.

Explanation: Spread of information has become viral today, because of the Internet. This also means that false news or rumors can spread speedily through social networking sites or emails. Being involved in the circulation of incorrect information is unethical. Mails and pop-ups are commonly used to spread the wrong information or give false alerts with the only intent of selling products.

- **Commandment 6**

Simply put: Refrain from copying software or buying pirated copies. Pay for software unless it is free.

Explanation: Like any other artistic or literary work, software is copyrighted. A piece of code is the original work of the individual who created it. It is copyrighted in his name. In case of a developer writing software for the organization he works for, the organization holds the copyright for it. Copyright holds true unless its creators announce it is not. Obtaining illegal copies of copyrighted software is unethical.

- **Commandment 7**

Simply put: Do not use someone else's computer resources unless authorized to.

Explanation: Multi-user systems have user specific passwords. Breaking into some other user's password, thus intruding his private space is unethical. It is not ethical to hack passwords for gaining unauthorized access to a password-protected computer system. Accessing data that you are not authorized to access or gaining access to another user's computer without his permission is not ethical.

- **Commandment 8**

Simply put: It is wrong to claim ownership on a work which is the output of someone else's intellect.

Explanation: Programs developed by a software developer are his/her property. If he is working with an organization, they are the organization's property. Copying them and propagating them in one's own name is unethical. This applies to any creative work, program or design. Establishing ownership on a work which is not yours is ethically wrong.

- **Commandment 9**

Simply put: Before developing a software, think about the social impact it can have.

Explanation: Looking at the social consequences that a program can have, describes a broader perspective of looking at technology. A computer software on release, reaches millions. Software like video games and animations or educational software can have a social impact on their users. When working on animation films or designing video games, for example, it is the programmer's responsibility to understand his target audience/users and the effect it may have on them. For example, a computer game for kids should not have content that can influence them negatively. Similarly, writing malicious software is ethically wrong. A software developer/development firm should consider the influence their code can have on the society at large.

- **Commandment 10**

Simply put: In using computers for communication, be respectful and courteous with the fellow members.

Explanation: The communication etiquette we follow in the real world applies to communication over computers as well. While communicating over the Internet, one should treat others with respect. One should not intrude others' private space, use abusive language, make false statements or pass irresponsible remarks about others. One should be courteous while communicating over the web and should respect others' time and resources. Also, one should be considerate with a novice computer user.

### Assessment

- Briefly explain the ten commandments of computer ethics

## Week 9

### Topic: SAFETY MEASURES

#### SAFETY MEASURES

A person who uses computer sometimes face many problems if the computer is used for a long period of time. The problems may be health related, like headache or vision problems and waist pain.

#### ERGONOMICS

Ergonomics is the study people, their physical character and the ways in which the function in relating to their working environment, the finishers and the machine they use the main goal of ergonomics is to the design of keyboard, computer, desk, chairs and others in the work place.

Back and neck strain can be avoided by ensuring that the chair which you seat provide proper support and by placing the monitor when you can comfortably.

- **MONITOR PLACEMENT:** The top edge of the monitor should be at the level of the eye or slightly lower than it. You can use a stand to raise the monitor to appropriate level on your desk.
- **POSTURE:** When you are seated, your feet should be flat on the floor and you should not lean forward or slouch in your chair. You should shift position often and stand up to stretch your arm and legs at least one hour.
- **CHAIR:** Adjustable chair that provide support for the lower back should be used.
- **Ergonomic keyboard:** They are designed to reduce the risk of the waist and hand injury that results from prolonged use or repetition movement. An ergonomic keyboard includes alternate key layout and plans set to minimize strain while typing.

- To prevent wrist strain while typing, keep your elbow level with the keyboard and your wrist straight and higher than your fingers while you use a mouse, move the mouse with your entire arm instead of your wrist.

## GENERAL SAFETY MEASURES

1. The lighting in the room or office should be moderate
2. Keep liquid away from the computer
3. Protect the computer from dust
4. A glare filter should be used to reduce or prevent eye strain

## Assessment

- Mention safety measures in computer use

## Week 10

### Topic: Safety Measures – The Computer Laboratory

#### Computer Laboratory

A **computer lab** is a space which provides **computer** services to a defined community. **Computer labs** are typically provided by libraries to the public, by academic institutions to students who attend the institution, or by other institutions to the public or to people affiliated with that institution.

#### Rules and Regulations of Computer Laboratory

1. Students are not allowed to enter the Computer Laboratory without their Instructor or any authorized personnel. The Instructor should be the first person to come in and the last one to leave the laboratory. No computer laboratory shall be opened if there will be no instructor or IT personnel present in the laboratory.

2. Instructors shall closely monitor the conduct of their students while they are inside the laboratory. The Instructor shall not be allowed to leave the class during the instructor's assigned laboratory hours. In the exceptional event that the instructor must leave the class, the instructor must inform IT Personnel.

3. The student must check the computer unit and its peripherals attached before using it. The student must immediately inform the instructor if there's any defect, error or damage observed at the computer (hardware/software) assigned or if there are any missing peripherals (mouse, keyboard, etc.). The instructor should immediately report the incident to IT Department.

4. Students are not allowed to bring bags, food and beverages inside the laboratory. Chewing gum, eating, drinking, smoking, littering are prohibited inside the computer laboratory.

5. Users should always be on guard with their valuables (such as mobile phone, USB flash drive, wallet, and other electronic devices). The IT Department will not be held liable for the loss or damage of any personal belongings of laboratory users.

6. Users are responsible for saving their documents on their own flash drives, any information saved or installed on the systems hard drive will be deleted once the Computer is rebooted (restarted).

7. No one is allowed to alter or delete configuration settings of any computer laboratory equipment. Tampering, deleting or modifying CMOS/BIOS settings, IP Configuration, system parameters, or system files stored in the hard disk are strictly prohibited.

8. Students shall not be allowed to bring in any other computer unit, laptop and/or peripherals inside the laboratory. In cases where there is a need to bring in computer equipment or peripherals, appropriate permission from school authorities must be secured and proper company procedures must be observed.

9. No student or personnel shall be allowed to attach or detach any peripheral to and from any IT equipment or devices without explicit permission from the Head of the IT Department. Users are not allowed also to attach personal devices in any computer laboratory's network without permission from IT Department.

10. Accessing Pornographic, Gambling, Hate/Discrimination, torrent and other unsafe sites is strictly prohibited.

11. Users are not allowed to install, update or download any software in any computers inside the laboratories. It is also prohibited the users to boot from any bootable devices to run software in any computers in the laboratory.

12. All mobile phones must be in silent mode before entering computer laboratory. In cases where the student has to make or receive call, he/she must leave the laboratory to avoid distracting other students. Charging of mobile phone batteries is not allowed inside computer laboratory.

13. Playing games are not allowed inside the computer laboratory, this includes video games, card games and other games. However in cases of the topic is related to games the instructor must inform the IT personnel on duty.

14. Anyone who is causing disturbance, trouble and exhibiting hostile or threatening behavior will be requested to leave the computer laboratory. Personal display of affection (PDA) inside the laboratory is not allowed.

15. Printing of manuscripts, business letters, banners, personal documents and research works are not allowed in the laboratory. Only the printing of program listings is allowed using the laboratory printer.

16. If the computer laboratory is to be used for thesis presentation, special training sessions, tutorials, and case study sessions or for other purposes outside the regular offerings of the campus, a formal written request must be approved by the Head of Administration duly endorsed by the Dean. The written request must state the name of AMA personnel who will be responsible in the safekeeping of all laboratory resources during the conduct of the event.

17. Proper computer laboratory etiquette must be observed;

- Ensure that no trash is left behind.
- Turn-off computer units and arrange the computer peripherals (mouse, keyboard and headset) after use.
- Wearing of hats/caps inside the laboratory is not allowed.
- Chairs must be returned properly to its original places



- Orderly dismissal must be observed by the instructor and the class.

18. Theft, vandalism, or abuse in any form is a grave offense and shall be dealt with accordingly. Willful violations of the above provisions shall constitute disciplinary actions. Violators of these guidelines may be subject to any, but not limited to, the following sanctions:

- admonition
- temporary or permanent suspension of computer laboratory privileges
- dismissal from the school

### **Advantages of Computer Labs:**

**1. Equity:** One of the greatest advantages of having labs in schools is the fact that in the majority of cases it means everyone can have equal access to the computers. Most labs are equipped with enough computers for each student to have a machine. This is both equitable and engaging for the students.

**2. Security and Maintenance of the Computers:** Let's be realistic...computers are expensive! When they are kept in a dedicated room controlled by a specialist teacher, they are more secure and far less prone to becoming misused or broken. Also, the computer lab teacher will be able to perform small maintenance jobs and oversee compatible software delivery.

**3. Specialist Teacher:** The actual computer lab teacher is a huge advantage of having computer labs. These are typically teachers who have been selected due to their extensive knowledge in the area of I.T. Not only do they provide solid instruction in technology for the students, but also help the regular teachers with anything technology related as well. The computer lab teacher becomes the "go to" and resource person when it comes to do with anything I.T. related in the school.

**4. Group Work Capability:** Another key advantage of having computer labs in the school is the capability to train groups of students (a whole class for instance) in key concepts or applications at the same time. If there is a particular program or application which the teacher wants the students to learn and master, the whole class can be given instruction on it at the same time and work through the technological challenges in a supported group.

## **Disadvantage of Computer Labs:**

**Frequency of Instruction:** This is one of the more obvious disadvantages when we are discussing computer labs. Essentially, the lab is shared by the entire school and therefore is not available very often. It becomes a real juggling act to ensure that the students and their classrooms are all granted equal access. If the majority of the technology is kept in the lab, the only time the students are thus able to expand their skills in this area is when it is their turn to visit the lab. Of course, most labs have open periods for drop ins, but this does not always work out so well as these often conflict with existing schedules.

## **Assessment**

- List ten rules and regulations of the computer laboratory.
- Mention three advantages of computer laboratories.