UNIT-1

INTRODUCTION

* MULTIMEDIA ▶

Multimedia means that computer information can be represented through audio or video. In addition to text, image, graphics and animation.

Multimedia has popular powerful communication technology in the ever changing world of computer.

Multimedia means communication of different types of media such as text, graphics, natural image.

According to American heritage dictionary, a multimedia system categorised by computer control, integrated production, manipulation, presentation; storage and communication of independent information which is encoded at least to a continious and time independent medium.

* Component of Multimedia ▶

Text
Graphics
Audio
Video
Animation

(i) Text :-

The screen display word that is text. It is the base of most application. The use of different type and style of font, colors are imphasis the specific point.

(ii) Graphics :-

It include word-art, computer generated photographic and capture video frames.

(iii) Audio :-

This include speech audio effects, different types of background sound and music.

(iv) Video :-

Everything that we see on the screen is called video sound, picture moving picture is called video.

(v) Animation :-

It is a continious movement of a series of graphics, picture, images, that is called Animated picture.

* Types Of Multimedia :-

(i) Linear Multimedia
(ii) Non-Linear Multimedia

(i) Linear Multimedia :-

A multimedia project is said to linear if the user can site back and watch just like weithing a movie.

(ii) Non-Linear Multimedia :-

A multimedia project is said to be non-linear if the user are given navigational control and can wonder through the content of the project or multimedia. It is also called "inte multimedia.

* Application in Multimedia :-

Business application for multimedia include presentation, training, marketing, advertisment, product demo, catelog, instant messanging and network communication.

With the help of multimedia technology using the communication technology for global work group as like video voice-mail,

audio-conferencing, cell-phone, personal digital assistant (PDA), Utilizing Blue-tooth and Wi-fi communication technology.

* Multimedia in educational & training

Multimedia is used in educational & training sector by "Yale University" school of medicine, is provides physician with toc case presentation and cardio-logist, radiologist and medical sector.

Multimedia is enjoying wide spread use in training program. flight a learn to manage international terrorism and security through simulation.

Interactive television widely used among computer to join student from different location into a class with one teacher.

In on-line school, the student can enroll take admission all over the world.

(ii) * Multimedia in intertainment :→

Now a days mutimedia games are develop using special technology such as virtual reality to make the games just like experience of real-life.

It's use in the field of television, broad-casting and movie also as for eg:-
Television replay slow motion, chart analysis.

(iii) * Multimedia in Public-place :→

Multimedia is widely used in hotel, Railway station, Shopping-Malls, Library with the help of stand lone terminal which providing information and help to customer and visitor.

Now a days multimedia are also found in the place of work ship live video attached with multimedia sound system and special effect lighting.

(iv) * Virtual reality :→

It is an artificial environment created from the computer hardware and software presented to the user. such as, manner that it appears and feel like a real environment. To enter in a virtual world a user wear special glucbes, ear-phone, goggles all of which receive their input from the

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computer system.

In virtual reality of geometric and point plotted in three dimensional (3-D) states.

* **Building-block of Multimedia :-►**

A type face is a family of graphic character that usually include many type size and style. font is a collection of character of single size and style beginning to particular type face family. Critical font style are Bold face and Italic, underline and outline of character is additional attributes with the help of multimedia software. Type size are usually expressed in point one point is 0.0138 inch or about 1/72 of an inch.

* **Hypertext :-►**

With the help of user can easily jump from one web page to another by clicking the pointing device.

* **Web-pages :-►**

Collection and link of pages are called Home-page. Hypertext work like a bridge to connect from another page. Text file are usually store character by character and each character required 1-byte space in the memory. Text can be made using various text editing and processing tools such as M.S. word, Page-maker, etc where text file can be developed and later imported into multimedia tools.

* **Graphics and Image :-►**

'Graphics' is described as the pictorial representation of data form by the primeptive object such as line, polygone, and circle, curve and arc. In graphics line can be presented by mathmatical equation, whose can be stored as a set of binary code. As for example,
CAD (computer Aided design) is a software
CAM (computer aided manufacturing)

* **Image :-►**

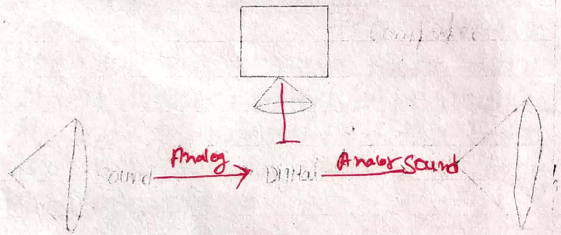
Image are the steal picture that are represented as Bitmap. Bitmap is a image consists of 2-Dimensional square □ which is called "Pixel" or "Dot" on the screen. The size and quality of image is depend upon the pixel density and number of color it use.

* Pixel :- ▶

Pixel is the smallest area on dot of screen. The pixel depends 2- Dimensional shape.

* Audio :- ▶

It is the viberation of air molecules in the atmosphere that can be detected the ear. when the audio converted into digital from to produce digital audio. In order to use it in multimedia and the digital audio system again converted into analog from which can be heared on the speaker these two way transmission of sound is called "Analog to Digital" and Digital to Analog.



common type of sound file are MIDI (Musical Instrument Digital Interface), WAV, it is used to store wave form audio data.

* Video :- ▶

Video is the moving picture on screen. It is used for primitive television show film and adversiting. There are three main type of video file are used in multimedia i.e Quick-time, avi, mpeg.

* Quick-time :- ▶

Quick-time and mpeg are most commonly used format file. mpeg is extremely high quality output. It delivers higher image resolution and picture quality with multi resolution and multi channel audio feature.

* Animation :- ▶

Animation is the process of sequencing still image in a rapid session to give the effect of live motion.

* WAV (Wave form)

AVI :-

AVI technology on you create, edit, present motion, video segment usually in small window in present.

* MPEG (Motion Picture Expert Group)

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* Animation :- ▸

An animation has sta
a certain number of image and frame in
very essential position for professiona
animation one need to have at lea
st 30 frame per second. Animation can be
useful because, it provide :-

(i) Continuty in transition :- ▸

When so
some thing has two or more state then
change between state will be much ea
ier for user to understand. if the transi
ssion are animated instead of being
simultaneously.

(ii) Illustrating change over time :- ▸

Si
nce an animation is a time display, it prov
de a one-to-one mapping to phenomen
the change over time.

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(iii) Attracting attention :- ▸

Animation has the ability to control a user visual aware-ness and this advantage can be change in the interface.

* Hardware requirements for multimedia computer :- ▸

(1) C.P.U :- ▸

CPU is required for multimedia computer must have advance chip, such as power PC, Intel microprocessor, core-Dual, centrino, centrino-2 with the latest version of operating system and silicon graphic have their a set of powerfull processor for multimedia. CPU of multimedia computer should be math co-processor attached otherwise the response time of multime-dia will be poor. with the help of co-processor chip greately reduce the load of CPU. The powerfull co-processor chip added for multimedia supporting the graphic is called "graphic accelerator".

(2) Memory :- ▸

To develop the multimedia, memory must have powerful as a like RAM 1GB and attached additional memory

as a like cache memory.

Secondary storage device : →

In multi media development, there are different types of secondary storage devices are used as a like Harddisk, floppy disk, CD, DVD.

Input Device : →

Input device are use in multimedia development as a like keyboard, mouse, touch screen, bluetooth Infrared, Wi-fi, digital camera.

Output Device : →

Output device is speaker monitor (CRT, TFT, LCD), multimedia projector printer are output device which is used for multimedia development.

Connection Device : →

There are several types of communication device which used in multimedia development for data communication. As for example – Modem ISDN, DSL (Digital subscriber line), DVD (Digital versatile disk). DVD is a new medium capable of GB storage capacity but also full motion, video and ~~audio~~ high quality audio in sound. It is used for multimedia development. The main advantage of PC user is the capacity of 4.7 GB to 17 GB.

Sound Card : →

If you want to better quality and capability for sound output or input are required then their must be a device which can be added to the basic machine. This device is known as "Sound Card". It is added into the basic machine by inserting it in free slot. It is used for better quality of sound from the Loud-speaker.

Monitor : →

Our multimedia PC should be required SVGA (Super Video Graphics Array) monitor, SVGA support the better resolution for better quality of graphic and picture.

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* Software tools used in Multimedia :-

The software in our multimedia book it and our skill at using it determine what kind of multimedia work we can do how fine and fancy making good multimedia means picking a successful road through the software.

following are the common basic software tools that are used in multimedia system :-

(i) Text editing and word-processing tools

A word processor is usually the first software tools computer usages learn from letter, invoice to project contents The better our keyboard or our typing skill. The easier and more efficient will be our multimedia day-to-day life

Word processor to complex building and office tool that might include spread sheet, database, e-mail, web-browser and presentation application.

(ii) OCR (Optical Character Reader) :-

With the OCR software a flate-hand-scanner in our computer, we can save many our of printed word and get the job done faster and more accurately than a roomful.

The OCR software terms bitmap character into electronically recognizable ASCII text.

A scanner typically change according to content text or graphics by examine the textual and density of area of the bitmap and by detecting edge.

(iii) Painting and Drawing tools :-

Both tool as well as 3-D model are perhaps the most important item in our tool kit because of all the multimedia element, the graphical impact of our project will likely have the greatest influence on the end-user.

Painting software such as photoshop, fire-work and painter is dedicated to producing craft bitmap image.

Drawing software such as corel-draw, free-hand, illustrator designer and easier to dedicated producing vector based line art easily printed to paper at high resolution.

(iv) 3-D modeling and animation tools :-

These are several 3-D modeling software are used to produce 3-D images that is auto desk, strata 3-D and Avid's softw image, alias wave front etc. Each 3D image from a few hours to complete depending upon the complexity of draw

(v) Image editing tool :→

These are specialised and powerful tools of inha- ncing and detouching existing bitmap image. These application also provide many of the features and tools of pointing and drawing programs. can be used to create image from scratch as well as image from scanner, digital camera, clip-art file, original art-work file created with a pointing or drawing package.

(vi) Sound Editing tool :→

Sound Editing too for both digital and MIDI sound let we see music as well as hear. By drawing a representation of sound in fine increments whether a score or a wave form, we can cut, copy, paste and

Otherwise edit segment of it. Real-one player, jet audio, winamp, D.V.D player are also supported this type of task. you can easily perform the work/task of sound in this software.

(vii) Animation, Video and Digital movie :→

Animation and digital video movie are sequence of bitmap graphics frame rapidely playback But animation can also be made within the authority system by rapidely changing the location of object or sprite to generate and appearance of motion.

V-VI* Authoring tools with respect to Multimedia

Multimedia authoring tools provide the im- portant frame work for organizing and editing the element of multimedia project including sound, graphics, animation and video clip. Authoring tools are used for designing interface for presenting the project on screen and for assembling multimedia element into a single product. Authoring software provides an integrated enviornment for binding together the content and func- tion of the project. creating, editing and import specific type of data, assemble

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raw data into a play back sequence provide to user input with multi- au thoring software we can make,

(i) Video production (vi) Kiosks Applicati
(ii) Animation (vii) Demo disk and Guiding too
(iii) Games (viii) Interactive training
(iv) Interactive Web- site (ix) Simulation pac
(v) Presentation and technical vis

There are three type of Authoring tools :→

(1) Card or page- based tools
(2) Icon or object based even driven tool
(3) Time based tools

(1) Card or page- based tools :→

In th authoring system elements are organize as page up a book or a stack of a car Thousands of pages or cards may be available in the book or stack. These tools are best use when the bulk o our contain, consists of elements tha can be view individually like a the pa of a book or card in a card- file. Th authoring system link these pages or cards in to organize sequence, we can jump on command to any pag we wish in the structure navigation pattern.

(2) Icon or object based even driven tools :→

In their authoring system multimedia elements and interaction use as object in a structural frame- work or process. Icon or object based event driven tools simplify the organization of our project and typically display flow diagram of activities along branching path. In complete navigational structure this charting is particularly useful during development.

(3) Time based tools :→

In these system elements can events are organize along a time line with resolution as higher or higher than 1/30 second. Time based tools are best to use when we have a message with a begining and end. sequencly organised graphic format are play- back at a speed that we can set other element. such as audio events are trigger data given time or location in the sequence of events. The more powerful time based tools program jump to any location in a sequence there by adding navigation and interactive control.

* Authoring System :-

An authoring system is a set of software tools for creating multimedia application in an authoring environment. A person who create application for multimedia, integration is called "Author".

* Features of authoring Software :-

Authoring software is the main production tools for multimedia. An authoring system is a program which has a preprogram element for development of interactive multimedia titles. Authoring system very widely in orientation-capabilities, learning capabilities of the users.

The main features of authoring software are :—

(i) Integrated multimedia element

(ii) Script language programming

(iii) Dynamic linking library (DLL)

(iv) Supportive CD-ROM

(i) Integrated multimedia element :-

With the help of authoring software, we can add on board and peripheral devices to play multimedia. Authoring programs are used in education, training, business application.

(ii) Script language programming :-

Authoring software provide ability to write script for software to built features that are not supported by the software itself.

Script language program create multimedia presentation from a series of programming style command, link together in a word-processing type script.

With the help of authoring software we can write the script language which is closest in form to traditional programming and specify multimedia elements sequencing.

(iii) Dynamic linking library (DLL) :-

Dynamic linking library for extending features which provides the facility to add on board and peripheral devices include, specilized DLL upon installation.

specilized programming language user create dll for inhance functio

iv) Supporting CD-ROM :-

Storing array video, Audio and picture on hardware often not practicle to get the quality and speed as might be desired. Auth oring software allow full control from CD-Drives to integrated Audio, video and computer file.

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UNIT-2

MULTIMEDIA SYSTM

* File Format :-

The component of multimedia such as text, image, audio and video are stored digitially in the computer memory with different file format.

A Bitmap image is consists of 2-D square, which are called "Pixel" or "Dot". The size and quality of an image is depend on the pixe density and number of color.

As for example- A standard V.G.A screen use 640 x 480 pixel a total of = 307200 pixel to display image.

If the image is in Black & white (B/w) then only one digital bit is required to store this information each pixel or dot of B/W image is represented by either "0" for black or "1" for white.

To store a B/W image we require (640x480)/8 = 38100 bytes, i 37.5 KB memory space.

A standard V.G.A which use 16-color need the information, so the pixel can be coded in single byte. It is required to store a single image with 16-colo