What is Multimedia?

Multimedia can have a many definitions these include:

Multimedia means that computer information can be represented through audio, video, and animation in addition to traditional media (i.e., text, graphics drawings, images).

A good general definition is:

Multimedia is the field concerned with the computer-controlled integration of text, graphics, drawings, still and moving images (Video), animation, audio, and any other media where every type of information can be represented, stored, transmitted and processed digitally.

A Multimedia Application is an Application which uses a collection of multiple media sources e.g. text, graphics, images, sound/audio, animation and/or video.

Hypermedia can be considered as one of the multimedia applications.

What is CD-ROM and the Multimedia Highway?

Multimedia require large amount t of digital memory when stores in an end users library, or large amounts of bandwidth when distributed over wires, glass Fiber, or airwaves on network. The greater the bandwidth, the bigger the "pipeline", so more content can be delivered to end users quickly.

CD-ROM, DVD and Multimedia:

CD-ROM (compact disc read-only memory, has become the most cost-effective distribution medium for multimedia projects: a CD-ROM disc can be mass-produced for pennies and can contain up to 80 minutes of full-screen video or sound. Or it can come rain unique mixes of images, sound, text, video and animations controlled by an authoring system to provide ultimates user interaction.

Discs can be stamped out of poly-carbonate plastic as fast as cookies on a baker's production line and just as cheaply. Virtually all personal computers sold today include a least a CD-ROM player, and the software that drives these computers is commonly available on a CD-ROM disc applications that required inserting as many as 16 or more floppy disk one after another are now installed from a CD-ROM without muss or fuss.

Many systems now come with a DVD-ROM player, Multilayered Digital Versatile Disk (DVD) technology increases the capacity and multimedia capability or current optical technology to 18 GB. CD and DVD burners are used for reading discs and for making them, too, in audio, video, and data formats. DVD authoring and integration software allows the creation of interactive front-end menus for films and games.

In the very long term, however, CD-ROM and DVD discs are but interim memory technologies that will be replaced by new devices that do not require moving parts. As the data highway described below becomes more and more pervasive and users become better "connected", copper wire, glass Fiber, and radio/cellular technologies may prevail as the most common delivery means for interactive multimedia files, served across the broadband internet or from dedicated computer farms and storage facilities.

The Multimedia Highway:

Now, that telecommunications networks are global, and when information provides and content owners determines the worth of theirs products and how to charge money for them, information elements will ultimately link up online's as distributed resources on a data highway (actually more like a toll road). Where you will pay to acquire and use multimedia-based information.

Curiously, the actual glass Fiber cables that makes up much of the physical backbone of the data highway are, in many cases. Owned by railroad and pipelines companies who simply buried the cables on existing rights of way where no special permits and environmental reports are necessary. One railroad in the United States invested more than a million dollars in a special cable laying trenching car; in the United Kingdom, there is talk of placing a fiber-optic   cables backbone along the decaying 19th century canal and barge system. Bandwidth on these lines is leased to other, so competing retailers such as AT&T, MCI, and Sprint may even share the same cable. Full-text content from books and magazines is accessible by modem and electronic link; features movies are played at home; real-time new reports from anywhere on earth are available; lectures from participating universities are monitored for education credits; street maps of any city are view-able with recommendations for restaurants, in any language-and online travelogues include testimonials and video tracks. This is not science fiction; it is happing now. For each of these interfaces or gateways to information is a Multimedia projects just waiting to be developed.

Computer Animation

Generally, Computer animation is a visual digital display technology that processes the moving images on screen. In simple words, it can be put or defined as the art or power of giving life, energy and emotions etc. to any non-living or inanimate object via computers. It can be presented in form of any video or movie. Computer animation has the ability to make any dead image alive. The key/main concept behind computer animation is to play the defined images at a faster rate to fool the viewer so that the viewer should interpret those images as a continuous motion of images.

Computer Animation is a sub-part or say small part of computer graphics and animation. Nowadays, animation can be seen in many area around us. It is used in a lot of movies, films and games, education, e-commerce, computer art, training etc. It is a big part of entertainment area as most of the sets and background is all build up through VFX and animation.

History of Computer Animation:

YEAR   DEVELOPMENTS

1906   "Humorous phase of funny faces" – 1st animated movie/film.

1909   "Gertie the trained Dinosaur" – Cartoon was developed.

1913   Felix the cat" and "Old doc Yak" – Cartoon series was developed.

1923   Cartoon movie Alice's Wonderland was created.

1926   "Prince Achmed" – 1st full length animated movie.

1928   "Mickey Mouse" – First cartoon with sound (developed by Walt Disney).

1970   "Scanimate" – 1st analog video synthesizer.

1977   "Star War" – First popular movie using animation.

1993   "Jurassic Park", movie using VFX and animation.

1995   "Disney Pixar's Toy Story" – 1st computer animation featuring film.

2003   Movies like: "The Matrix Reloaded" and "The Matrix Revolutions", used virtual cinematography.

2006   Video Game named "Play Station 3" was developed.

Applications of Computer Animation:

Methods/Techniques:

Frame by Frame (Traditional Method):

Earlier, in traditional method, animation was done by hands because of the absence of the computer-aided drawing facilities. And, these traditional method required a lot of effort for even making a short video because of the fact that every second of animation requires 24 frames to process.

Procedural:

In Procedural method, set of rules are used to animate the objects. Animator defines or specify the initial rules and procedure to process and later runs simulations.Many of the times rules or procedure are based on real world.s physical rule which are shown by mathematical equations.

Behavioral:

According to this method/technique, to a certain extent the character or object specifies/determines it's own actions which helps / allows the character to improve later, and in turn, it frees the animator in determining each and every details of the character's motion.

Key Framing:

A key frame in computer animation is a frame where we define changes in an animation. According to key framing, a storyboard requirement is must as the animator/artist draws the major frames (frames in which major/important changes can be made later) of animation from it. In key framing, character's or object's key position are the must and need to be defined by the animator, because the missing frames are filled in those key position via computer automatically.

Motion Capture:

This method of animation uses the live action/motion footage of a living human character which is recorded to the computer via video cameras and markers and later, that action or motion is used/applied to animate the character which gives the real feel to the viewers as if the real human character has been animated. Motion Capture is quite famous among the animators because of the fact that the human action or motion can be captured with relative ease.

Dynamics:

In this method, simulations are used in order to produce a quite different sequence while maintaining the physical reality. Physics's laws are used in simulations to create the motion of pictures/characters. High level of interactivity can be achieved in this method, via the use of real-time simulations, where a real person performs the action or motions of a simulated character.

Animation Techniques and Styles

Types Of Animation

There are 20 different types of animation techniques and styles. Animation is the process of creating the illusion of motion and shape change by means of the rapid display of a sequence of static images that minimally differ from each other. Animation is all around us, be it your favourite tv commercials, music, movies or even videos you can see the stop motion animation type. Movement creation techniques incorporate the conventional traditional animation and stop motion animation techniques of two and three-dimensional figures, for example, paper set patterns, puppets and clay figures. Keeping Stop motion as the base of all animation, different styles of animation techniques can be used to create the animated sequences. In this post we included 20 different types of animaiton and animtion styles.

Types of Animation Techniques

Traditional animation

2D animation

3D animation

Typography Animation

Clay animation

Sand Animation

Flip book Animation

Stop-motion animation, etc..see below

1: Traditional animation or Classical 2D animation :

Traditional animation involved animators drawing by hand for each and every frame. If you love the feel of pencils on a paper, then the traditional approach is very fascinating. Traditional animation is creating the drawings one by one on the frame. 2D animation involves creating numerous drawings then feeding into a plastic cells, hand painting them and create the animated sequence on a painted background image.

Traditional Aniamtion Movies : Snow White and the Seven Dwarfs, Peter Pan, and Sleeping Beauty, Aladdin

Computer animation - 2D, 3D: The famous Mickey Mouse animation was created using the 2d animation technique.The first 2D animation was called Fantasmagorie, it's a short cartoon made by Emile Cohl. It's shot entirely in black and white, the cartoon is all about a simple stick man in live action. The cartoon is 75 seconds long and it took about 700 different drawings to create. This historic animation was released in 1908. During the 1960s many popular cartoons like the Jetsons and the Flintstones were created using 2d animation.

2 : Digital 2D animation

Creating animations in the 2 dimensional space with the help of digital technologies is known as digital 2d animation. You don't need to create digital models, you just need to draw the frames. Create 100s of drawing and animating them to show some kind of movement is technically known as digital 2d animation. Using Adobe flash, animators can limit the number of drawings used, which makes them easier to create digital 2d animation. Small variations like changing the color or frame rate can be changed almost instantly, thus making it easier for the animators to work on.
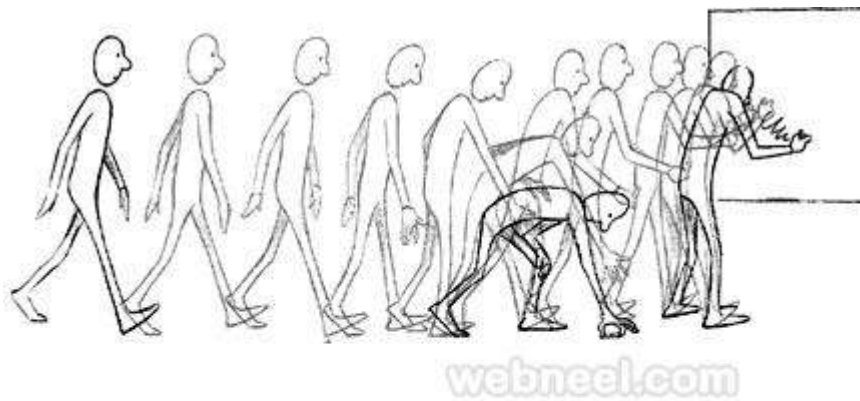
3: Digital 3D animation

If you are interested in making the unreal characters into a realistic one, then it's Digital 3d animation. Digital 3d animation characters are much faster to create and they are quite popular in the movie making industry. Using a computer software 3d animated images are used to create many short films, full length movies and even tv commercials and a career in digital 3d animation is highly rewarding. Comparing to 2D animation and the traditional approach, 3d animation models are highly realistic.

4 : Stop-motion animation

Have you ever wondered if a piece of stone can walk or talk, well anything is possible in animation? Using frame by frame animation, physical static objects are moved around and during the post production it is shown in a fluid movement. Stop motion animation has been around ever since the evolution of puppets. There were many movies created using the stop motion method, some of the finest examples are "Fun in a bakery shop" created in 1902.Edwin Porter directed "The Teddy Bears," which was

one of the earliest stop-motion animation films. The movie is a short sequence of playing teddy bears, just over a minute in length, which took over 50 hours to animate.

5: Mechanical Animation

Instead of robotics, machines can be animated by using the mechanical animation technique. Instead of creating the original machine, creating these mechanical animations, allows the animator to understand how the machine works. Explaining the functionality of these machines is quite easy through this kind of animation technique.

6 : Audio-Animatronics and Autonomatronics

Walt disneyimagineering created the trademark audio animatronics which is fitted in its disney theme parks. Otto is a robot which can easily sense a person in a room, converse with them and can also tell if they are happy. Autonomatronics technology is different from Audio-Animatronics technology. Audio-Animatronics technology repeats a pre-programmed show over and over again. Autonomatronics technology is driven by sophisticated cameras and sensors giving Otto the ability to make choices about what to say and do.

7: Chuckimation

Chuckimation is one of the popular animation techniques created by "Action League Now!" creators. It's a combination of stop frame animation and live shots, where characters are dropped into a particular frame. It has some similarities to the famous puppet shows.

8 : Puppetry Animation

Puppetry animation is created using the life like puppets instead of objects. The film 'The Humpty Dumpty Circus' (1908) created by J. Stuart Blackton and Albert smith receives credit as the first stop-motion animation film that features puppets. Nowadays puppet animation is most commonly used in children's cartoons and films. An example of puppet animation used in cinema is in the film King Kong (1933).The Nightmare before Christmas (1993) is an American stop motion musical fantasy horror film directed by Henry Selick. It used 227 puppets to represent the characters in the film and also 400 heads were used to allow the expression for every possible emotion.

9: Clay animation or Claymation

If you like to play with clay then this is of the best forms of stop motion created in Claymation. In this Claymation, pieces of clay are moulded to create characters and based on the imagination of the animator, a story is unfolded. There are oil based and water based clays available. Sometimes the clay is moulded into free forms or filled up in a wire like structure called armature. The animated characters are kept in a set and with only short movements, the whole scene is film.

10. Zoetrope Animation

The zoetrope is one of several animation toys which were invented in the 19th century, as people experimented with ways to make moving pictures. It was invented in 1834 by William George Horner, and is one of the early forms of animations. Some still images are drawn on a drum and when turned in a circular way, you have an illusion of movement. The visual effect created by a zoetrope is still used today to create animated GIFs.

11. Cut-out animation

Cut – Out animation is probably one of the oldest forms of stop motion animations in the history of animation. The first cut-out animation was created by LotteReiniger in 1926 and it was named "The Adventures of Prince Achmed". She used quite detailed paper silhouettes to convey a beautiful story. In this method paper cut outs are moved under the camera lens to say a story. Ever since the evolution of computers, it was much easier to introduce the computerised cut images in a queue.

25 CREATIVE CUT OUT ANIMATIONS

12. Sand Animation

This technique is messy as you will have to get your hands dirty with sand. A lit glass table is used as a canvas and the animator creates animation by moving the sand in certain directions and yes you guessed it right, animators have to constantly erase their creations to create another scene. The whole process is photographed and then during post production, they are merged to show the sand animation. Even though it takes hours to complete the animation, the end creation will truly blow your mind away.

SAND ANIMATION
20 Award winning Sand Art work videos

13. Typography Animation

Typography is all about font faces and letters and animation is anything that is in motion, well a combination of text in motion is known as typography animation. Typography animation is widely used during the titles part of a movie. If you have a love for the font faces and types, then one must watch the stop motion typhography animation created by Barrett Forest called the "The Atlantic". It's so easy to create new kinds of font face by using softwares such as Fontlab.

14. Paint-on-glass animation

In this technique, slow drying paints are used on a glass canvas, which allows the animator to manipulate the art and photograph them simultaneously. Sometimes turpentine is used in the paints, which makes it easier for the animator to work on the paintings. It's tough and laborious task as you have to paint on glass, take photographs and then create another scene which is then blended together in the post production, to give an animated version of the painting.

15. Drawn-on-film animation

Drawn-on-film animation has been around from 1916, but most of the animations are lost from that period. This technique involves scratching, etching directly on an exposed film reel or alternatively can also be created in a dark room introducing the light in variations to create shadows which are permanently embedded on the film. Sometimes animators can just stick the black film reel on to a workboard and punch holes into them or stick just about anything on the film reel. This animation was one of the earliest forms of animation technique and probably one of the cheapest, since you just need a role of film, etching tools and a projector.

16. Experimental animation

Experimental animation is the art of combining two or more illogical paintings or art to create an animated scene. Different kinds of animation paintings are introduced at odd points which are totally irrelevant to each other. So the randomly introduced paintings create a different frame altogether in the animation process. Some animators have used a magnifying glass on paintings and multiple frames are captured to create an animation.

17. Erasure animation

Erasure animation uses 2d animation for motion graphics. Many popular charcoal erasure films have been created using this technique and one famous animator is William Kentridge. Photography and animation has to be done at every change to create a fluid motion in the animation film.

18. Pinscreen animation

A screen being pricked by thousands of headless pins is used to create pin screen animation. Alexandre Alexeieff and Claire Parker invented the pin screen animation technique in the 1930s. The two people used the pin screen to create Night on Bald Mountain. Once the pins are pricked, the screen is lit on one side, which casts shadows, based on the depth of the prick, the deeper the shadow. Night was the first animated film to use their pin screen, a 3×4 foot rectangle containing around 240,000 pins that move laterally in order to create different shadow lengths.

19. Flip book Animation

Even before the time of computers, animation was very much in practice. Artists used to carry a small flip book or flick book and draw a series of images, with little variation to the pictures, so when the book is flicked rapidly, you can see the series of images in a fluid motion, trying to show a scene. Flipbook animation is one of the oldest but fascinating kind of animation.

Computer graphics functions

GRAPHICS FUNCTIONS

Putpixel

Purpose:-Putpixel function is to draw the pixel on the screen.   Pixel is small dot on the screen.

Syntax:-putpixel(x co-orinate, y co-ordinate,COLOR);

Example: – putpixel(100,100,BLUE);

SetbkColor

Purpose:-Setbkcolor function is used to set background color of the screen.

Syntax:-setbkcolor(COLOR);

Example:-setbkcolor(RED);

Setlinestyle

Purpose:-setlinestyle function is used to set the current line style, width and pattern

Syntax:-setlinestyle(linestyle, pattern, thickness);

Example:-setlinestyle(SOLID_LINE,1,2);

Setcolor

Purpose:-setcolor is to set color of the objects which is to be drawn after this setcolor line.

Syntax:-setcolor(COLOR);

Example:-setcolor(RED);

Rectange:-

Purpose:- Rectangle function is used to draw the rectangle on the screen.   X1,y1 are the lower left co-ordinates of the rectangle and the x2,y2 are the upper right co-ordinates of the rectangle.

Syntax:– rectangle(x1,,y1,x2,y2);

Example:– rectangle(100,100,200,200);

Textheight

Purpose:-textheight returns the height of a string in pixels.

Syntax:-textheight(STRING);

Example:-i=textheight("HELLO");

Textwidth

Purpose:-textwidth returns the width of a string in pixels

Syntax:-textwidth(STRING);

Example:-i=textwidth("HELLO");

Getx

Purpose:-getx returns the current position's of x o-ordinate

Syntax:-getx();

Example:-x=getx();

Gety

Purpose:-gety returns the current position's of y co-ordinate

Syntax:-gety();

Example:-y=gety();

Getmaxx

Purpose:-getmaxxreturns the maximum x co-ordinate on the screen

Syntax:-getmaxx();

Example:-maxx=getmaxx();

Getmaxy

Purpose:-getmaxy returns the maximum y co-ordinate on the screen

Syntax:-getmaxy();

Example:-maxy=getmaxy();

Line

Purpose:-Line function is used to draw the line on the screen.

Syntax: line(x1,y1,x2,y2);

Example:-line(100,100,200,100);

Closegraph

Purpose:-closegraph function shut down the graphic system

Syntax:-closegraph();

Example:-closegraph();

Moveto

Purpose:-moveto function moves current cursor position on the screen

Syntax:-moveto(x co-ordinate, y co-ordinate);

Example:-moveto(getmaxx/2, getmaxy/2);

Settextstyle

Purpose:-settextstyle sets the current text characteristics like font, direction and size

Syntax:-settextstyle(font, direction size);

Example:-settextstyle(1,1,10);

Font   1   DEFAULT

2		TRIPLEX

3	SMALL

4	SANS SERIF

5	GOTHIC

Direction	0	HORIZ_DIR

VERT_DIR

Size	0	SMALL

10	large

Circle

Purpose: Circle function is used to draw the circle on the screen

Syntax:– circle(x,y,radius);

Example:circle(100,100,50);

Cleardevice

Purpose: cleardevice function is used to clear the contents or graphic images on the screen in graphics mode.

Syntax:cleardevice();

Example:cleardevice();

Outtextxy

Purpose: outtextxy function is used to print the text on the screen in graphics mode.

Syntax:outtext(x,y,text);

Example:-outtextxy(100,100,"HELLO");

Sector

Purpose:sector function draws and fills an elliptical pie slice.

Syntax:sector(x, y, starting angle, ending angle, xradius, yradius);

Example:sector(100,100,45 135 100 50);

Arc

Purpose:arc draws the arc on the screen, arc is   a part of the circle

Syntax:arc(x, y, starting angle, ending angle, radius);

Example:arc(100,100,90,180,50);

Setfillstyle

Purpose: setfillstyle is used to set the color and style to be filled in the object using the flood fill method.

Syntax:stefillstyle(STYLE, COLOR);

Example:setfillstyle(1,RED)

Floodfill

Purpose:floodfill function is used to fill the color in the object, object may be circle, rectangle or any other closed image.

Syntax:floodfill(x,y,boundary color);

Example:floodfill(100,100,BLUE);

Ellipse

Purpose:ellipse function is used to draw the ellipse on the screen.

Syntax:ellipse(x, y, starting angle, ending angle, xradius, yradius);

Example:ellipse(100,100,90,200,20,20);

Outtext

Purpose:outtext function is used to display the text on the screen, using this function text is display in the current position.

Syntax:outtext(STRING);

Example:outtex("HELLO");

Getcolor

Purpose:getcolor returns the current drawing color.

Syntax:getcolor();

Example:intclr = getcolor();

Getpixel

Purpose:getpixel gets the color of a specified pixel.

Syntax:getpixel(x,y);

Example: color=getpixel(100,100);

Use of Multimedia in Different Fields

In this present epoch of communication, everything needs to be advertised, whether it is news or any piece of information. With the opening of more and more TV channels, ad agencies, event management companies, the requirement of media has really increased.

Multimedia can be anything and everything which you watch and listen in a form of text, photograph, audio, video and much more. In most of the industries, whether hospitality, aviation, banking, insurance, science and technology etc, it is being used in almost every field, either for publishing something or for some other purpose.

Another identical term used for multimedia is 'rich media'. Creating such kind of content is a challenge, but with modern means of technology and the expertise of software valuable resources can be created. The multimedia software that are available in market helps in developing content that is creative, stimulating and eye-catching.

Importance of Multimedia in Various Fields

Multimedia in Various Fields

TV Series & Movies   Commercials & Ads   Video Games   Educat

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 India 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
  - o Display Ads
  - o Remarketing
  - o Video
  - o Social
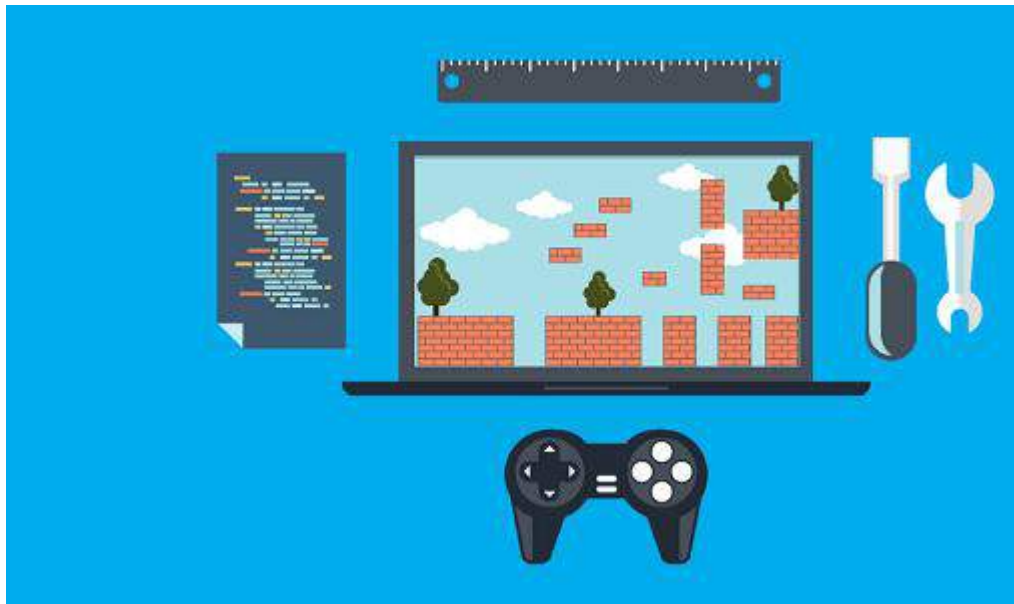 - o Search

- Mobile advertising

2. Education
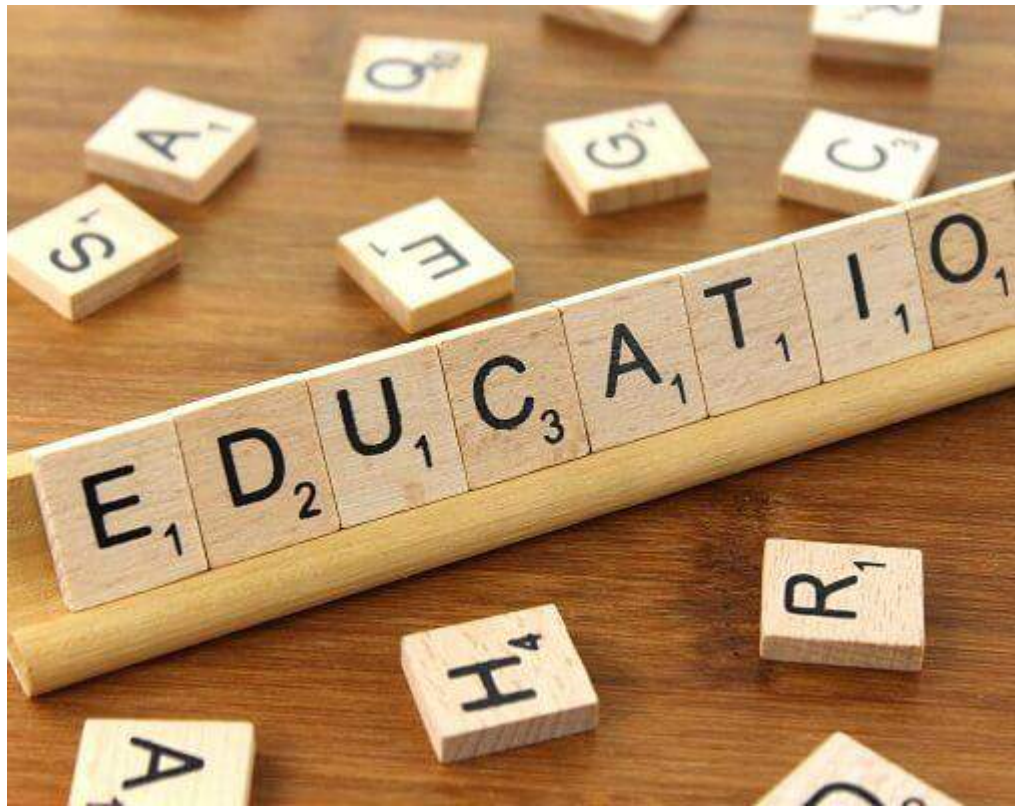
In the area of education too, the multimedia has a great importance. Talking particularly about the schools, their usage has a significant role to play for children also. It is broadly used in the field of education and training. We used audio for imparting education even in traditional method, where 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
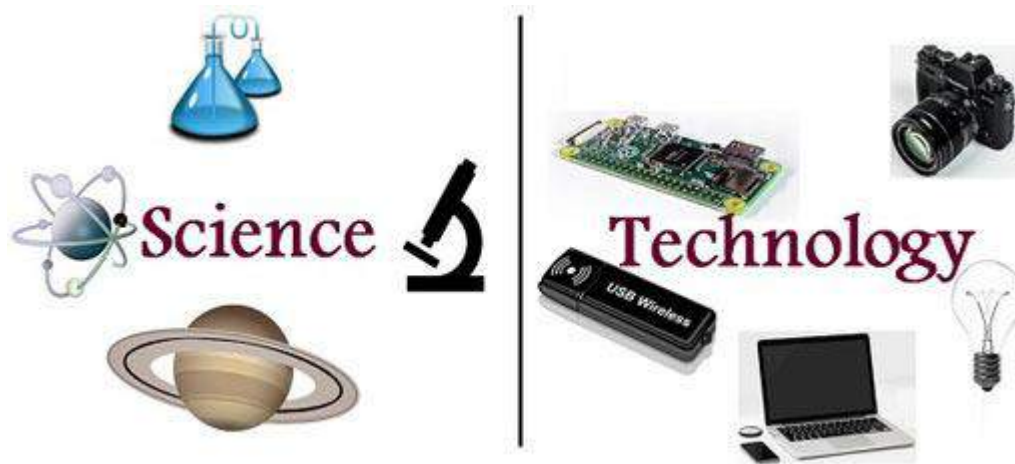
Multimedia had a wide application in the field of science and technology. It is capable of transferring audio, sending message and formatted multimedia documents. At the same time the it also helps in live interaction through audio messages and it is only possible with the hypermedia. It reduces the 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.

INTRODUCTION TO MAKING MULTIMEDIA

Topic

Stages of a project

What is needed

Stages of a project

Planning and Costing

Outlining messages and objectives

Plan skill, elements

Estimate time

Prepare budget

Designing and producing

Perform each of the planned tasks to create a finished product.

Testing

Test – see it meets the objective – work properly

Delivering

Package and deliver the project to the end user.

What is needed

Time and money

For resources such as disks and memory.

Help from other people – team effort

Hardware

Software

Creativity

Organization - an organized outline and a plan needed before starting the project

Computers

There are other types of computer used in multimedia developed particularly for graphics processing, video capture, and editing and 3D modelling. For example, the SGI Silicon

Graphics Octane2 computer is specifically designed for visualisation, 3D modelling and other graphical applications and is based on SGI's own R14000A processor and a version of the UNIX operating system. 300 SGI Octane2 computers were used to create the 3D animated characters for Disney and Pixar's Toy Story 2 film.

Hard Disk

It is important to have a large hard disk drive to undertake some tasks like video and sound editing.

Minimum of 60Gbyte of capacity is enough for most standard tasks.

Currently, hard disk drives have capacities up to 120Gbytes and data transfer rates of 160Mbits per second.

There two standard types of hard drive used in desktop computers –

Enhanced Integrated Drive Electronics (EIDE) or Ultra ATA based drives

Small Computer System Interface (SCSI) based drives.

CD & DVD

CD-ROM was the standard medium for delivering multimedia

CD-R drives, sometimes called WORM (write once read many) drives, are used for backup purposes and also for creating master copies of multimedia applications.

For batch production purposes CD-Copiers are used for copying and labelling 50 CDs at once.

CD-ROM drives store up to 660Mbyte at access speeds of up to 7200Kbits per second.

Currently CD-RW drives work at lower access speeds but are becoming standard since they are re-recordable and are making the 3.5'' floppy drive redundant.

Input Devices

Keyboards

The design of the keyboards has improved with cordless and ergonomically contoured keyboards.

Pointing devices

There are a range of pointing devices used in multimedia development and delivery.

Mouse - cordless and is based on an optical sensor rather than a rolling ball.

Multimedia developers who are engaged in image or video editing may wish to use more sophisticated pointing devices like a trackerball or tablet, which gives developers finer control over the position of the pointer without moving their hands.

Digitizing Tablet

¢The other pointing device used by developers is the digitizing tablet

¢Either a special pen or a mouse is used as the pointing device allowing developers to map the dimensions of the tablet to the dimensions of the screen so that extreme points of the tablet match the extreme points of the screen.

¢Multimedia developers can place pictures onto the digitizing tablet and 'trace' them if they need to.

Sound recording equipment

¢ The essential pieces of hardware for recording sound are

Microphones or musical instruments for creating the sound source

Portable recording equipment like a Digital Audio Tape (DAT) recorder for use outside a studio

a Multitrack mixing console for editing and mixing various sources of sound and another storage device like a DAT recorder.

DAT recorders enable sound to be recorded at sampling rates up to 96KHz and 16 bits per sample.

The medium for the recording, editing and capture of music is generally undertaken using the MIDI data format and today most electronic instruments and equipment associated with music support it. Once the sound has been recorded it must be input into a computer for further editing and integration into a multimedia application.

Video recording equipment

¢ Basic video recording equipment includes either an analogue or digital video camera and a video capture card installed in a desktop computer.

¢ Video capture cards are different to graphic display cards which are not capable of video capture. Although many video experts still prefer using analogue cameras, digital

¢ Video cameras are becoming more standard offering 6Mb/s data rate or up to 30 frames per second at a resolution of 720 by 480 pixels. Once a piece of video has been recorded it needs to be captured; digital video cameras can be connected directly to one of the USB or serial ports on the desktop computer but analogue video needs to be captured via a video capture card.

1.Multimedia Skills & Training

2.Multimedia Skills

Multimedia Project involves entire team.

Each team member performs his task to complete the project.

Roles of the team members are not well defined, they may overlap

3.Responsibility of Multimedia Designer

Need to analyze content & match it up with effective presentation methods

Should be able to view his own view point according to the users

Looks at the overall content of the project

Creates a structure for the content

4.Writer

Creates Interactivity

Analyze the content, synthesize it & then communicate it in a clear & concise manner

Quality of interaction is much higher

5.Project Manager

Responsible for overall development & implementation of a project as well as for day to day operation

Budgets, schedules, creative sessions, timesheets, illness, invoices

Major role in Design & Management

Scheduling and assigning task, running meetings, managing milestones

Must Understand the strengths and limitations of hardware and software

6.Multimedia Designer

Qualities of multimedia Project:

Look & feel should be pleasing & aesthetic

Good mix of color, shape & type

Navigational clues should be clear & consistent

Icons should be meaningful

Screen elements should be simple & straightforward

7.Interface Designer

Interface provides access to multimedia data & provides control to the people who use it

Responsibilities:

Effective use of windows

Ease of use

Interface designer may also be the multimedia designer/graphics designer

8.Video Specialist

May be a single person with camcorder or responsible for entire team of videographers, sound technicians, actors etc.

Must be a skilled professional, managing all phases of production from concept to final edit

Should know the basics of shooting good video

Must understand potentials and limitations of media

9.Audio Specialist

Locating & selecting suitable music & talent, scheduling recording sessions, digitizing and editing recorded material into computer files

Should have a thorough understanding of needs and requirements involved in producing a successful sound tracks

The person will be either an engineer, technician, composer, sound designer or any combination of the above.

10.Multimedia Programmer

Integrates all the multimedia elements of a project using some authoring tool or programming language

Without programming ,No Multimedia

Manage all the peripherals, complex timings, record keeping

Should have better communication skills