COMPUTER APPLICATIONS

1. Multimedia and Desktop Publishing

webStrake

Short Answers

1. Define Multimedia and their features

Multimedia allows the users to combine and change data from various sources like image, text, graphics, video, audio and video to a single platform.

Features like storage, communication, presentation and Input/ output interactions of text, video, image, graphics and audio.

2. List out Multimedia Components

Multimedia has five major components like text, images, sound, video and animation.

3. Classify the TEXT component in multimedia

Text is the basic components of multimedia and most common ways of communicating information to other person. Two Text Components **1. Static Text** **2. Hypertext**

4. Classify the IMAGE component in multimedia

Images acts as an vital component in multimedia. These images are generated by the computer in two ways, as bitmap or raster images and as vector images.

5. Define Animation and their features

Animation is the process displaying still images so quickly so that they give the impression of continuous movement. In animation the screen object is a vector image in animation.

6. List out image file formats

There are BMP (Bitmap), DIB (Device Independent Bitmap), GIF (Graphics Interchange Format), JPEG (Joint Photographic Experts Group), TGA (Tagra), PNG (Portable Network Graphics)

7. List out audio file formats

There are WAV (Waveform Audio File Format), MP3 (MPEG Layer-3 Format), OGG, AIFF (Audio Interchange File Format), WMA (Windows Media Audio), RA (Real Audio Format)

8. List out video file formats

There are AVI (Audio/Video Interleave),
MPEG (Moving Picture Experts Group)

9. Define Multimedia Production

Adequate time and efficient planning is required for multimedia production, which assures that the project will be proceed smoothly and certainly ensures that the information reaches the target audience.

10. List out Multimedia Production team members

There are Script writer, Production manager, Editor, Graphics Architect, Multimedia Architect and Web Master.

Explain in Brief Answer

1. Briefly explain about Multimedia Components

Text: Text is the basic components of multimedia and most common ways of communicating information to other person

Image: Images acts as an vital component in multimedia.

Animation: Animation is the process displaying still images so quickly so that they give the impression of continuous movement.

Sound: Sound is a meaningful speech in any language

Video: The powerful way to convey information in multimedia applications are embedding of video.

2. Describe the features and techniques of animation

Using numerical transformations the movement of that image along its paths is calculated for their defining coordinates.

Animations may be in two or three dimensional.

The two dimensional animation, bring an image alive, that occur on the flat X and Y axis of the screen.

While in three dimensional animation it occurs along the three axis X, Y and Z. Animation tools are very powerful and effective.

3. Write roles and responsibilities of Production team members

Managing team members in a way to get maximum outcome with high degree of efficiency is mandatory in multimedia production.

The fine quality high-end multimedia production application requires a specialize team comprises

4. Describe the various file formats in multimedia (any3)

Musical Instrument Digital Identifier (MIDI)

Musical Instrument Digital Identifier (MIDI) is a standard communication tool developed for computers and electronic instruments. This tool is flexible and easy for composing the projects in multimedia.

RTF: Rich Text Format is the primary file format introduced in 1987 by Microsoft with the specification of their published products and for cross-platform documents interchange.

Plain text: Plain text files can be opened, read, and edited with most text editors.

Plain text is the original and popular way of conveying an e-mail.
TIFF (Tagged Image File Format): This format is common in desktop publishing world (high quality output), and is supported by almost all software packages.
BMP (Bitmap): Initially this format is in use with Windows 3.1. It is quite large and uncompressed and hence BMP is used for the high-resolution or large images.

5. Explain animation industry and their scope

Create animation and visual effects for films, video games, television, mobile devices, and other forms of media using illustrations and software programs. Animators also create graphics and develop storyboards, drawings and illustrations. They create, plan, and script animated narrative sequences, and assist with background design and production coordination.

Scope of animation:

Work opportunities for quality animators and related professionals like graphic designers, multimedia developers, game developers, character designers, key frame animators, 3D modelers, layout artists, etc.

Explain in detail

1. Explain in detail Process of Multimedia

1. Conceptual Analysis and Planning : The process of multimedia making begins with a conceptual ignition point. Conceptual analysis identifies a appropriate theme, budget and content availability on that selected theme.
2. Project design: Once the theme is finalized objectives, goals, and activities are drawn for the multimedia project.
General statements are termed as goals.
3. Pre-production: Based on the planning and design, it is necessary to develop the project.
a. **Budgeting:** Budgeting for each phases like consultants, hardware, software, travel, communication and publishing is estimated for all the multimedia projects.
b. Multimedia Production Team: The production team for a high end multimedia project requires a team efforts.
c. Hardware/Software Selection: All multimedia Application requires appropriate tools to develop and playback the application. Hardware includes the selection of fastest CPU, RAM and huge monitors, sufficient disc for storing the records.
d. Defining the Content: Content is the "stuff " provided by content specialist to the multimedia architect with which the application is developed, who prepares the narration, bullets, charts and tables etc.
e. Preparing the structure: This structure defines the activities, responsible person for each activity and the start/end time for each activity.
4. Production: In the multimedia application, after the pre-production activityes, the production phase starts. This phase includes the activities like background music selection, sound recording and so on.
5. Testing: The complete testing of the pilot product is done before the mass production to ensure that everything is in place, thereby avoiding the failure after launch
6. Documentation: User documentation is a mandatory feature of all multimedia projects.
The documentation has all the valuable information's starting from the system requirement till the completion of testing.
7. Delivering the Multimedia Product: Multimedia applications are best delivered on CD/DVD or in the website .
A multimedia application is delivered in a more effective way by the integration of two mediums CD-ROM/DVD and Internet.

2. Explain in detail Techniques of Animation

1. Stop-Motion Animation

Stop-motion animation is the careful process of photographing a model, moving it a minuscule amount. The concept is easy to understand and perform, that does not mean stop-motion is not time-consuming. stop-motion animation can be very realistic, moving and stylistic. Films like by Tim Burton show that the stop-motion is not a genre,

2. Cutout and Collage Animation

Simple animation used on TV is usually a combination of cutout and collage techniques..
Collage animation uses the same process, except the pieces that are animated are cut from photos, books, magazines or clipart.

3. Rotoscoping

Rotoscoping is used to capture realistic human movement by drawing over film footage of the live actors. Perhaps this sounds like cheating, but adding an artist's vision to the movements of a human actor can create the unique storytelling medium that is just as stylistic as any other form of animation.

4. Cel Animation

When someone says the word cartoon, what we see in our head is usually the cel animation. Cartoons today rarely use the pure cel animation of the past, instead of employing computers

and digital technology to help streamline the process. Cartoons like The Simpsons and Adventure Time are made with the cel animation.

***5.* Flash Animation**

- Flash animation is a way to create not just simple animations for websites but also for full-blown cartoons, some of which mimic cel animation very well.
- Flash animation is created using Adobe Flash, or similar software program. The animations are made using vector-based drawings.
- If an animator doesn't create enough frames or spend enough time on the animation, the characters' movements can be jerky.

3. Explore the opportunities Animation filmed movie industry

A job in animation can be defined as the art of breathing life to a character or an object. A blend of entertainment industry and technology, it is concerned with design, drawing, layout and production of graphically rich and attractive multimedia clips.

students that complete an animation course or a visual effects course could find job opportunities only in the film industry. In India, the VFX domain, or the animation and visual effects industry, has been growing stronger and stronger in recent years.

A list of probable job roles in animation:

1. 2 D Animator 2. 3D Animator 3. Key Frame Animator 4. Image Editor
5. Modeller 6. Character Animator 7. Texture Artist 8. Layout Artist
9. Lighting Artist 10. Story Board Artist 11. Background Artist
12. Clean Up Artist 13. Rigging Artist 14. Rendering Artist
15.Digital Ink and Paint Artist

4. Explain in detail about production team Roles and Responsibilities

1. Production Manager: In a multimedia production, the role of production manager is to define, and coordinate, the production of the multimedia project in time and with full quality.

2. Content Specialist: Content specialist is responsible for performing all research activities concerned with the proposed application's content.

3. Script Writer : Video and film scripts represents a linear sequence of events. The script writer visualizes the concepts in three dimensional environments and if needed uses the virtual reality integration into the program.

4. Text Editor : The content of a multimedia production always must flow logically and the text should always be structured and correct grammatically.

5. Multimedia Architect: The multimedia architect integrates all the multimedia building blocks like graphics, text, audio, music, video, photos and animation by using an authoring software.

6. Computer Graphic Artist: The role of Computer Graphic Artist is to deal with the graphic elements of the programs like backgrounds, bullets, buttons, pictures editing, 3-D objects, animation, and logos etc.

7. Audio and Video Specialist: The roles of these specialists are needed for dealing with narration and digitized videos

They are responsible for recording, editing sound effects and digitizing.

8. Computer Programmer: The computer programmer writes the lines of code or scripts in the appropriate language.

9. Web Master: The responsibility of the web master is to create and maintain an Internet web page. They converts a multimedia presentation into a web page.

5. Explain about different file formats in multimedia files (ANY 6)

TIFF (Tagged Image File Format)

This format is common in desktop publishing world (high quality output), and is supported by almost all software packages.

TIFF allows image compression, and the format is comfortable for moving large files between computers.

The TIFF format was developed in 1986 by an industry committee chaired by the Aldus Corporation

BMP (Bitmap)

Initially this format is in use with Windows 3.1. It is quite large and uncompressed and hence BMP is used for the high-resolution or large images.

DIB (Device Independent Bitmap)

This format which is similar to BMP, allows the files to be displayed on variety of devices.

DIB was introduced to the world by Compuserve in 1987

GIF (Graphics Interchange Format) 1987

GIF is a compressed image format.

Most of the computer color images and backgrounds are GIF files.

The format supports up to 8 bits per pixel for each image.

13-bit Color look up table is used by the GIF format to identify its color values.(book value).

JPEG (Joint Photographic Experts Group) 1983

JPEG was designed to attain maximum image compression. It uses lossy compression technique, where a compression method is referred that loses some of the data required for the image reconstruction.

TGA (Tagra)

It is the first popular format for high resolution images. TGA is supported by Most of the video-capture boards.

PNG (Portable Network Graphics)

The PNG format was created in **December 1994** and has been stable since March 1995.
An extensible file format for the less loss, portable and well compressed storage of raster images. PNG acts as replacement for GIF and also replaces multiple common uses of TIFF.

AIFF (Audio Interchange File Format) 1988

A standard audio file format used by Apple which is like a WAV file for the Mac.

WMA (Windows Media Audio) The first version of the codec released in 1999
It is a popular windows media audio format owned by Microsoft and designed with Digital Right Management (DRM) abilities for copyright protection.

RA (Real Audio Format)

Real Audio format is designed for streaming audio over the Internet. The digital audio resources are usually stored as a computer file in computer's hard drive or CD/DVD.

WAV (Waveform Audio File Format)

It is the most popular audio file format in windows for storing uncompressed sound files.

MP3 (MPEG Layer-3 Format)

MPEG Layer-3 format is the most popular format for storing and downloading music.
The MP3 files are roughly compressed to one-tenth the size of an equivalent WAV file.

OGG 2007

A free, open source container format that is designed for obtaining better streaming and evolving at high end quality digital multimedia. It can be compared to MP3 files in terms of quality.

AVI (Audio/Video Interleave) developed by the Matrox OpenDML group February 1996

AVI is the video file format for Windows. Here sound and picture elements are stored in alternate interleaved chunks in the file.

MPEG (Moving Picture Experts Group)

MPEG is a standard for generating digital video and audio compression under the International Standards Organization (ISO) by the group of people.

The major MPEG standards include the following; - for reference ONLY

MPEG-1: The most common implementations of the MPEG-1 standard provide a video resolution of 352-by-240 at 30 frames per second (fps). This produces video quality slightly below the quality of conventional VCR videos.
MPEG-2: Offers resolutions of 720x480 and 1280x720 at 60 fps, with full CD-quality audio. This is sufficient for all the major TV standards, including NTSC, and even HDTV. MPEG-2 is used by DVD-ROMs. MPEG-2 can compress a 2 hour video into a few gigabytes. While decompressing an MPEG-2 data stream requires only modest computing power, encoding video in MPEG-2 format requires significantly more processing power.
MPEG-3: Was designed for HDTV but was abandoned in place of using MPEG-2 for HDTV.
MPEG-4: A graphics and video compression algorithm standard that is based on MPEG-1 and MPEG-2 and Apple QuickTime technology. Wavelet-based MPEG-4 files are smaller than JPEG or QuickTime files, so they are designed to transmit video and images over a narrower bandwidth and can mix video with text, graphics and 2-D and 3-D animation layers. MPEG-4 was standardized in October 1998 in the ISO/IEC document 14496. *See MPEG-4*.
MPEG-7: Formally called the *Multimedia Content Description Interface*, MPEG-7 provides a tool set for completely describing multimedia content. MPEG-7 is designed to be generic and not targeted to a specific application.
MPEG-21: Includes a *Rights Expression Language* (REL) and a Rights Data Dictionary. Unlike other MPEG standards that describe compression coding methods, MPEG-21 describes a standard that defines the description of content and also processes for accessing, searching, storing and protecting the copyrights of content. *SeeMPEG-21*.

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