COMPUTER NETWORK

1) **What is computer Network ? List any three advantage.**

Computer network is a group of interconnected computers through transmission media in order to communicate and share resources like hardware, data and software. Any three advantage of computer network are :

. Data and software of computer can be shared with other computer on the network.

.Only the authorized user of a network can use the facilities of the network.

. Computer on the network can communicate with each other .

2) **Computer Network reduces expenses of an office .Justify this statement with an example.**

Computer Network can allow business to reduce expenses and improve efficiency by sharing data and common equipment, such as printers, among many different computers. At the same time , the network may be connected by cables ,telephone lines, infrared beams etc, which is cheaper and helps to reduce the expenses.

3) **List the Disadvantage of computer network .**

.Data and information may be stolen by computer hackers if the security of the network is not reliable.

.if any computer in a network gets affected by computer virus, there is the high chance of spreading computer viruses on the other computer.

.Computer on the network have to depend on the server computer for resources.

.This sharing of information may leak the privacy of other clients.

4) **What is communication protocol ? List any four protocols.**

A communication protocol is asset of rules by which computers on the network communication with each other. Any four protocols used on the networks are as follows:

.FTP (File Transfer Protocol)

.TCP/IP(Transmission Communication Protocol)

.POP (Post Office Protocol)

.HTTP (Hypertext Transfer Protocol)

5) **What is Network topology ? List any three basic topologies.**

The network topology is the cabling pattern of an interconnection of computer on the network .It can be defined as the physical layout of cabling for connecting computers and other network devices on the network which describes how the computers and networking devices are linked with each other and how they communicate. The three topologies are as follows:

. Bus topology

.Ring topology

.Star topology

6) **What is bus topology ? List its disadvantages and advantage.**

The topology in which nodes are connected in a daisy chain by a linear sequence of buses which is formed by joining many segments of co-axial cables with BNC jacks and T-connectors is known as bus topology.

The disadvantages of bus topology are as follows:

.The entire network does not work if there is a problem in any segments of the Network bus.

.It is difficult to find fault.

.It provides limited flexibility for change.

The advantage of bus topology are as follows:

.It is inexpensive and easy to install

.The failure of one computer does not affect the performance of the rest of the network.

.Computer may be easily added or removed from the network.

7) What is star topology? List its advantages and disadvantages.

The star topology is the most popular network topology used to connect computers and other network devices in which nodes are connected to a centrally-located device called hub in the form of a star.

The advantages of the star topology are as follows:

.If any node fails, it does not affect the remaining portion of the network.

.It can be extended easily to any size.

.There is less chance of failure of nodes due to cables, connectors and other networking devices.

The Disadvantage of Star Topology are as follows:

.If the central switch /hub fails, the whole network goes down.

.Long cable length is required since each device is directly connected to the hub/switch.

.It may be costly to install since long length cable is required.

8) Write Short notes on clients and server.

A client is a network computer that utilizes the resources of other network computers, including other clients. The client computer has its own processor, memory and storage and can maintain some of its resources and perform its own task and processing.

A server is a computer on the network which controls and manages opther computers on the network. It provides facilities of the sharing of data , software and hardware resources to other computers. The server computer must be the powerful computer having higher processing and storage capacity.

9) What is Ring topology ? Write its advantage and disadvantage .

In ring topology all the computers or devices are connected to each other in a closed loop by single communication cable . Data transfer takes place in one direction from one node to another around the ring . It is also called loop network.

Advantages:

.Each computer does not have to depend on the central device as each computer controls transmission to and from itself .

.It has short cable connection which increases network reliability.

.It supports very high data transmission rate.

Disadvantages:

.It is difficult to change network structure.

.If a single computer fails , at least a portion of the network won't work.

10) Mention the differences between client-server network and peer-to-peer network model.

Client-Server Network Model	Peer-to-peer Network Model
It is a network model where there is ate least one server and one or more workstations.	It is a network model where there are two or more client and no server.
In this model, all rights are with only server computer.	In this model, all the computers have equal right.
It is known as domain model	It is known as workgroup model.

11) Write any four advantages of client server network.

.Only an authorized person can access the resources of the network.

.It is more secured than the peer-to-peer network.

.All the workstations can be managed from a single server computer.

.The required application can be installed on the server computer instead on the individual workstation.

12) Define peer to peer network with its disadvantages.

A network in which all the computer have equal right and are suitable for only small geo-graphical area such as small rooms, building, school, etc. is known as peer to peer network.

Disadvantages:

.It has low level security than the client-server network.

.The expansion of the network is limited.

.The network performances degrade with heavy load.

13) Define client server network with its disadvantages.

A network in which all computers are connected to a central device (server) and communication is done through server is known as client server network.

Disadvantages:

.All the workstation has to depends upon server computer.

.It is difficult to set up the clients-server network.

.A trained administrator is required to handle it.

COMPUTER VIRUS

Computer Virus:

Computer virus is a type of destructive program that can replace itself by making copies of itself without the knowledge of the user .Computer virus is a term given to man-made computer software or system to destroy computer programs or computer. The virus destroys data, useful application, programs or computer. The virus destroys data, useful application, programs and even the operating system. Computer virus hides themselves in other host files. They are not visible to us. The viruses can corrupt , deletes files and programs.

Characteristics of computer Virus

.The virus can easily transfer from one file or computer to another .

.The virus can multiply itself

.The virus can hide from users.

The different types of virus on the basis of infected area are:

a. **Macro virus :** Macro virus resides inside files. Macro virus is commands which are designed to infect a specific type of document file such as MS-Word or MS-excel support. At present, Microsoft company have designed macro virus protection tools. The examples of such virus are Melissa, XM.Yohimbe, I love you etc.

b. **Boot Sector virus :** The boot sector virus infects the information system during the start-up process. It tends to create the bad sectors of the hard drive or floppy disk. The virus infects the system by using infected diskettes during start up. The entire computer system becomes slow by reading the virus from the disk boot sector. The examples are Stone, Disk killer, Danish Boot etc.

c. **File Infector Virus** : File infector virus infect application programs. They may attach themselves to any executable file, usually.COM .EXE files. An application program infector

takes control after the initial use of the infected program. The examples of such viruses is Jerusalem, cascade etc

d. **Multipartite Virus :** Multipartite virus is the combination of boot sector virus and program virus . It can infect both application programs and the boot sector of a disk. When the infected program is executed, these viruses infect the boot record. When you boot the computer the next time , the virus starts infecting other program files on the disk. The example of such virus is Tequila, Flip etc.

e. **Polymorphic Virus :** A polymorphic virus is self-encrypted virus avoid detection of the scanner. Such viruses actively hide themselves from antiviral software by either masking the size of the file they hide in or temporarily removing itself from the infected file and placing a copy of itself in another location. The examples of such viruses are phoenix, Evil etc.

Some of the effects of virus are as follows:

a. The speed of computer is reduced .
b. The instruction of program is reduced
c. Data may be lost in the database.
d. Virus may transfer from one file to another.
e. It corrupts the system data.

Protection from Virus

a. Install anti-virus software from a well known, reputed company and use it regularly.
b. Do backup our entire system on a regular basis.
c. Do not use any pirated software.
d. Lock the computer system using password to prevent our computer from being used by others.
e. Do not download any programs from the internet unless we are confirmed that they are virus free.
f. Be careful while checking mail having attached documents.

INFORMATION AND COMMUNICATION TECHNOLOGY

1) What is information and communication technology (ICT) ?

Computer technology is also called as information technology which process data and provides information and telecommunication. This is the technology of sending data and message over long distance.

The term ICT is now used to refer to the combination of computer technology with telecommunication as well . so the combination of a computer network technology with telecommunication is called information communication technology.

ICT can be defined as the set of technological tools and resources used to communicate and create, disseminate, store and manage information. These technology includes computers, internet, broadcasting technologies and telephony.

2) Describes the uses of ICT in the field of education.

ICTs are playing the remarkable role in the education sector. Teachers uses ICTs to research for teaching materials, participate in the online conference as well to avoid their teaching. Students uses ICTs as reference tool. They use internet to search for their study materials.In the

online system of study, students can access class notes, submit assignments and also join discussion group with the help of ICTs. Researchers use ICTs to collect and process data. School administrators use ICTs for administrative purposes.

3) What are the advantages of ICT in health ?

ICT applications have been valuable resources in the medical field. They support efficient exchange of information between health professionals, they enable transfer of patient record and can improve quality of care provided by health professionals. Ct scan, Ultra Sound, ECG are done by the help of ICTs to diagnosis different diseases.

4) What do you mean by E-commerce ?

Buying and selling goods by the use of the internet is known as e-commerce.E-commerce helps in boosting the economy.

5) Describes the use of ICT in Banking.

ICTs control the entire banking system that also includes
"Electronic Banking Services". It is also known as the nerve center of the banking system around the world. Customers use ICTs to make transaction at 24 hours services centers. Business persons use ICTs to save their time by using online services. Bank administrators use ICTs to control the entire banking system.

COMPUTER OVERVIEW

1) What is computer ? List any four features.

Computer is an electronic data processing device capable of taking an input data, processing them and displaying the processed result at very high speed under the control of set of instruction. The features of computer are:-

- Speed
- Accuracy
- Versatility
- Diligence
- Automatic

2) Define the term 'data' and 'information'.

Data is defined as the raw facts or symbols which are collected from various sources and need to be processed. Information is defined as the desired or meaning full result obtained after processing the data.

3) How many steps are there in information processing cycle? Describes them.

The information processing cycle has four steps. They are follows:

- Input: The computer gets data from the user through input devices such as keyboard, mouse etc. This is the very first step of the computer.
- Process: This is the second step of the computer cycle. In this step the computer's processing device process the input data based on instructions. CPU is the main processing unit of the computer.
- Output: This is the third step of the computer cycle. The computer gives meaningful information after completion of processing task which is displayed on the output

devices, monitor , printer, plotter etc are the some of the common examples of output devices.

- Storage: This is the fourth step of computer cycle. The computer permanently stores the result of processing on Hard disk or some other kinds of storage media.

4) Why is computer called information processing machine?
Since , the computer accepts raw data as input and converts into information by means of data processing. It is called information processing machine (IPM)

HISTORY OF COMPUTER

1. Who is considered as the father of computer science ? What are his inventions.
English mathematician Charles Babbage is considered as the father of computer science. His inventions are Difference Engine and Analytical engine.
2. Why is Charles Babbage considered as the father of computer Science?
The concept of input, processing and storage used by Charles Babbage in his analytical engine became the basic for the evaluation of the using bits in his machine. Since the dream of modern computers has come true only due to the Babbage's innovation idea , he is considered as the father of computer science.
3. Who is known as first computer programmer? Why?
Lady Augusta Ada Lovelace is known as first computer programmer because she was the person who suggested Charles Babbage to use binary number system in his Analytical engine and operated it for the first time.
4. Write short note on Mark-I.
Mark-I was the first electro-mechanical computer developed by Howard Aiken. It was named as ASCC and was 8 feet high, 51 feet long and 2 feet wide. It used more than 7 lakh 50 thousand parts and weighed more than 32 tons.

CLASSIFICATION OF COMPUTER

Classification of Computer On the basic of working Principle

The computer is an electronic device which accepts the input and processes them to give desired output. There are various types of computer available in the market. We can classify the computer as special purpose and general purpose computers. Special purpose computer are applicable for special area and have limited area for application of temperature recording, speed measurement, telephone billing etc, but general purpose computer are the standard computers used fro general application like word processing, spreadsheet, database application, internet access, program development etc.

Analog Computer : The computer that works with natural phenomena and physical values like earthquake measurement , speed of wind, weight light etc is known as Analog computers. It is especially used in scientific work, medical and industrial field. These are special purpose computers. It measures physical values such as temperature or pressure that fall along a continuous scale in

temperature or pressure. For example : Speedometer in cars and our watch are the example of analog computer.

Features of Analog Computer

- It is specific to the particular task so we cannot use it for multiple applications.
- It works on continuous data and gives continuous output.
- It works in real time and has no storage capacity.
- It gives output in the form of the graph, signals, table etc.

Digital Computer

A computer that works with digital value 0 and 1 , where 0 is OFF and 1 is ON. It works with discrete data. Digital Computer does not measure the continuous output. Most of the electronic system is based on the digital system. Digital computer are very popular for actual computer work like preparation of the report, documentation, billing and other graphical work etc. The entire PC (personal computer) used today on the different fields are digital computers. They are classified into two groups:

Specific purpose Digital Computer :

Digital computer which are used to perform specific task is known as specific purpose digital computer. It only perform specific task.

General purpose Computer :

Digital computer which are used to perform general task is know as general purpose computer. It is used perform various tasks.

Features of Digital computer

- It works on the discontinuous or discrete data.
- It is application for a general purpose so this is very versatile for an application.
- It is based on the digits 0 and 1
- It is faster.
- It has storage section also.
- It is highly accurate and reliable than an Analog system.

Hybrid Computer

It is the combination of Analog and digital computer system. It works with continuous and discrete value. The good qualities of analog and digital computer are combined on this computer and made as the hybrid computer. These are used in ICU(Intensive care Unit) of hospitals, jet planes, and other data from analog and digital to analog and vice-versa.

Features of hybrid computer

- It is an expensive system.
- It is designed for the special purpose so it is not versatile.
- It works on discrete and continuous data .
- It has limited storage.
- It is complex than another computer system.

Differentiate between analog and digital computers

Analog computer	Digital Computer
They process continuous data .	They process discontinuous data.
They are special purpose computers.	They are general purpose computers.
They are expensive than digital computers.	They are cheaper than analog computers.

They produce Analog signals.Eg. seismograph etc.	They produce digital signals. Eg.personal computer, Laptops etc.

Super Computer : Super Computer is the fastest, most expensive, big in size, and most powerful computer that can perform multiple tasks within a second. It has multi-user, multiprocessing, very high efficiency and large amount of storage capacity. It is called super computer because it can solve difficult and complex problem within a nano second. These computers are used to forecast the weather and global climates, digital film recording, etc.

Mainframe Computer: Mainframe Computer is the large sized computer that covers about 1000 sq feet. It is general purpose computer that is designed to process large amount of data from different terminals and multiple users and process them at the same time. More than 100 users are allowed to work in this system. It is applicable for large organization with multi-user.

Minicomputer : Mini computer are medium sized computer. so, these are popular as middle ranged computer. It is also multiple user computer and supports more than dozen of people at a time. It is costlier than microcomputer. It is also used in university, middle range business organizations to process complex data. It is also used in scientific research, instrumentation system, engineering analysis etc.

Microcomputer: Most popular general purpose computers which are mostly used on day to day work microcomputers. These are popular as Home PC or personal Computer because these are single user computers and mostly used for personal use and application. These supports many higher level application cost and easy in operation.

COMPUTER GENERATION

Computer Generations:

The phase wise development of computers on the basis of main component, their size, processing speed, system architecture, resulting improvement in computer lower cost, higher speed, smaller size, greater memory capacity as well as reliability is known as computer generations. Each generation of computer is made improvements over the previous generation computers. The distinct phases on which the development of modern computers took place are:

1 First Generation Computers
2 Second Generation Computers
3 Third Generation Computers
4 Fourth Generation Computers
5 Fifth Generation Computers

1. **First Generation Computers (1945-1955):**

The computers during the period 1945 to 1955 that used vacuum tubes as the main electronic component are called first generation computers. They used magnetic drums for the primary memory. They were large in size, slow and expensive. Examples: ENIAC, EDVAC, UNIVAC, etc.

Features:

1)Vacuum tubes were used as the main electronic component.

2)They were large in size and consumed large amount of electricity.

3) Large amount of heat was produced. Machine level language was used for programming which was tedious.

4)Their processing speed was up to milliseconds.

2. Second Generation Computers (1956-1964):

The computers during the period 1956 to 1964 that used transistors instead of vacuum tubes as the main electronic component are called second generation computers. Transistors were made from the semiconductor material due to which the second generation computers are faster and better than first generation computers. Examples: IBM-1401, IBM-1620, CDC 3600, etc.

Features:

1)Vacuum tubes were replaced by transistors.

2)They consumed less amount of electricity as compared to first generation computers.

3)They used magnetic tapes and magnetic disks for storage.

4)Assembly language is was used for programming.

5)Their processing speed was up to microseconds.

3. Third Generation Computers (1965-1971):

The computers during the period 1965 to 1971 that used IC (Integrated Circuit) as the electronic component are called third generation computers. The IC made the third generation computers more reliable, smaller, faster, high storage capacity and less expensive as well. Examples: IBM360, ICL-1900, VAX-750, etc.

Features:

1)They used IC technology.

2)They used semiconductor device as memory.

3)High level programming languages were used for programming.

4)Size was greatly reduced and consumed less electricity.

5)Multipurpose Operating system was used.

4. Fourth Generation Computers (1972-Present):

The computers during the period 1972 to the present time that used VLSI and ULSI based microprocessors are called fourth generation computers. The microprocessor is programmed by the instructions required to the computer. All the modern computers that we are using these days fall under this generation.

Examples: IBM PC, Apple Macintosh, Dell, etc.

Features:

1)They are based on microprocessor technology.

2)They are the smallest and cheapest among all other computer generations.

3)They have very high processing speed even in picosecond.

4)They use GUI (Graphical User Interface) operating system so are friendly.

5) They are portable and quite reliable.

5. Fifth Generation Computers (Present-Future):

The future computers that will use bio-chips (genetically engineered chips) are called fifth generation computers. These computers are in developing phase but not completely implemented yet. So, called future computers. These computers will use AI (Artificial Intelligence).

Features:

1)They will use bio-chips.
2)They will have parallel processing capability.
3)They will possess Artificial Intelligence.
4) They will have natural language processing capability.
5) They will have logical reasoning, IQ and self-decision making power.

***Artificial Intelligence**: Artificial Intelligence is an intelligence demonstrated by machines in contrast to natural intelligence exhibited by the humans. It is sometimes called machine intelligence. In other words, it is the simulation of human intelligence into machines that react and behave similar to*

COMPUTER SOFTWARE

A set of the program, which are specially written to provide the user a precise functioning like solving a specific problems is termed as a software package. For examples word processor package helps to create the documents, save the document, modify and print the documents. "Software is the collection of program and other associated documents that help to control, manage and integrate the components of a computer system to accomplish a specific task."

System Software: The software that helps to activate the computer system and provide an operating environment for another application software is called system software. It's primary work is to control, integrate and manage the individual hardware components of a computer system. This software provides an operating and programming environment where programmer and user can create and the application software for their day to day application. It can be explained by three types:

Functions

1. It supports the development of other application software.
2. It supports the execution of other application software.
3. It monitors the effective use of various hardware resources, such as CPU, memory, peripherals, etc.
4. It communicates and controls the operations of peripheral devices such as printer, disk, tape, etc.

- **Operating system (OS**) Software that helps to activate the computer system and provide a common platform to operate the computer system by the user is called Operating system. The main function of OS is to manage the disk access, files process etc. Examples:- Linux, Windows XP, MS-DOS etc.
- **Device Drivers** To activate and recognize the hardware devices computers system requires special software called device drivers. To work with all devices, we need this software. For example to work with the modem, printers we have to install their driver software then only these devices will work. Until we install a device driver, OS will not recognize the device the device connected to the system.
- **Utility Software** Utility software helps a computer to work accurately and diligently. Any utility helps to restore backup on a computer. Some utility software recovers data, manage files, protect against computer virus and it also neutralizes virus from computer. Some utility

software are attached with an operating system, such operating system is a text editor, backup utility, disk defragmentation and anti-virus.

- **Languages Processor** Translator program is a computer program that converts the programming instruction written in human convenient form into machine codes. The computer works only on the digits which are o to 1. All the commands, data, and instructions are required to be converted into machine code which is the combination of 0's and 1's.
  - **i) Compilers:** Translator system that compile the whole program and translate it into machine code at a time are compilers. This translator translates whole program at a time and creates object code then executive code. E.g. C program, Pascal etc.
  - **ii) Interpreters:** A translator that can convert the source code (program code) in linear manner without looking at an entire program at a time. It translate each statement or lines at one time and translates another line only after completing previous line. E.g. BASIC
  - **iii) Assemblers:** It is a translator that can convert the assembly level language into machine code. It is also called source program.

Compiler	Interpreter
It converts the statement of high level language at once	It converts the statement of high level language line by line
It is difficult to debug.	It is easy to debug.
It executes faster e.g. C, COBOL	It executes slower. E.g. BASIC,QBASIC

Application software:

Application software is a set of programs, designed to do specific tasks such as producing electricity bill, producing bills in supermarket or any business house. So, we can say that software developed for users purpose is called application software. Some of the popular application software are word processing, spreadsheet, database, graphics, etc.

There are two types of application software namely, packaged software and customized software.

1. **Packaged Software:**
   The generalized set of programs which performs a specific data processing tasks for variety of users is known as packaged software. It is designed to meet the needs of users for particular type of tasks. E.g.: MS-Word, MS-Excel, MS-Access, etc.

2. **Customized Software:**
   The specialized set of programs which performs a specific tasks for specific individual or organization is known as customized software. It is designed to meet the specific requirement of an individual or an organization. E.g.: SLC Board Software, School Management Software, etc.

Importance of Multimedia in Various Fields

Multimedia is everywhere whether you are at a railway station looking at the schedule screens or watching your Television or using your mobile. It has changed everything from manufacturing to the advertising and education to healthcare industry. It has revolutionized everything everywhere not only in Nepal but also the entire world.

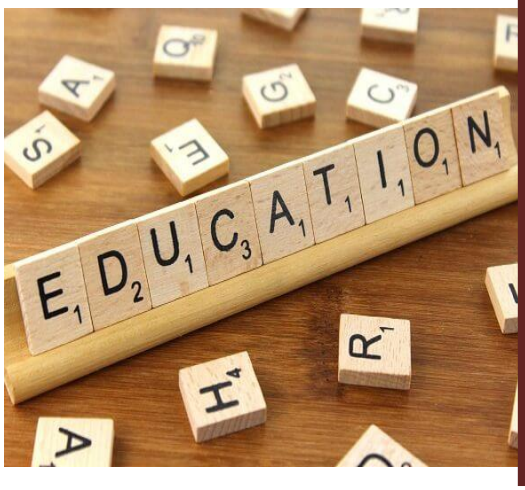
1. Advertising

Advertising has changed a lot over the past couple of decades, and this is mainly due to the increased use of the internet in business. Multimedia plays a great and a vital role in the field of advertising. As whatever it is whether print or electronic advertisement, they first are prepared on the computer by using professionals' software's and then it is brought in front of the target audiences.

Some of different types of advertising are:

- Print advertising
- Radio (audio) advertising
- Television (video) advertising
- Digital advertising
- Display Ads
- Remarketing
- Video
- Social
- Search
- Mobile advertising

2. Education

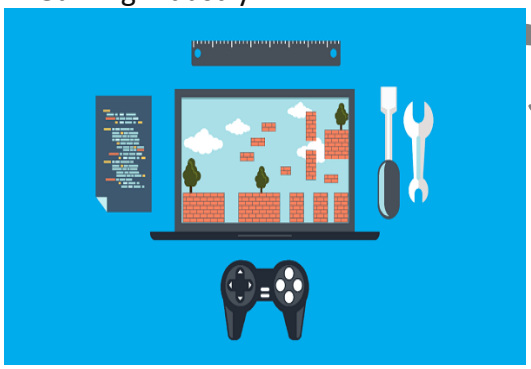


In the area of education too, the multimedia has a great importance. Talking particularly about the schools, their usage has a significant role to play for children also. It is broadly used in the field of education and training. We used audio for imparting education even in traditional method, where charts, models etc. were used.
Nowadays the classroom need is not limited to that traditional method rather it needs audio and visual media. With the use of multimedia everything can be integrated into one system. As an education aid the PC contains a high-quality display with mic option. This all has promoted the development of a wide range of computer-based training.

3. Mass Media

It is used in the field of mass media i.e. journalism, in various magazines and newspapers that are published periodically. The use of multimedia plays a vital role in a publishing house as there are many works of newspaper designing and other stuff also.
Nowadays it's not only the text that we can see in the newspaper, but we can also see photographs in newspaper, this not only makes newspaper a perfect example but will also explain the worthiness of hypermedia.

4. Gaming Industry



One of the most exciting applications of multimedia is games. Nowadays the live internet is used to play gaming with multiple players has become popular.
In fact, the first application of multimedia system was in the field of entertainment and that too in the video game industry. The integrated audio and video effects make various types of games more entertaining.

5. Science and Technology

Multimedia had a wide application in the field of science and technology. It is capable of transferring audio, sending message and formatted multimedia documents. At the same time the it also helps in live interaction through audio messages and it is only possible with the hypermedia. It reduces the time and cost can be arranged at any moment even in emergencies.
At the same time, it is useful for surgeons as they can use images created from imaging scans of human body to practice complicated procedures such as brain removal and reconstructive surgery. The plans can be made in a better way to reduce the costs and complications.

6. Pre-Production

Pre-Production comprises of everything you do before you start recording of audio or video. This phase of your project is extremely important. Everything you do in pre-production will save time and aggravation during production and post-production. The techniques shown will include: how to design storyboards, including how to show correct camera angles for the scene, writing your story, and how to use video transitions can be done with the help of multimedia.

7. Post Production

It is the final step of production involves editing scenes, adding various transition effects, addition of voice to characters, background score, dubbing and much more can be done using multimedia technologies.

8. Fine Arts

In fine arts, there are multimedia artists, who blend techniques using different media that in some way incorporates interaction with the viewer. One of the famous artist is Peter Greenaway who is blending cinema with opera with the help of all sorts of digital media.

9.Engineering:

Software engineers often use multimedia in computer simulations for anything such as military or industrial training. It is also used for software interfaces which are done as collaboration between creative professionals and software engineers.

10. Research

In the area of mathematical and scientific research, multimedia is primarily used for modelling and simulation. For example, looking at a molecular model by a scientist of a particular substance and manipulate it to arrive at a new substance.

11) Business

Business applications in multimedia are presentation, training, marketing, advertising, product demos, catalogues, networked communication and voicemail. The presentation is very useful in many aspects of work and life. Because these are important in business to sales, training, teaching, lecturing and generally entertaining an audience. Presentation allows us to lecture in front of audiences and to present our product or project. Presentation can be use in oral, multimedia, power point presentations, educational or training sessions to giving simply a talk on a subject to group a voluntary basis for pleasure.

12) Entertainment

Multimedia is heavily used in the entertainment industry, especially to develop special effects in movies and animations (VFX, 3D animation, etc.). Multimedia games are a popular pastime and are software programs available either as CD-ROMs or online. Some video games also use multimedia features.

13)List the components of multimedia. Explain shortly about them.

Text: The text is a primary components of multimedia. Most of the information can be presented with the help of text. The text can be emphasized by using different fonts, fonts colors etc.

Graphics: A graphics medium is a digital representation of non-text information, such as drawing, charts or photographs. The graphics medium can be used with text medium.

Audio: Audio is one of the important components of multimedia. It is music, speech, or any other sound. The audio medium is normally combined with animation medium.

Video: The video medium is the effective medium for presenting information. The video medium presents the moving images of real events. In the video, both sound and picture media are used for presenting information.

Animation: The animation medium presents the sequence of still images of artwork at a rapid speed that looks like the images is moving. With the help of animation, any event can be explained more clearly.

14) What are the advantages and disadvantages of multimedia ?

Advantages

- It can be used to help the student and teacher to teach as well as to learn the given topics easily.
- It can be used to spread knowledge all over the world at a low cost.
- It can be used for any subjects and for everyone.
- Multimedia system is generally very interactive. So , it is interesting to use.

Disadvantages

- It is expensive to produce the multimedia system.
- It is expensive to set up multimedia contents.
- It needs well-trained manpower to create and use it.

15) What is a multimedia computer ? List the hardware components required for the multimedia computer.

The computer that has the capability to create multimedia products and can handle or presents more than one medium simultaneously is known as the multimedia computer. The list of hardware components required in multimedia computer are as follows:

- Microprocessor
- High storage hard disk

- RAM
- High-resolution graphics cards
- Optical disk drive etc.

WORD PROCESSING SOFTWARE

A word processor is a software that allows us to create, edit, view, format and print text document in the computer. Most widely used computer word processing software is Microsoft word, word perfect, word star etc. Ms-word is developed by Microsoft Corporation, USA. It allowa us to create any types of text documents.

Starting MS-Word

To start word program, we should follow the following steps:

- Step 1 : Click on the start button
- Step 2: Move the mouse pointer over search box.
- Step 3: Type Microsoft word in search box
- Step 4:Click on the Microsoft word .Then word windows appears on the screen.

How to break page using Ms-Word ?

A page break is a code inserted by the software program that tells the device where to end the current page and begin the next. To insert page break in Ms-Word we should follow the following steps:

- Step1: Click insert on the file menu
- Step2: Select page break from the drop down
- Step3: Select page Break and click Ok.
  OR Microsoft word supports the shortcut key Ctrl + Enter to insert a page break.

Formatting Text

We can follow following steps to change font types:

- Step1: Select the text you wants to change the font type.
- Step2: Click on the drop down arrow of Font button in the Font group on the Home tab. The list of font types will appear.
- Step 3: Click on the font name that you want to apply.

Changing the font Size

We can increase and decrease he size of the fonts in the document. We should follow following steps to change the size of the font.

- Step1: Select the text whose size we want to change.
- Step2: Click on the drop-down arrow of the font size button in the font group of the home tab.
- Or, Microsoft word supports the shortcut key Ctrl +] to increase and ctrl + [to decrease the font size.

Changing the font color

We can apply different color for the different text in the document. We should follow the following steps to change color of fonts:

- Step1: Select the text whose color we want ot change.
- Step2: Click on the drop down arrow of the Font color in the font group of the Home tab. Then color box with different colors will display.
- Click on the desired color from the list.

Copy Formatting

The format printer will copy formatting from specific portions of your document and apply it to other portion of our document.

- Step 1: Select a portion of our document containing the formatting we would like to apply.
- Step 2: Click the format painter button
- Step 3: Select the portion of our document where we would like to apply the formatting.

Adding Tables Tables are used to display data in tabular format.we should following steps to create table using Ms-Word.

- Step1: Place the curser on the page where we want to insert the new table.
- Step2: Click on the insert Tab.
- Step3: Click the Tables Button on the Tables Group. We can create table by following ways:
  i) Highlights the number of row and columns.
  ii) Click on insert Table and enter the number of rows and columns.
  iii) Click on Draw table, create our table by clicking and entering the rows and columns.
  iv) Click on Quick tables and choose a table

Adding Picture : To insert picture we should follow the following steps:

- Step 1: Place the curser in the document where we want to insert the picture.
- Step 2: Click on picture button from the illustration group of insert Tab. Then picture dialog box will appear.
- Step 3: Browse the picture from the box and select it.
- Step 4: Click on insert from the insert picture dialog box.

Adding Watermark: Watermark may be any text or design that appears behind the text on our document. We should follow following steps to add watermark on our document.

- Step1: Click on the Page layout tab.
- Step 2: Click on the watermark button in the page Background group.
- Step3: Select the desired watermarks.

Mail Merge: Mail Merge is a powerful tool for writing and sending a personalized letter or e-mail to many people at the same time. Mail merge imports data from another source such as excel and then uses that data to replace placeholder throughout your message with the relevant information you are messaging.

Special Character: Special Character are punctuation, spacing or typographical character that are not generally available on the standard keyboard.

SPREADSHEET SOFTWARE

Microsoft Excel: Microsoft Excel is the popular Windows worksheets, charts, database and list operations, and application programming all in one software environment. It is used for managing, analysing and presenting data in a graphical manner. Microsoft Excel spreadsheet is an application program that organizes data into rows and columns and allows the user to perform calculation on it. The spreadsheet has rows and columns and intersection of rows and columns forms a cell where we store data.

Advantage of Ms-Excel:

- Ms-Excel is very easy to use.
- We can easily perform calculation by using different functions available in this program.
- We can work with two or more than two worksheets at a single time.
- We can represent data through different charts and graphs.

Starting Ms Excel 2007:

To start Ms-Excel program we have to follow the following steps:

- Step1: Click on the start button.
- Step2: Move the mouse pointer over all program option.
- Step3: Move the Mouse pointer over Microsoft office option.
- Step4: Click on the Microsoft Excel 2007. Then the window appears on the screen.

Cell refrence: Each row and column of the electronic spreadsheet has a specific name. Every rows and columns are denoted by 1,2,3…. And A,B,C…. respectively . A cell is the intersection point of a vertical columns and a horizontal row. The name of a cell is given by the combination of row and column such as A1, D15 etc. In Excel, a cell reference identifies the location a cell or group of cells in the worksheet. It's types are Relative cell reference, Absolute cell reference, Mixed cell reference.

How to merge cells ?

Merge cell is a function in the database software that allows multiple adjacent cell to combine into a single cell. This is done by selecting all cells to be merged and choosing the "Merge cells" commands. We should follow following steps to merge cells:

- Step1: Select two or more adjacent cells that we want to merge.
- Step2: Click on merge & center button situated at Home tab.

Formatting

A properly formatted and better layout worksheets makes your information easier to read, more informative and attractive. You can format a cell or range of cells or the entire worksheet in many ways. Formatting includes font name, size of the font, alignment, borders, numbers etc.

The following figure shows the formatting tool bar:

Step 1: Select the cell or range of cells where you want to change the font name.

Step 2: Select the font name and size from the font group of home menu's ribbon.

Sorting

Sorting refers to the arrangement of the data records in the ascending or descending order on the basis of numeric or alphabetic fields.

Follow the given steps for data sorting:

Step 1: Select the data which needs to be sorted.

Step 2: Click on Data tab.

Step 3: Click on Sort button.

Step 4: Type criteria on the window.

Step 5: If the selected data are header then tick on check box 'my data has header'.

Step 6: Click on the sorting option A to Z or Z to A from the Sort & Filter group of Data menu's Ribbon.

Chart in Excel

Ms Excel supports pictorial presentation of your data entered on a worksheet which is called chart. It is easy to understand numeric data by viewing in pictorial forms. Different types of charts supported by Ms-Excel are column, Bar, Line, Pie etc.
Follow the following steps to create a chart:
Step 1: Select the range of data include in chart.
Step 2: Click on the Insert menu.
Step 3: Select on the Flayer menu of the Chart group from the Ribbon of Insert menu.
Step 4: Select the appropriate Template for the graph.
Step 5: Select the desired type of graph.

Operating System

The computer system is a collection of different hardware components. So we need software that could perform the basic tasks such as recognizing input from the input devices, sending output to the output devices, keeping tracks of files and directories on the disk and control computer peripheral devices like mouse, printer, scanners etc. An OS is a collection of system program that controls the operations of the computer system. It activates and recognizes the hardware devices and provides the operating environment for other application software. It acts as the intermediary between a user and the computer hardware. It has major two objectives, first is to activate the hardware devices and other is to provide an interactive interface to the user and interpret commands so that it can communicate with the hardware. Example UNIX, MS-DOS, MS-Windows, Linux etc.

Functions of Operating System

File and folder management
Device management
Memory management
Security management
Help to run application software for user
Process and management

Types of Operating System

Operating system are categorized into different types on the basis of mode of use and user.
Based on mode of user, operating system are classified into two types:
Single user operating system: This is the type of computer system which is mostly used in desktop and laptop. It generally provides a simple computer system, which facilitates the running of a variety of software packages as well as it allows users to develop and execute programs of their own.
Multi-user operating system: The multi-user operating system allows concurrent access by multiple users of a computer. It allows many different users to take advantage of the computer resources simultaneously. It is often used in
business and offices where different users need to access the same resources, but these resources cannot be installed on every system.
We can classify the operating system on the basis user interface like command or character user interface operating system and graphical user interface operating system.

1. Command or Character-based User Interface (CUI)

CUI is a traditional user interface. It provides the interactive terminal where a user could enter the command to interpret. It was the only common place to communicate between a program and its user. Now a day also, we are using this command based interface.

2. Graphical User Interface (GUI)

With the advancement of technology, the computer system has become quicker and cheaper. Operating environment has also changed. This lead the development of graphical user interface where users can interact with the computer using picture and graphs, rather than character and commands. It displays the icon, buttons, dialog box etc. Popular GUI is Microsoft Windows.

MS-DOS (Microsoft Disk Operating System)

MS-DOS stands for Microsoft Disk Operating System. It has three essential files and many command files. These essential files are: IO.SYS (Input Output System), MSDOS.SYS (Microsoft Disk Operating System), and COMMAND.COM. These files are called system files of MS-DOS

Advantages/ Features of MS-DOS

It supports various computer languages.
It supports different disk like floppy, hard disk, CD etc.
It is small sized operating system.
It initiates the concept of operating system during the time of booting.

Disadvantages of MS-DOS

It has a command line user interface so it is totally command based operating system.
It has limited features to work with the modern computer system.
It is not so user-friendly like windows system and cannot support advance computer peripheral devices even mouse.
It is a single user, single tasking operating system.

Some terms used in DOS

Booting: The process of loading system files into computer's memory from disk is called booting. It starts when the computer is turned on. It makes computer ready to work. In the booting process, the command interpreter and system files are loaded into computer's memory. There are two types of booting: cold booting and warm booting.

Cold Booting: Booting process from off stage to on stage of the computer is performed by the switch on the computer.

Warm Booting: Booting process during the time of running the computer system is warm booting. We have to perform this process when the computer hangs up. We can perform it by pressing the reset button or pressing Alt+Ctrl+Del (Hold down the Ctrl key and Alt key and press Del key).

File: The systematic collection of related data or information or program instructions is known as file. A unique name is given for each file to identify. Such unique name is known as a file name. A file name contains name and extension. The name helps to identify the file and extension helps to identify the type of file.

Directory: Directory is the location to store files and sub-directories. It contains information about files stored on the disk like name, size, last date of modification, time of creation and disk volume label.

DOS Commands

Instructions given to the computer to work are called commands. These are the common words between the computer and the user. It gives the orders to the computer system to work. DOS Commands are categorized into two types: Internal and External commands.

Internal commands: Internal commands are built in the COMMAND.COM files. It can be executed from any DOS prompt because each of the internal commands are memory resident. As long as the computer is running, we are ready to give internal commands. Some of the examples of internal

commands are DIR, CLS, COPY etc.
External commands: Commands that need external additional files with command.com are external commands. We need additional corresponding files to run these commands. For example, we need tree.com file to run tree command. Example: XCOPY, CHKDSK, LABEL, TREE etc.

Internal and External Commands Used in MS-DOS
Internal Commands
CLS
This command clears the screen.
Syntax: CLS
Example: C:/> CLS
DIR
Syntax:DIR [drive] [switches]
where switches and their meanings are given below:
SwitchMeaning/PPage-wise pausing/WWide-wise pausing/ADDirectories/AHHidden files/0Displays files/directories in sorted order with following specifications
Use: Displays files, directories and sub-directories.
Example: dir d: /p
Output: Displays list of directory page wise
COPY
Syntax:COPY
Use: This command copies file(s) from one location to another.
Example:C:\>COPY C:\Nepal C:\china
TYPE
Syntax: TYPE
Use: Used to display the content of a file.
Example:C:\>TYPE Nepal.txt
Output: This command display the information contained in the file name Nepal.txt
Other Examples:
C:\>Type REED.txt
Now you can view the content of REED.txt
REN
Syntax: REN
Use: Used to rename a file.
Example:A:\> REN nepal.doc patan.doc
Output: This will rename the old file nepal.doc into patan.doc
Other Examples:
C:\>REN * .COM *.EXE
To rename all the files having .com as an extension into the extension .exe with the same primary file name of drive C.
DEL
Syntax: DEL filename
Use: Used to delete file(s)
Example: C:\>DEL try.exe
Output: It deletes try.exe file from drive C.

MD
Syntax: MD< directory- name>
Use: Used to create a directory
Example: C:\>MD School
Output: A directory named "School" is created in root directory C.
Date
Syntax: Date
Use: This command is used to display and change system date of the computer.
Example: C:\>DATE
Output: Current date is sat 08-04-2004
Enter new date (mm-dd-yy):
Time
Syntax: TIME
Use: This command is used to change and display the current system time of the computer.
Example:C:\>TIME
Output: Current time is 7:15:01.91
Enter new time:
CD
Syntax: CD
Use: Used to change or get into the directory.
Example:C:\> CD School
Output: This command let us get into directory School and we will be in C:\ School>
RD
Syntax: RD [directory]
Use: Used to remove a directory, but the directory must be empty.
Example: C:\>RD School
Output: It removes directory School, which is in C drive.
VOL
This command shows volume level in the disk.
Syntax: VOL [Drive:]
Example: c:/> VOL
External Commands
EDIT
Syntax: EDIT
Use: Used to edit files.
Example: C:\>EDIT Suyasha.txt
Output: This command will open the DOS file Suyasha.txt and will allow us to edit the file.
FORMAT
This command is used to format the disk.
Syntax: Format [Drive:] [Path] File name
Example: c:/ format d:/Q/

HTML

HyperText Markup Language (HTML) is the computer programming language that defines the content, layout, links and graphics that when converted by a web browser creates the web page that we see on our screen. The web pages are developed by using HTML. It is not a programming language, it is a markup language. The markup tags tell the web browser how to display the page for the user. Web pages are also called HTML documents. So, HTML are building a block
of web documents.

Advantages of HTML:

Different tags used in HTML helps to make web pages look attractive.
We can create a link between different types of documents and files.
We can display data in tabular format.

Web page

A web page (HTML file) is a plain text file that uses HTML code tags to instruct web browsers to display text and objects in some specific ways. They can be prepared using any plain text editor (such as Notepad) or by using a visual editor such as Web Page.

Web Browser

A software application which is used to locate, retrieve, and
\display content on the world Wide Web is known as a web browser. The browser is the client that contacts with the web server and request information. The web server sends information back to the web browser which displays the result, on the computer.

Hyperlink

The hyperlink is a link from a hypertext document to another location, activated by clicking on highlighted word or image.The hyperlink is the most important feature of HTML. Without hyperlinks, you can't have websites. It creates links between web pages in a website.

HTML and Its Introduction

HyperText Markup Language (HTML) is the computer programming language that defines the content, layout, links and graphics that when converted by a web browser creates the web page that we see on our screen.

HTML Tags

Different tags with their attributes are used to develop HTML documents or web pages. HTML tags are the keywords or commands used in HTML. They are enclosed by angle brackets like < HTML >. The tags tell the browser how to display the document on the web pages. There are two types of HTML tags. They are:

Container Tags (paired tags):

A container tag has start and end tag. Start tags are written within angular brackets and the end tags are written within angular bracket along with slash (/). The text and other tags are written between the start and end tags. Some examples of container tags are: < HTML > content , < HEAD> content , etc.

Empty Tags (singular tags):

Some tags do not require the end tags. The tags which have no end tags are called empty tags. Some examples of empty tags are < IMG >, < BR > etc.

Attributes

The HTML tags can also have attributes. Attributes provide additional information to describe the content of tags. The attributes are always in the start tag of the element. Each attribute has some value.

A value of an attribute is assigned by the equal sign. The values are generally enclosed in the double quotes. Common attributes are color, height, width etc.

Skeleton of HTML

HTML is a tag-based scripting language. The skeleton is its basic structure. Without it, HTML document cannot be constructed. The minimum requirement for HTML designing and its position in the document can be discussed here. The < HTML>and < /HTML> tags are the backbone or main point on which other tags are located. All the elements of HTML is written within < HTML >. The structure of HTML is as follows:

< HTML >
< HEAD > ... < /HEAD >
< TITLE> ... : written within < HEAD> tags.
< BODY>.... < /BODY >
< /HTML >

The < HTML > is the main body of HTML documents in which applet, multimedia, link and several other elements are placed. We can say that the HTML document has document
has following two important sections:
HEAD section
BODY section

How to Create an HTML file?

An Html file is a plain text file with either .htm or .html as the file extension. The three letter extension (.htm) call back to the time when computers would only allow up to three letters in the file extension. You can either use .htm or .html in file extensions.

Creating HTML Document or Web Page

You can create the HTML documents either by using the plain text editors software like Notepad, WordPad or by using web designing software like Microsoft Frontpage.

The steps to create HTML document using text editor Notepad:

Step 1: Open the Notepad. (To open Notepad, click on the Start button and choose the All programs menu. Go to the
Accessories and click on the Notepad.)

Step 2: Type the HTML code in the Notepad.

Step 3: Save the document with the extension .htm or .html.

Different Tags Used in HTML

The paragraph Tag (< P >)

This tag is used to create a paragraph on the web page. It is a container tag but its closing tag < /P > is optional. You can align the paragraph either in left, right, center or justify using ALIGN attribute.

Syntax: < P ALIGN: "left"/ "right"/ "center" etc.. > ..... < /P >

Line Breaking Tag

This tag is used for starting a new line at that point. You can put < BR > tag on the document from where you want to break the line. But it does not break the paragraph. It does not have end tag as it is an empty tag.

Syntax: Text.... < BR >

Horizontal Line tag < HR >

This tag is used to draw the horizontal line across the page. It is an empty tag. you can use different attributes with this tag such as Align, Color, Size, Width etc.

Syntax: < HR Align = "left" / "right"/ "center"/ no shade

Color = " Color _ name "
Size = " Pixels "
Width = " Percentage "

Heading Tags (< H1 > ..... < H6 >)

The heading tags are used to set different headings on the document. In the HTML, headings are used up to 6 levels (H1 to H6). The first level of heading is defined using < H1 > tag. In the < H1 > tag, the heading appears in large size. < H6
> is the last level heading where text appears in small size.

Syntax: < Hn align = "left"/ "right" / "center" > text < /Hn >
where, n is a number from 1 to 6.

Image tag (< IMG >)

Using < IMG > tag you can insert inline images into the web page. This tag does not have the end tag. Some attributes of this tag are src, width, height, align, border etc.

Syntax: < IMG >
SRC = " image file "
Width = " value "
Height = " Value "
Align = " Left " / " Right " / " Center " / " Top" / "Bottom"
Border = " Value "

Marquee Tag < MARQUEE >

The < marquee > tag is used for scrolling piece of text or
image displayed either horizontally across or vertically down on the web page. the text or picture can be animated in the browser with the help of < MARQUEE > tag. The text or picture can be put in between opening and closing < MARQUEE > tag.

Syntax:
< MARQUEE >
Behavior = " Slide " / " Scroll " / " Alternate "
Bgcolor = " Color name "
Direction = " Left " / " Right " / " Up "/ "Down "
Scroll delay = Time in millisecond
< /Marquee >
Where,

Behavior: It specifies the movement of the MARQUEE text.
Direction: It specifies scrolling direction of the MARQUEE text.
Bgcolor: it specifies the background color of MARQUEE.
Scroll delay: It defines how long to delay between each jump.

Anchor Tag (< A >)

The Anchor tag < A > is used to create all types of hyperlinks
in the web page. every anchor tag must have a closing or end tag (< /A >). The href attribute is compulsory used with this tag.

Syntax: < A HREF = "URL" > text or image to describe link < /A >

HTML Document Formatting Tags

Different formatting tags are used in HTML document to give different design in the web page. using these tags you can make your web page more attractive. Some commonly used formatting tags are < FONT >, < U >, < SUB > etc...

The font style tags are used to change the appearance of the text such as Bold, Italic, Underline, etc. Some font style tags and their syntax are as follows:

< B > tag: This tag is used to set the text in boldface.

Syntax: < B > Text... < /B >

< I > tag: This tag is used to set text in italic format.

Syntax: < I > Text... < /I >

< U > tag: This tag is used to underline the text.

syntax: < U > text.. < /U >

< SUP > tag: This tag is used to convert the text in superscript like a2, b2 etc..

Syntax: < SUP >.....Text < /SUP>

< SUB > tag: This tag is used to convert text in subscript like a2, b2 etc..

Syntax: < SUB > Text... < /SUB >

Microsoft PowerPoint

It is one of the popular presentation software developed by Microsoft. This software is available in Microsoft Office Package. We can prepare presentation slide by using PowerPoint. MS PowerPoint program is available in different versions such as MS Power Point 2000, 2003, 2004, 2007, 2010 etc. PowerPoint files have .pptx extension.

Advantages of Microsoft PowerPoint

This program is very easy to use.

We can prepare presentation slides within a short period of time.

Various themes are available in this program.

We can use different kinds of animations to make our presentation more attractive.

We can insert images, videos, etc. according to our need.

Starting MS PowerPoint 2007

To start PowerPoint program, we should follow the following steps:

Step 1: Click on the start button.

Step 2: Move the mouse pointer over All Program Option.

Step 3: Move the mouse pointer over Microsoft office option.

Step 4: Click on the Microsoft PowerPoint 2007.

Then the window appears on the screen.

Use of Themes

A PowerPoint template is a pattern or blueprint of a slide or group of slides that you save as a .pptx file. Templates can contain layouts, theme colors, theme fonts, theme effects, background styles, and even contents. These templates are known as themes. We can follow following steps to choose required themes:

Step 1: Click on Design Tab.

Step 2: Choose available themes or click on more button to search for other different themes.

Step 3: If the color of theme needs to be changed, then click on the drop down arrow.

Step 4: If you like to choose or make different color then click on Create New Theme Colors. Choose the color and click on save button.

Step 5: If the background needs to be changed then click on Background Styles.

Step 6: Choose available backgrounds or click on format background to change the style of pictures and colors. Finally, click on close button.

Changing layout

You can change the layout, according to the information need to be added in your slide. If you choose the layout related to content, then content management will be easier. Following are the steps to change the layout of content:

Step 1: Click on the slide panel of Home Tab.

Step 2: Choose the layout according to the content.

Adding Photo Album

The photo album feature is a new function in PowerPoint 2007. To create a photo album, follow the following steps:

Step 1: Click the Photo Album button on the Insert Tab.

Step 2: Click on New Photo Album.

Step 3: Click on File/Disk to add pictures to the photo album. Then the Photo Album dialog box will appear.

Step 4: Browse your photo to create an album.

Step 5: Select the required photos to keep in the album.

Step 6: Click on the Create button from the dialog box.

Now, your photo album will be created.

Adding Video

video clips can be added to a presentation.

To add a video clip:

Step 1: Click the Insert tab.

Step 2: Click the Movie button from the Media Clips of the Insert Tab.

Adding Audio

Audio clips can also be added to a presentation.

To add an audio clip:

Step 1: Click the Audio button on the Insert Tab.

Step 2: Choose the sound from the file, Sound from Clip Organizer, Play CD Audio Track or Record Sound.

Slide Transitions

Transitions are effects that are seen when you switch from one slide to another. To add slide transitions:

Step 1: Select the slide that you want transitions.

Step 2: Click the animations tab.

Step 3: Choose the appropriate animation or click the Transition dialog box.

Adjusting slide transitions

Add sound by clicking the arrow next to Transition Sound.

Modify the transition speed by clicking the arrow next to Transition Speed.

Applying the transition to all slides

Click the Apply to All button from the Transition to This Slide group of the Animation tab.

Slide Animation

Slide animation effects are predefined special effects that you can add to objects on a slide. To apply an animation effect:

Step 1: Select the object.

Step 2: Click the Custom Animations from the Animation tab.

Animation pane will appear on right side of the screen.

Step 3: Click the Add Effect and choose the appropriate effect from the pane.

Spell Check

To check the spelling throughout a presentation, click the Spelling button in the Proofing group on the Review tab.

Computer Graphics

Photo editors allow us to create and modify bitmap-based graphics and photographic images. This includes tasks such as painting and drawing, color correction, photo enhancement, creating special effects, image conversion and adding a text to graphics. There are different types of photo editing software like Adobe Photoshop, Paint Shop, Photo matrix, Adobe Photoshop Express etc.

Adobe Photoshop

Adobe Photoshop is one of the most popular professional graphic editing software packages. It offers a large number of filters and plug-ins which enable us to add cool effects to images. It has a premium set of image transformation tools. Among other things, the latest Photoshop version comes with enhanced vector graphics and 3D editing capabilities.

Advantages of Photoshop

-Many tools are available for photo editing.

-We can re-size, crop, change color and background along with the brightness of pictures by the use of Photoshop.

-We can save edited photo with the different extension like ".psd", ".jpg" and ".bmp".

How to open Photoshop?

Step 1 Click on start button

Step 2 Click on program

Step 3 Click on Adobe

Step 4 Window of Adobe Photoshop will open

How to create new Canvas?

The drawing canvas is the area in which you will create or modify images. Different steps should be followed to create new canvas:

Step 1 Click on file menu

Step 2 Click on New button

Step 3 Choose the size of canvas according to your need.

Step 4 Click on OK button

Step 5 New canvas is created

Pixel

The full form of the pixel is picture element. With the help of, the individual dots the display screen LCD monitor, CRT monitor projects the image. The amount of pixel in the monitor determines the quality of the image. The more is the number of the pixel the quality of the image improves. The display screen is divided according to length and breadth which is called resolution.

Image Size

The image size is determined by its length and breadth. Normally, image size is measured with the help of pixels but using different graphical programs we can measured in centimeter and inches. The graphical substance can help us to resize and resample the image size.

Use of internet to store images

There are various formats of pictures available on the internet. The picture size matters due to the bandwidth used to upload and download the picture. The size of the picture must be smaller so that we

can easily upload or download the picture. Though we are using the smaller sized picture, the quality of the picture must be maintained. Photoshop provides us with various options to save the files. The original file is saved under '.psd' file format. This format can
later be saved under '.gif', '.jpg', '.png' to upload it on the internet.

Page Layout

The articles or the pictures that means to be printed can be managed under the screen called page layout. Page layout can enhance the article or picture according to the situation and there is various software available for page layout. Some of them are: Indesign, Page plus, Quark Xpress, Page maker, Free hand.

Qualities of page layout

-It manages the print quality of the article or image.
-Page format alignment can easily be maintained.
-As per requirement, we can introduce new column or page number in that article.
-The layout of the image can be resized without decreasing its quality.

Areas covered by Page layout

-It is mostly used in desktop publishing.
-New paper writing, article writing, browser, invitation card uses page layout.
-Designing hoarding board, large scale advertisement and designing flexes requires page layout.

Pre-Press

After the document goes to page layout, the process of pre-press starts. The process of preparing digital documents for printing in the press is called pre-press. The pre-press includes verification of data in the document, correcting language mistakes, managing page number according to printing plates, etc. as its work.

Computer Programming in QBASIC

The full form of QBASIC is Quick Beginners All-purpose Symbolic Instruction Code. QBASIC is the most popular high-level programming language. Various versions of BASIC have been developed by Microsoft Company. This language is quite simple to understand and has been adopted by most of the microcomputers. It is suitable for both mathematical and business problems. It is compatible with MS-DOS environment and it has two basic files QBASIC.EXE and QBASIC.HLP. We can edit, debug and execute the program using these two files.

Advantages of QBASIC

-QBASIC is easy to learn and fun to practice program. It may be called a "People's language".
-It is available almost for every computer from micro-computer to mainframe. Therefore, a program developed in a micro-computer can run on a bigger system with minor modifications.
-It is suitable for mathematical and business application.
-Program development cycle is quick, debugging is simple, and Modification of the program is quite easy.

Elements of QBASIC programming

A)Character Set

QBASIC has the character set consisting of the following elements:

Alphabets: A, B, C,....Z ,Digits: 0, 1, 2.....,9 and Special characters: + - * / ( ) . , $; ,: ,= ,> ,< , ^

B)Constants

A quantity in a computer program which does not change its value during the execution of the program is called a constant. QBASIC allows the following constants:

i)Numeric constant

The numeric constant is one that is formed by a sequence of digits 0, 1, 2,.....9 and may include a decimal point. A numeric constant may be an integer or a real number. 383, +57, 0, -6.2 and 6.15E4 are valid numeric constants. The number 6.15E4, in fact, represent 6.15 * 104. The notation E is used to represent the exponential form. The number after E is the exponent which can be positive or negative. However, its length cannot exceed two digits.

It is also important to keep in mind that:

-QBASIC does not distinguish between an integer and fraction.

-Commands are not allowed in a numeric constant.

-The limit on the number of digits that can be used varies from computer to computer.

ii) **String constant**

A string constant consists of a sequence of characters which must be enclosed by a quotation mark.

C)Variables

The quantity which may change its values during the execution of the program is called the variable.

In QBASIC, variables are also of two types:

i)Numeric variable: Numeric variable can assume numeric value and is represented by an alphabet or an alphabet followed by another alphabet or digit. For example A, C, A2, ABC, A6 etc, represent numeric variables.

ii)String variable: A string variable is represented by an alphabet followed by dollar ($) sign. It should be kept in mind that while constructing the string variable, dollar ($) should be the last character. For example, B1$, NAME$, BOOK1$, etc are valid string variables.

Expression

An expression can be a string, or numeric constant, a variable or a combination of constants, variables with operators which returns a single value.

Operands

Operands are the data or variables on which mathematical, logical and string operations take place.

Operators

Operators are the symbols, which are used in arithmetic operations, logical expressions, and string expressions.

Statements

A statement is a set of instructions written using keywords or commands of QBASIC. Every programming language uses keywords as a statement with certain syntax.

Statements in QBASIC

A statement (for the QBASIC) is a set of instructions written by using keywords or commands of QBASIC. Every programming language uses keywords as a statement with certain syntax. The keywords have specific meaning in the QBASIC programming. The statements are the first stored in the memory and executed only when the RUN command is given.

Different statements used in QBASIC are as follows:

CLS Statement

The CLS statement clears the screen. If you write CLS statement in the middle of the program then you cannot see the outputs generated before execution of CLS because it clears the screen.

Syntax: CLS

LET Statement

LET is an assignment statement. It is used to assign the value to a variable. LET is an optional statement i.e.without using LET statement one can assign the value to a variable. The data type must

match with the variable type otherwise type mismatch error will occur.

Syntax:|LET| variable = value or expression

Example:

```
CLS
INPUT " First Number"; A
INPUT "Second Number"; B
let Sum = A+B
PRINT " The Sum is"; S
END
```

REM Statement

It is a basic declaration statement that allows explanatory remarks to be inserted in a program. The remarks may be useful in a program to explain about different kinds of statements and user defined words. Adding comments in the program allows us to remind about the program and also helps other programmers to understand the logic of the program.

Syntax: REM < Remarks>

Example:

```
CLS
PRINT "Some text."
 REM This text is ignored.
REM This program clears the output screen.
REM and then PRINT " Some text."
```

PRINT Statement

PRINT statement provides output on the screen. It prints the values of the expression on the screen. If the expression list is blank, no characters are printed. The expressions in the list may be numeric or string. In case of number, the negative number is preceded by a minus sign (-) but in positive number it is preceded by a space.

We can use semicolon and comma with a print statement which results differently than a normal PRINT statement.

Syntax: PRINT ["Message"]; expression

Example:

```
CLS
PRINT "Computer is an electronic machine."
PRINT
PRINT "IT's amazing."
PRINT 1000
PRINT " The number is: "; 20
END
```

Output

```
Computer is electronic machine
IT's amazing
1000
The number is: 20
```