Unit-8: Multimedia Applications

8-1 Media Preparation & Composition

Media preparation is performed by multimedia hardware and its supporting software. So, hardware & software are the basic components for introducing media to the digital world of computer

☆ Means:

○ **Video support:** Video support is an effective way to present multimedia elements because it allows for the integration of various elements, making it more interactive and engaging for the viewer. The ultimate goal is high resolution & a frame rate of 60 fps or faster which provides an extremely clear picture.

○ **Scanner devices:** They are typically used to digitize physical documents, images & other media. For high-quality publication of your work, a scanner is an effective solution. Scanner devices also provide OCR (optical character recognition) which can be used to convert scanned text to editable data.

○ **Recognition devices:** They are built to recognize different media & identify & interpret information. They can be used for voice recognition, facial recognition, object recognition etc.

○ **Tracking devices:** They are used to track the movement or position of something. There are several technologies like motion tracking, eye tracking, GPS tracking, electromagnetic tracking

✻ Media Composition:

Media Composition refers to the process of combining different types of media, such as text, images, audio & video to create a multimedia presentation. It can be used in variety of contents, such as digital media, film, & television production, advertising & interactive media. There are several tools used for media composition like - text and graphics editors, Image editors, animation editors, sound and video editors, etc.

8.2 Multimedia Integration & Communication

Media integration specifies relationships between various media elements to represent and manipulate a multimedia object. It includes:

○ Multimedia editors: They support the ability to manipulate multimedia documents that include structured text, bitmap images, graphics, video, etc.

○ Hypermedia/Hypertext editors: They are used to create & edit hypermedia & hypertext document, which are the documents that contain links to other documents or multimedia elements. They are mostly be used to create web pages, help files, interactive multimedia presentations etc.

○ Authoring tools: They are the software programs that are used to create & develop multimedia content, such as videos, animations, interactive experiences, & e-learning course.

A person who creates applications for multimedia integration is called an author & process together is authoring.

* Media Communication

It refers to the process of delivering and receiving multimedia content through various channels of communication such as the internet, television & mobile devices. Some of the services, are:-

○ **Tele-services:** It refers to the delivery of multimedia content through telephone lines, Such as phone-based audio and video conferencing, & phone-based interactive information services

○ **Interactive services:** It refers to the delivery of multimedia content through interactive channels such as the internet, mobile devices, & interactive television. These services allow users to interact with the multimedia content, through social media, online gaming & e-commerce.

○ **Distributed services:** It refers to the delivery of multimedia content through a distributed network, such as cloud computing & peer-to-peer networks. These services allow for the distribution of multimedia content to multiple users through the internet or other networks, without the need for a central server

* Media Consumption

It refers to the process of consuming or engaging with multimedia content, such as videos, audios, images, audio & text, through various channels of communication, such as internet, television & mobile devices. Viewing & listening are the most common ways to consume multimedia. Feeling multimedia can be experienced with virtual reality

8.3 Media Entertainment

○ **Virtual reality (VR):** It is a technology that use computer-generated simulations of a three-dimensional environments to create immersive experience. User wears a headset that displays the virtual world, & can interact with it using controllers or other input devices.

○ **Interactive video :** It is a form of multimedia that allows users to interact with the video content in some way. This can include choosing different angles, making choices that affect the outcome of video, or even controlling the movement of characters within the video

○ **Interactive audio :** It is similar to interactive video, but it allows users to interact with the audio content in some way. This can include choosing different sound effects or music tracks, adjusting the volume, or even controlling the movement of characters within the audio

8.4 Application of Multimedia in different fields

⇒ Application of Telemedicine in Multimedia
→ Application of e-learning in Multimedia
→ Application of Digital video editing & production in MM.
→ Application of video conferencing in Multimedia
→ Application of video-on-demand in Multimedia

o. Application of Telemedicine in multimedia.

The application of Telemedicine in multimedia are:

i) Remote Consultation and diagnosis : Telemedicine can be used to connect patients with healthcare providers remotely, allowing for virtual consultations & diagnoses through video conferencing & other multimedia tools.

ii. Remote monitoring: Patients can use telemedicine to remotely monitor & share their health data with healthcare providers, such as vital signs, medical images, and other multimedia information.

iii. Education & training: Telemedicine can be used to provide educational & training resources to healthcare professionals & patients through videos, animations, and other multimedia content.

o. <u>Application of E-learning in multimedia</u>

i) E-learning can use multimedia elements such as videos, animations, simulations to enhance the learning experience.

ii) E-learning provides opportunities to people to take course online & provides a virtual environment to learn

iii) Online collaboration & communication tools, mobile learning, adaptive learning, & so on.

o **Application of digital video editing & production in MM.**

i) Film & video production : Ex: creation of tv shows, films...
ii) News & documentary production
iii) Music videos & live performance
iv) Animation & special effects.
v) Virtual & augmented reality.
vi) Marketing & advertising.

o **Application of video-conferencing in multimedia**

i) Remote meetings & collaboration
ii) Virtual training & education
iii) Online interviews & consultations
iv) Remote support & troubleshooting

o **Application of video-on-demand in multimedia**

i) Film & television streaming.
ii) Live streaming
iii) Education & training videos
iv) Personalised & recommended content
v) Mobile & offline access.

Note: Imp

* Components of multimedia systems:
  - Multimedia input systems
  - Multimedia output systems
  - Multimedia storage systems

* Multimedia application development life cycle
  - Planning & costing
  - Designing
  - Developing & producing   (see notes in pc)
  - Testing & debugging
  - Delivering

Questions asked:

Q. Discuss the application of multimedia in video-on demand
   (2078 - 5 marks)

Q. Explain the applications of multimedia in telemedicine.
   (2076(new) - 5 marks)