

## LATIHAN 4.1

### 1. *Define multimedia.*

Multimedia is the presentation of information by using a combination of text, audio, graphic, video and animation. Multimedia has played an important role in other fields, such as business, arts, medicine and engineering. In business, multimedia applications are used in advertising products. Many companies nowadays develop and distribute catalogues in the form of a CD-ROM as it is more interesting to the consumers. In art, artists use multimedia elements by combining drawing and animation.

### 2. *Identify the use of multimedia in various fields.*

#### **i. Education and training**

Learning has become more interesting and effective with educational programmes such as “edutainment” that is a combination of education and entertainment.

#### **ii. Entertainment**

Entertainment produce computer games, and develop animations or special effects for cartoons and movies.

#### **iii. Scientific research**

New findings can help the researchers to improve the condition of sick people.

**iv. Business** Multimedia applications are used in advertising products. Many companies nowadays develop and distribute catalogues in the form of a CD-ROM as it is more interesting to the consumers.

#### **v. Art**

Artists use multimedia elements by combining drawing and animation.

#### **vi. Medicine**

Doctors can practice or be trained in performing high-risk surgery by using virtual surgery.

#### **vii. Engineering,**

Computer-Aided Design or CAD is used. By using this application, engineers can view the design from many aspects and improve on it before production.

3. Differentiate between the characteristics of linear and non-linear multimedia.

LINEAR	NON-LINEAR
the user interacts with the multimedia application without controlling the progress of the content.	Allows the user to interact with the content according to what the user wants from the content.
Content is usually arranged in sequence.	Uses tools like “hypertext” to connect a word or a phrase to another screen.
the user has no control over the sequence of events.	The user can control the progress and sequence of the multimedia

4. Compare and contrast the mediums of delivery for multimedia applications:

**i. Web-based**

Web-based multimedia is a combination of multimedia technology and Internet technology. Web-based multimedia is popular nowadays.

In the past, Web pages were filled only with static texts and graphics as there were problems in downloading large multimedia files through the Internet. Downloading a video file could take a long time as it is large.

**ii. Multimedia Technology In The Internet**

Now, with the advancement of both technologies, most Web pages integrate elements like text, graphic, audio, video and animation. These dynamic elements make the process of distributing information through the Internet more interesting and effective to the user. There are a lot of multimedia software including plug-ins, players and browsers used in the Internet. These software allow better quality multimedia programs to be stored and viewed.

**iii. CD Based**

CDs like CD-ROM (Compact Disc Read Only Memory) have been used to store and deliver multimedia content. CDs are usually used with computers. An improvement of the CD-ROM is the Blu-ray disc which can store better quality video. However, the main problem in using CD-ROMs as a medium is that, it can be costly as it takes a long time to produce a complete multimedia program.

## 5. *Identify the multimedia elements*

### **TEXT**

Text is the basic element of multimedia. It involves the use of text types, sizes, colours and background colour. In a multimedia application, other media or screen can be linked through the use of text. This is what you call Hypertext.

### **GRAPHICS**

Graphics make the multimedia application attractive. They help to illustrate ideas through still pictures. There are two types of graphics used: bitmaps (paint graphics) and vector (draw graphics). Bitmaps images are real images that can be captured from devices such as cameras or scanners. Vector graphics are drawn on the computer and only require a small amount of memory.

### **AUDIO**

A multimedia application may require the use of speech, music and sound effects. These are called audio or the sound element. There are two basic types of audio or sound: analog and digital audio. Analog audio refers to the original sound signal. Digital audio refers to the digital sampling of the actual sound. The sound used in multimedia is digital audio. We can record analog audio file. We can use special audio editors like Sound Forge to convert analog audio files into digital audio files.

### **VIDEO**

Video provides a powerful impact in a multimedia program. In multimedia applications, the digital video is gaining popularity because of the following reasons:

- ❖ video clips can be edited easily
- ❖ the digital video files can be stored like any other files in the computer and the quality of the video can still be maintained
- ❖ the video files can be transferred within a computer network
- ❖ it allows non-linear editing in any part of the video

However, these digital video files are large in size. Transferring these files can take a long time especially when using the Internet

### **ANIMATION**

Animation is a process of making a static image look like it is moving. In multimedia, digital animation is used. Digital animation can be categorised into two broad area: 2D (2 Dimension) and 3D (3 Dimension) animations. 2D animation refers to creating movements in basic objects. These objects are put into various situations or positions and have movement on the screen. 3D animation refers to creating movements to three dimensional digital objects from photographs. Movements like spinning and flying across the screen are some samples of animations.

## LATIHAN 4.2

### *1. Identify hardware that can be used to produce multimedia products*

#### i. Scanner

Scanner are used to convert conventional images, texts, drawing and photo into digital from that can be understood by the computer

#### ii. Video Camera

An analog video camera record video in analog signals on a magnetic video tape

A digital video camera records video in digital signals, which can be stored in various forms of media, such as digital video tape or memory cards

#### iii. Camera

In an ordinary camera, images are captured on a roll of film. In a digital camera, images are captured and stored in a media card

#### iv. Audio Devices

Audio devices are needed to record analog sound. The sounds are then changed into digital sound

#### v. Video Capture Devices

Video Capture devices help to convert analog video to digital video. The firewire or USB helps to transfer the video from video camera to the computer.

### *2. Identify editing software that can be used to produce multimedia elements*

#### i. Text

A text editor is used to edit plain text, Eg. Software : Notepad, Microsoft Word

#### ii. Graphics

A graphics editor can edit images, draw or illustrate pictures or objects.

#### iii. Animation

An Animation editor can used for producing 2D, 3D, special effect and animation for the web.

#### iv. Audio

An audio editor is used for voice recording or producing music and special sound effect

#### v. Video

A video editor is used to edit video:

### 3. *Define the various concepts in authoring tools*

#### i. Tie frame Concept

With time frame concept authoring tools, the multimedia elements or events are presented and organised along a time line. This type of tool helps users coordinate when each multimedia element (text, graphics, audio, video or animation) plays. In time frame concept authoring tools, a timeline consists of layers which span several frames.

#### ii. **ICON CONCEPT**

The icon concept in authoring tools provides the multimedia developer with a visual programming approach to sequencing events in the multimedia application. In this concept, elements and events are organised in a structural framework.

With icon authoring tools, users can present visually a logical flow of events by dragging icons from an icon menu. The icon can represent graphics, audio files, animation, text, movies, and other elements should be played in a logical flow or flow chart

#### iii. **CARD CONCEPT**

The card concept in authoring tools are based on the idea of card stacks containing graphics, audio, video, text and animation. Elements and events in card concept authoring tools are organised as pages in a book or a stack of cards.

When card concept authoring tools starts, a blank page is displayed. Certain objects can be inserted e.g. text, pictures and buttons. By inserting objects into several pages, a multimedia "book" is eventually created.

LATIHAN 4.3
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### 1. *Describe and give examples of web editors*

#### **TEXT-BASED**

A text-based Web editor is a basic editor where you work with Hypertext Markup Language (HTML) tags to create a Web page. It can be used to change HTML source codes. Using a text-based Web editor requires you to have HTML knowledge to get started. Software such as Notepad and PSPad are examples of text-based editors. PSPad has additional functions that include syntax highlighting and toolbars.

## WYSIWYG

WYSIWYG is an acronym for What You See Is What You Get. WYSIWYG web editors provide an editing interface that shows how the pages will be displayed in a web browser. Using a WYSIWYG editor does not require any HTML knowledge. It is easier for an average computer user.

### 2. State user interface principles.

PRINCIPLES	INFO
Consistency	the interface design is in harmony and the same applies to all screen in a software program
Clarity	<ul style="list-style-type: none"><li>• clearness of labels on all icons to make the system easy to understand.</li><li>• use relevant icons or graphics to indicate the information.</li><li>•</li></ul>
Context	<ul style="list-style-type: none"><li>• every part of a lesson should be relevant to a particular title.</li><li>• Ideas presented need to relate to the title</li></ul>
Navigation	users can move around the menus.
Search	enables users to search keywords or glossary.
Learnability	provides support information and help files to make the system easy to understand
Flexibility	user has the authority to navigate through all the sections without any limitations.
Personalisation	users can make their own personal learning.

### 3. State a CASPER screen design and layout principles

#### i. Contrast

The principle of contrast states that, if two items are not exactly alike it makes them different. Contrast provides interest within a piece of graphic and keeps the observer entertained

#### ii. Alignment

Alignment is idea that, while items are separated by idea and space ( the principle of proximity) they are still all part of the same page

#### iii. Simplicity

Gaining attention is an important part in any communication act, it is important to try to keep your message as simple as possible

iv. Proximity

The principle of proximity states that things that are close together will be seen as belongs together

v. Emphasis

One method used to attract attention in the design of a screen or work of art is the use of a focal point. A local point draws your attention to the most important element on the page.

vi. Repetition

Repetition is the idea that consistency can be gained by repeating elements throughout a page or series of pages. Repetition item in a piece tie it together as a whole.

4. *State the role of each member in a development team*

**Project Manager's Roles**

The Project Manager's roles are to define the scope of the project and discuss with the client. He has to search for financial resources, equipment and facilities. He manager also needs to coordinate the production team.

**Subject Matter Expert's Role**

The Subject Matter Expert's role is to do research on the content of a multimedia program. He has to provide content for the multimedia content.

**Graphic Artist's Role**

The Graphic Artist's role is to develop the graphic elements of the program such as backgrounds, buttons, photo collages, 3D objects, logos and animation.

**Audio-Video Technician's Role**

The Audio Technician is responsible for recording the voice. He edits the sound effects. He records and edits music. He is responsible for capturing, editing and digitizing the video.

**Instructional Designer's Roles**

The Instructional Designer's roles are to decide on the best educational strategies and practices to present the information.

**Programmer's Role**

The Programmer's role is to write the program code lines or scripts using the authoring tool. He combines the multimedia elements into a multimedia program.

## **Webmaster**

New technology has now made it very easy for many people to access the Web. Designing interesting Web sites is very important for many businesses. The webmaster's main job is to create and maintain the Web site. He should be able to integrate the multimedia elements into a Web page. He also handle enquiries and feedback.

### *5. Describe the phases in multimedia production:*

There are six phases involved in the production of a multimedia project. The six phases involved can be categorised into 3 main stages:

**Pre-production** is the process before producing the multimedia project.

**Production** is the process of producing the multimedia project.

**Post-production** is a process after producing the multimedia project.

#### **Analysis Phase**

During the Analysis Phase, the multimedia developers interview the clients to find out their needs and write the Problem Statement and a Proposal.

#### **Design Phase**

Based on the needs of target users, the multimedia developer will design a Flow Chart and Storyboard.

#### **Implementation Phase**

Once the Storyboard is confirmed, the multimedia developers will start Implementation Phase. This phase refers to the process of converting the design plan into a multimedia program. This is the phase where the multimedia program is produced.

#### **Testing Phase**

The multimedia developers will use a Checklist to test the multimedia program. If there are any errors, the programmer will fix the program.

#### **Evaluation Phase**

In the Evaluation Phase, selected users will use an Evaluation Form to try out the program and give feedback

#### **Publishing Phase**

Finally, when the multimedia program is completed, it will be published to CD or another medium.

## LATIHAN 4.4

1. *State and give an example of immersive multimedia*

Immersive Multimedia is a combination of multimedia elements and interactivity in Virtual Reality. The history began with the concept of Virtual Reality with the desire of computer scientists and artists was to create, digitally-made 'near-to-reality' experiences through Interactive Multimedia in 1960s. This became known as Virtual Reality. Virtual Reality, today, is a computer-created environment that a user can experience through the senses of sight, hearing and touch.

Example Of Immersive Multimedia

- ❖ Education
- ❖ Business
- ❖ Entertainment
- ❖ VRML