UNIT-1

Introduction to Computer Graphics and multimedia

- Introduction to multimedia

→ Multimedia is the combination of multi and media that is many type of media (hardware /software /used for communication of information.

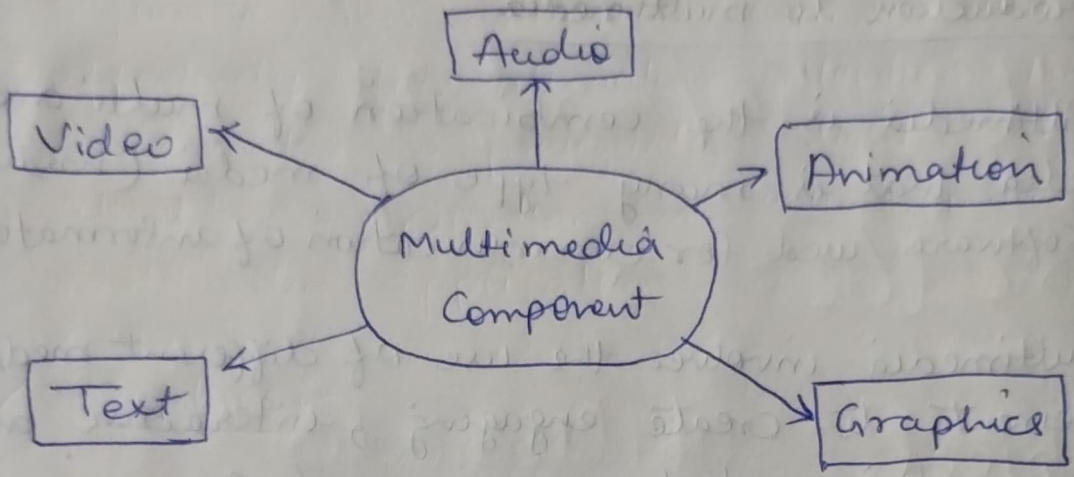
→ Multimedia involves the use of different media elements to create engaging, interactive and informative content across a wide range of applications and industries.

→ Multimedia is a software technology that combines different media like sound, video and, images and text either separately or in combination using a computer system.

→ A multimedia presentation is basically a digitally show because 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.

→ Multimedia is a computer based interactive communication process.

→ Multimedia is being employed in a variety of disciplines including education, training and business.



→ As Conclusion we say that multimedia refers to content that uses more than one medium.

- Components of Multimedia

1) Text :-

→ All multimedia productions contain some amount of text. The text can have various types of fonts and size to suit the profession presentation of the multimedia software.

2) Video :-

→ The term video refers to the moving picture, accompanied by sound such as a picture in television. Video element of multimedia application gives a lot of information in small duration of time.

→ Digital video is used in multimedia application showing real life objects. Video have highest performance demand on the computer memory and on the band width if placed on the internet

→ Digital video files can be stored like any other files in the computer and the quality of the video can still be maintained. the digital video files can be transferred within a computer network. The digital video clips can be edited easily.

3) Audio :-

→ A multimedia application may require the use of speech, music and sound effects. These are called audio or sound elements of the multimedia speech is also a perfect way for teaching.

→ Audio are of analog or and digital types. Analog audio or sound refers to the original sound signal. Computer stores the sound in digital form. Therefore, the sound used in multimedia application is digital audio.

4) Animation :-

→ Animation is a process of making a static image look like it is moving. An animation is just a continuous series of still images that are displayed in a sequence. The animation can be used effectively for attracting attention. Animation also makes a presentation light and attractive. Animation is very popular in multimedia application.

5) Graphics :-

→ Graphics make the multimedia application attractive. In many cases people do not like reading large amount of textual matter on the screen. Therefore graphics are used more often than text to explain a concept, present background information etc.

→ There are two types of graphics.

(a) Bitmap images :- Bitmap images are real images that can be captured from devices such as digital cameras or scanners. Generally bitmap images are not editable. Bitmap images require a large amount of memory.

(b) Vector graphics :- Vector Graphics are drawn on the computer and only require a small amount of memory. These graphics are editable.

- Multimedia Gadgets

→ Multimedia gadgets are ~~drawn on the computer~~ designed to create, consume or interact with multimedia content.

1) Smartphone :-

→ Smartphones are multifunctional devices that allow users to access the internet, make phone calls, send texts and emails, and consume and create multimedia content such as photo, video and music.

2) Tablets :-

→ Tablets are portable devices that have a touch screen and are designed for consuming multimedia content such as movies, TV shows and books. They can also be used for creating multimedia content such as drawing and writing.

3) Laptops :-

→ Laptops are portable computers that allow users to access the internet, create and consume multimedia content and perform various other tasks.

4) Smart TV :-

→ Smart TV are television sets connected to the internet, allowing user to access streaming services such as Netflix and consume other multimedia content.

5) Game consoles :-

→ Game consoles are devices designed specifically for playing video games. They often have powerful processors and graphics capabilities and ability to connect to the internet and access multimedia content such as movies and TV shows.

- Advantages of Multimedia

1) Improved Learning and Retention :-

→ One of the main advantage of multimedia is its ability to improve learning and retention. Multimedia presentations use a combination of different media, which can appeal to different learning styles and make the material more interesting and engaging.

2) Enchanced Communication :-

→ Multimedia can also be used to enhance communication and make it more effective. Multimedia can also make it

easier for people to understand the message and can help to engage the audience more effectively. Multimedia can help make complex concepts easier to understand and add a visual element to the ~~pre~~ presentation which can be more engaging for the audience.

3) Increased Accessibility :-

→ Multimedia presentation can be made more accessible for people with hearing or vision impairments through closed captions, audio descriptions and other features.

4) Increased Interactivity :-

→ Multimedia presentations can include interactive elements such as polls quizes and games, making the material more engaging and encouraging people to partcipate

5) Increased efficiency :-

→ Multimedia can save time and improve efficiency in a variety of context. For example in business, multimedia presentations can be used to communicate complex ideas or products to client more efficiently.

6) Greater flexibility :-

→ Multimedia offers greater flexibility than traditional media, as it can be accessed on various devices and platforms.

- Disadvantages of Multimedia

1) Cost :-

→ The production of multimedia materials can be expensive as it requires specialized equipment and skills.

2) Technical issues :-

→ Technical issues occuring when using multimedia such as problems with audio or video quality or compatibility issues with different devices.

3) Limited accessibility :-

→ Multimedia can also be limited by the quality of the audio and video, which can affect the overall experience for the user. For example, poor quality audio or video can make it difficult for people to understand the content, reducing its effectiveness.

4) Increased demand for skilled professionals :-

→ The production of multimedia content requires specialized skills and expertise which can be in high demand. Increased demand for skilled professionals.

5) Distractions :-

→ Multimedia can be distracting and overuse can lead to problems such as addiction

and lack of face to face communication skills.

6) Quality :-

→ The quality of multimedia content can vary and low quality content misleading.

7) Security Concerns :-

→ It is important to ensure that personal information is not shared and that appropriate

- Types of multimedia

(a) Linear Multimedia :-

→ It is also called non-Interactive multimedia. In the case of linear multimedia, the end user can not control the content of the application. A linear multimedia applications lacks all the features with the help of which a user can interact with the application such as the ability to choose different options.

→ Linear multimedia works very well for providing information to a large group of people such as at training sessions, seminars, workplace, meetings etc.

(b) Non-Linear Multimedia :-

→ In non linear multimedia the end user is allowed the navigational control to move (Rotate) through multimedia content at his own desire. The user can control the access of the application. Ex :- Computer games, websites, self paced computer based training package etc.

• Animation

→ Animation is the method of creating illusion of any movement by using rapid display of 3D and 2D method.

→ The effect of this becomes an optical motion or illusion because of persistence reason. Generally, the most common technique in presenting of motion picture we can also use other kind of methods.

→ Animation is basically derived from greek word "ani" which means any non-living object and motion based movement element animation.

→ Animation are created from a sequence of still images, each image is slightly changed from previous one. Animation become very famous since 1950s. ~~Nowadays~~ Nowadays, there are 2D animation and 3D animation movies.

→ Animation is putting life of non-living things.

• * Types of animations

→ The main types are :-

1) Traditional Animation
2) Stop motion Animation
3) Motion graphics.

1) Traditional Animation :-

→ It involves creating each frame by hand, typically on paper, historically used in classic animated films like Disney classics.

2) Stop Motion Animation :-

→ They are created by capturing a series of still images, with small adjustments between each frame. Often used in claymation, puppet animation and time-lapse videos.

3) Motion graphics :-

→ It combines text, shapes and image to create animated graphics. Frequently used in title sequences, explainer videos and advertising.

* Computer Graphics based type :-

→ Types of Animation based on the Computer graphics are :-

1) 2D animation
2) 3D animation

→ Computer graphics-based animations encompass a wide range of techniques and styles for creating animation using digital tools and software, making them suitable for a wide range of industries and creative projects.

Q. Difference between 2D and 3D animation.

→

2D	3D
1) 2D means that the object is 2-dimensional.	1) 3D means that the object is 3-dimensional.
2) 2D is the cheapest in prices as compare to 3D.	2) 3D is costly than 2D.
3) 2D is all about the frames of the images.	3) 3D is all about movements of the images.
4) In 2D images is created by the traditional.	4) In 3D, everything is created by drawing method.
5) A 2D image is composed by height & width.	5) A 3D image is composed by height, width & depth.
6) A 2D image is mathematical form x-axis, & y-axis.	6) A 3D image is arithmetical from x-axis, y-axis & z-axis.
7) Geometry in 2D are rectangle, square, triangle etc.	7) Geometry in 3D are cyclinder, cube, cone, etc.
8) It is not suitable for conceptual drawing.	8) 3D is suitable for conceptual drawing.

* Purpose of Animation

→ Animation is primarily used to create visual effects for telling a story through moving images. It is often, used in television, ad, gaming to create compelling visuals that engage the audience.

→ Animation requires software tools such as autodesk, maya, Cinema 4D and Adobe after effects.

→ It also requires powerful hardware such as high-end work stations and graphics card to render complex 3D animation.

* Simulation

→ Simulation is an imitation and replication from the real thing. This act of simulating basically it tells representing particular key behavior or characteristics of often chosen abstract or physically system.

→ This can be used in various context like safety engineering, video games and testing.

→ Simulation is used for scientific modeling, it order to acquire and get information of how they function.

* Different types of Simulation

1) Physical simulation :- Physical simulation uses mathematical models to simulate the behavior of physical system such as fluid dynamic or structural analysis.

2) Computer Simulation :- It uses computer programs to simulate complex systems such as traffic flow or financial markets.

3) Human Simulation :- It use role playing or other techniques to simulate human behavior such as it is training for emergency situation.

- Applications of multimedia technology

1) Education

→ There are currently a lot of educational computer games accessible. Take a look at an illustration offer educational apps that plays children rhymes. In addition to merely repeting rhymes, the youngester may create drawing, skip item up or down and more. There are many more multimedia products on the market that provide children with a wealth of in-depth knowledge and playing option

2) Business

→ Multimedia can be used in many applications in a business. The multimedia technology along with communication technology has opened the door for information of global work groups. Today the team member may be working anywhere and can work for various companies. Thus, the work palace will become global.

→ The multimedia network should support the following facilities :-

(a) Voice Mail
(b) Electronic Mails (e-mail)
(c) Multimedia based fax.
(d) Office needs.
(e) Employee training.
(f) Sales and other type of group presentation.
(g) Record management

3) Entertainment

→ Nowadays, the like internet pay to play gaming with multiple players has become popular. Actually, the first application of multimedia technology was in the field of entertainment and that to in the video game industry. The intergated audio and video effects makes various types of games more entertaining.

→ Generally most of the video games need joy stick play. Text, audio, images and animations are mostly used in computer games. The use of multimedia games make possible to make inovative and interactive games.

→ It is also used in movies for entertainment especially to develop social effects in movies and animations.

4) Games

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

5) Research and development

→ In the area of mathematical and scientific research multimedia is primary user for modeling and simulation. For example, looking at a molecular model via a scientist of a particular substance and manipulate it to arrive at a new substance.

6) Training

→ One of the main benefits of using multi-media is in the training facilitation that it can increase the learners engagement and motivation. multi-media can appeals different learning styles, preference and sense and provide more variety and interactive than

traditional methods. Multi-media learning describes learning through the use of pictures and words. Example of multimedia learning, include watching a powerpoint presentation, watching a pre-recorded lecture or reading a text book.

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UNIT-2

Multimedia system and its Application

- Sound Card

→ The Sound card capable of 4 voice music synthesis its gooch synthetic wood wind is is considered the first sound card.

→ It was used by plato terminals which was invented by Sherwin gooch in 1972.

→ Adlib was one of the first company that began to manufacture sound card or IBM PC compatible computer.

→ In 1987, on the basis of the Yamaha YM3812 sound chip, Adlib develop the music synthesiser card.

→ Although, until 1988 sound cards where very uncomon for the IBM PC. For the majority of IBM PC user to produce sound and music the internal PC speaker was the only way concequently, bassing (beeps and Boops) was described that was lead to the common name ~~beep~~ beeper.

* What is Sound Card

→ Sound cards, also known as audio cards or audio interfaces, are hardware components responsible for processing and rendering audio in computers and electronic devices.

→ Sound cards have both audio input and output capabilities, allowing them to receive audio signals from microphones or external sources and send audio to speakers or headphones.

→ They convert analog audio signals to digital data (ADC) and digital audio data to analog signals (DAC) for playback.

→ Sound cards have digital signal processor (DSPs) for audio processing, enabling tasks like sound effects, equalization and spatial audio processing.

→ They support different sample rates and bit depths, affecting the quality and fidelity of audio recording and playback.

→ Some sound cards include MIDI support for interfacing with MIDI instruments like keyboards and synthesizers.

→ Sound cards can connect to computers and devices through various interfaces, such as PCI, PCIe, USB or FireWire.

→ In the reverse case from the microphone the analog audio data is converted into digital data by the sound card. These data can be held on the computer device as well as modified with the help of using audio software.

→ Integrated sound cards are common in modern computers, providing basic audio funtionality, while external USB or PCIe sound ~~cards~~ cards offer higher audio quality and additional features for audio enthusiasts and professionals.

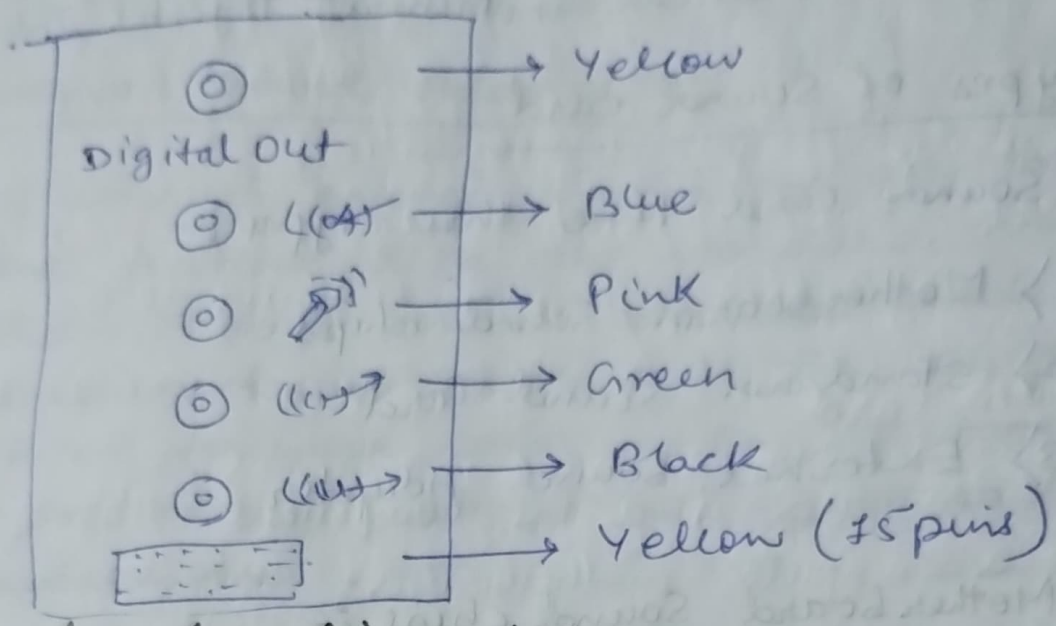
→ Sound cards are vital for a wide range of audio-related task, including music playback, video watching, gaming, audio recording, and video conferencing.

* Sound Card description

→ A sound card is a hardware in rectangle shape that contains different ports on the side to connect audio devices like a speaker and also has multiple contacts on the bottom of the card.

→ Nowadays most of the computer's motherboard manufacturers provide built-In sound cards. However, advanced user instead of generic built-In cards commonly used expansion cards selected to meet there particular requirements.

Sound card connections



Sound card audio ports :-

1) Sound or loudspeaker, digital out is used
2) Connection for external audio source such as tape recorder, record player or CD player (Blue, arrow pointing into beeps)
3) The connection is for headphones, microphones, mic (pink).
4) The primary sound connection sound out, line out (green, arrow pointing out of beeps).
5) ~~For digital~~ The second black sound out connector are also contain by the sound Card (Speakers or headphones).
6) For digital video camera and other devices some high quality sound card are used for connecting MIDI keyboard or joystick. (15 pin yellow connector)

connectors is used in sound cards).

* MIDI - Musical Instrument Digital Interface

- Types of Sound card

→ Sound card have three types :-

1) Motherboard Sound chips.
2) Standard Sound card
3) External Sound Adapter

1) Motherboard Sound chips :-

→ The sound were costly add on cards when they were intraced for the first time. It's costs 100s to dollars. When the computer sound technology become available at a low price. In modern time, there is a rare chance to find a computer not containg motherboard sound chip even if they only contain a separate sound card.

2) Standard Sound card :-

→ Inside a computer a ~~sar~~ standard sound card connects to one of the slots. Using a sound card rather than motherboard sound chip offering benefit as it contains its own processor chip and a motherboard sound chip produce sound on the basis on the computer processor. When playing games a standard sound

card offers better performance. As it creates less of a load on the main processor.

- External Sound Adapter :-

→ An external sound adapter has all the same features like the standard sound card. It is a small box that enables connection to computer with the help of USB or firewire ~~code~~ port. Sometimes, it contains a feature that is ~~not~~ included by a standard sound card such as physical volume, control knobs and extra input and output. As compared to the standard sound card it is much ~~eas~~ easier to move an external sound adapter to a new computer.

- Uses of Sound Card

→ The primary use of a sound card is to provide sound that you hear from playing music with varying formats and degree of control.

→ The source of the sound may be in the form of ~~a~~ stream audio, a file, CD or DVD etc.

→ There are many application of a computer where a sound card can be used :-

1) Games
2) Voice recognization

3) Watch Movies
4) Creating and playing MIDI.
5) Audio and Video conferencing
6) Busuness presentation
7) Record dictation.
8) Audio CD and listening to music

- Video Card

→ Video Card is a PC component that connects to a computer motherboard.

→ It is also known as Video controller, display adapter, video board, graphics card or video adapter.

→ Video card is controls and calculate an image appearance on the screen and use to improve picture quality.

→ Video card accelerates the video throughput as it is an intermidiate device.

→ The Video Card has the ability to speed up both 2D and 3D graphics.

→ Web browser and photo editor program may benifit from 2D acceleration.

→ Video games and CAD design program will likely advantage from the 3D acceleration.

Components of Video card

- Some essential components of a video card :-

1) GPU (Graphics Processing Unit)
2) Memory
3) Internal Interface
4) DVI / HDMI / VGA ports

1) GPU (Graphics Processing Unit) :-

→ It handles the mathematical computation needed to create visuals.

→ Some of the GPU processor provides advanced functionalities such as offer 3D graphics that look smoother through full scene anti-aliasing.

2) Memory :-

- Memory is needed for storing the complete information that can be accessed quickly when the time is right.
- RAMDAC (Random Access Memory digital to analog converter) converts the image to analog signal and then send them to your monitor or LCD screen with the help of a display cable.

3) Internal Interface :-

- The primary function of internal interface is to connect a graphics card to the motherboard. In the early time AGP

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(Accelerated graphics Port) interface was used by graphics card to connect to the motherboard but now graphic cards use PCI express & 2.0 * 16 interface to connect to the motherboard, which is much faster and efficient as compare to AGP

4) DVI / HDMI / VGA ~~ports~~ / S-video ports

(a) DVI (Digital video Interface) :- It is a video display interface develop for the PC industry to transmit digital video content to display devices.

- It virtually eliminates signal loss and keeps data in digital form.
- Some TV also use a DVI connector or DVI cables can transmit audio signals.

(b) S-video :-

- S-video is an ~~and~~ analog video connector which stands for super video.
- It transmit video electrical signals over wire to represent the original video.
- It is also used for connecting VCR TV video camera computer as well as DVD players

) VGA :-

- It is a popular display standard which stands for video graphics adapter or array.
- It was developed by IBM and introduced in 1987. It is a connection for devices like monitors and projectors that offers 640 * 480 resolution colour display screen.

d) HDMI (~~High~~

= HDMI is an interface or connector which is mainly used in devices like DVD player, projector HDTV.

- It stands for High definition multimedia interface that is widely used for audio visual equipment for transmitting high quality and high band width streams of audio and video between devices.

• Compression techniques

→ Data compression in multimedia is a technique that involves reducing the size of multimedia files to save storage space or transmission bandwidth.

→ It is used to maximize the use of Bandwidth and to optimize disk space.

→ The data compression involves two main components :

(a) Encoding Algorithm
(b) Decoding Algorithm

→ Popular compression algorithms include JPEG for images, MP3 for audio and MPEG for video.

→ There are two types of data compression techniques :

1) Lossy
2) Lossless

1) Lossy :- It sacrifices some data to achieve higher compression ratios, often acceptable in multimedia applications.

- Lossy data compression are used

to compress images, audio and video where some loss in quality is acceptable to reduce file size.

2) Lossless :- It's compression preserves quality, it may not achieve ~~compre~~ high compression ratio as lossy method.

~~Adjustable parameters in~~

- It retain all original data without any quality loss.

- Difference between Lossy and Lossless data compression

→

Lossy	Lossless
(a) It reduces the size of data	(a) It does not reduce the size of data. It only "packs" data into a smaller file size.
(b) It compromise with data's quality.	(b) It doesn't compromise the data's quality.
(c) In Lossy, a file doesn't restore in its original form	(c) In Lossless, a file can be restored in its original form.
(d) It is also termed as irreversible data compression.	(d) It is also termed as reversible data compression.
(e) Commonly applied to images, audio and video files where some loss is acceptable for the sake of reduced file size.	(e) Ideal for text files, executable programs, and scenarios where every detail need to be preserved.

- **Memory & storage devices**

→ Memory and storage play critical roles in multimedia applications by facilitating quick access to data during processing and ~~ese~~ ensuring ~~ample~~ space for storing multimedia content.

→ Computer storage is of two types.

(a) Primary Storage Devices

(b) Secondary Storage Devices

(a) ~~Primary Storage Devices~~

* Memory Devices in Multimedia

→ Memory devices are internal memory and main memory of a computer system.

→ This is a section ~~that~~ of the CPU that holds program instructions, input data and intermidiate results.

→ It is generally smaller in size, costly and high speed semiconductor memory.

(a) RAM: Used for temporary data storage essential for running multimedia applications as it stores active program data.

(b) VRAM: Video Random ~~Memory~~ Access Memory is a dedicated RAM for graphics processing, vital for

handling multimedia content such as images and videos.

) Cache Memory : It improves data access speed by storing frequently used instructions and data.

* Storage Devices in Multimedia

→ They are also known as secondary storage device that is stored external to the computer ~~de~~ system.

→ It is mainly used for the permanent and long-term storage of programs and data.

a) Hard Disk Drives (HDDs): Provide large storage capacity for long-term data storage, including multimedia files.

b) Solid State Drives (SSDs): It offer faster data access and lower latency compared to HDDs, ~~eth~~ enhancing multimedia content playback and editing.

c) Optical Drives: Used for reading/writing optical disks (CDs, DVDs) common for distributing or sharing multimedia content.

(d) flash Drives: Portable, high-speed storage devices suitable for transporting multimedia files

- Input devices

→ In the context of multimedia, several input devices are essential for creating and interacting with multimedia content.

→ These devices enable users to input various forms of data such as text, graphics, audio, and video.

→ Some common input devices in multimedia include:

1. Keyboard: It is used for entering text and commands, crucial for describing multimedia content.
2. Mouse: It enables precise control for selecting, dragging and interacting with graphical elements in multimedia applications.
3. Scanner: Converts physical images or documents into digital format.
4. Joystick: A joystick is a handheld device that we can move around. It's often used for playing games. or
5. Microphone: It captures audio input, allowing users to record voiceovers, music, or other sound elements for multimedia projects.

• Output hardware

→ In the context of multimedia, output hardware plays a vital role in presenting the combined audio, visual and interactive elements.

→ It converts the computer data to human understandable form.

1. **Monitor** : A monitor of also known as visual display unit (VDU) displays the processed data like text, images, videos, audios, etc.

2. **Printer** : It produces a hard copy of digital document or data. It allow us to get a physical copy of what we see on the screen.

3. **Speakers** : It produces audio signals as output, allowing us to hear sounds, music or computer spoken words.
   For the working of speakers, sound cards are required

4. **Headphones** : Provide a private audio output, useful ~~to~~ for listening to music, watching movie s.

5. **Projector** : It displays computer content on a large screen or surface, commonly used in home theaters.

- **Communication device**

→ Communication devices in multimedia facilitate the sharing, collaboration and distribution of multimedia content over networks, whether it's the internet or a local network.

→ They play a crucial role in connecting users and enabling real-time interaction with multimedia elements.

→ Communication devices in the context of multimedia are tools that enable the exchange of data and information.

→ The most common example of a communication device is a computer modem.

1. **Modem** : It facilitates communication over telephone or cable lines.
   - It's crucial for internet connectivity.
   - It enables the transfer of multimedia files, streaming, online collaboration or downloading/Uploading multimedia content.

2. **Router** : It manages network traffic, allowing multiple devices to connect and communicate within a network.

- It facilitates sharing multimedia files within a local network.

3. Network Interface Card (NIC): It's a hardware that allows our computer to connect to a network.
   - It is also known as an Ethernet card and a network adapter.

4. Bluetooth device: It is a wireless technology for short-range communication between devices.
   - Connects smartphones, headphones, speaker and other devices to share multimedia content wirelessly.

5. Smartphone: Portable mobile device with various capabilities, including calling, texting, internet browsing and multimedia functions.

6. Wireless Fidelity (Wifi): It enables wireless network connection by using one of the IEEE 802.11 wireless standards.
   - A wireless access point or router is used in home wifi.

7. Infrared device: Uses infrared light for short range communication between devices.

- Historically it was used for task like remote control communication (TV remotes), but less common in modern smartphones and devices due to limitations in data transfer speed and range.

- **Introduction to multimedia authoring tools**

→ Multimedia authoring involves creating interactive and dynamic multimedia content by combining various elements such as text, graphics, audio, video and animations.

→ It gives the framework for organizing and editing the components of a multimedia projects.

- **Multimedia (creating) authoring tools**

→ Multimedia authoring tools are software applications that are designed to facilitate the creation of multimedia content.

→ These tools provide user-friendly environment with features for importing, arranging and synchronizing different media types.

→ It often include timelines, scripting capabilities, and interactive elements to empower creators in developing multimedia presentations, websites, edits, games and educational materials.

→ Examples of multimedia authoring tools include Adobe Flash (now Adobe Animate), Unity 3D, and HyperCard.

- Types of authoring tools

→ There are mainly three types of authoring tools:

(a) Card or Page based authoring tools
(b) Icon based or Event driven authoring tools
(c) Time based authoring tools

(a) Card or Page based authoring tools:

→ These tools structure multimedia content as a series of cards or pages and each card or page represents a unit of information.

→ In these authoring system, elements are organized as pages of a book or a stack of cards. In the book or stack there are thousands of pages or card available.

→ We can jump from one page to another because all the pages are interrelated. One page may have a hyperlink to another page and by clicking on it we can skip several pages in between.

→ Every page of the book can contain multiple media elements like sounds, videos and animations.

Example : Hypercard (MAC)
Toolbook (Windows)
Powerpoint (Windows)
Supercard (MAC)

* Advantages :
- Clear and sequential organization for easy understanding
- One screen is equal to 1 card or 1 page.
- Easy to use as these tools provide template.
- Short development time.

* Disadvantages :
- Some run only on one platform
- Tools are not powerful.
- Historical or old tools may face compatibility issues with modern system.

b) Icon-based or Event-Driven Authoring tools:

→ Icon-based tools give a visual programming approach to organizing and present multimedea.

→ First we have to build a structure or flowchart of events, tasks and decisions by dragging appropriate icons from library.

→ Each icon does a specific task, for example - play a sound, open an image etc.

→ When the structure is built we can add our content text, graphics, animation, video and sounds.

→ Even a nontechnical multimedea author can also build highly complicated applications without scripting using icon based authoring tools.

- Example: Authorware Professional (Mac/Windows)
  Icon Author (Windows)

* Advantages:
  - Clear structure through visual elements.
  - Easy editing and updating.
  - Promote user engagement.

* Disadvantages:
  - Users might need to understand the logic behind event-driven programming.
  - Difficult to learn.
  - Expensive.

(c) Time based authoring tools

→ It allow the designer to arrange various elements and events of the multimedia project along a well defined timeline.

→ By timelines,

→ Timeline means the passage of time. As the time advances from starting point of the project, the events begin to occur, one after another.

→ The events may include media files playback as well as transition from one portion of the project to another.

→ The speed at which these transition occurs can be accurately controlled.

→ These tools are best to use for those projects, wherein the information flow can be directed from beginning to end much like the movies.

Example: Macromedia's Director
Macromedia Flash

* Advantages:
  - Good for creating animation.
  - Allow detailed controlled, branching & interactivity facilities

* Disadvantages:
  - Professional tools have high cost
  - Large file size.

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UNIT-3

Multimedia Software

→ Multimedia software refers to applications designed to handle a variety of media elements, such as text, graphics, audio, video and animations.

→ It provide tools for creating, editing and presenting multimedia content.

Examples: Macro-media, Adobe Photoshop, 3-D studio, paint-shop pro, Animator pro, director and hardvard graphics.

Adobe Photoshop

→ Adobe photoshop is a highly complicated or sophisticated graphics editing software developed by Adobe, company.

→ It allows users to manipulate and enhance digital images through a variety of tools and features, including layers, filters, brushes and advanced editing capabilities.

→ Photoshop is extensively used in professional settings such as graphic design, photography and digital art.

Released in 1988 by thomas and john Knoll.