ASSIGNMENT-02

(a)   Sprite Animation

A sprite is a bitmap graphic that is designed to be part of a larger scene. It can either be a static image or an animated graphic. Examples of sprites include objects in 2D video games, icons that are part of an application user interface, and small images published on websites. A sprite is usually an individually animated element in a larger graphic image or set of images.

Explanation of the Example:

In this example, firstly an animation is created. Then it is converted to 1-bit mask image M. Finally, it accompanied sprite S. Then it overlays the sprite on a colored background B by first ANDing B and M, then ORing the result with S.

(b)   Fade-In and Fade-Out

A filmmaking and broadcasting technique whereby an image is made to appear gradually or the volume of sound is gradually increased from zero.

A filmmaking and broadcasting technique whereby an image is made to disappear gradually or the sound volume is gradually decreased to zero.

In graphics and video editing, fade out is a term used to describe a transition effect where the image slowly disappears into a black. This usually indicated the end of a scene or the video.

(c)   A Short Note on JPEG and MPEG

JPEG:

A format for compressing image files. JPEG stands for "Joint Photographic Experts Group." It is a popular image file format. It is commonly used by digital cameras to store photos since it supports 2^{24} or 16,777,216 colors. The format also supports varying levels of compression, which makes it ideal for web graphics.

The JPEG compression algorithm may reduce the file size of a bitmap (BMP) image by ten times with almost no degradation in quality. Still, the compression algorithm is lossy, meaning some image quality is lost during the compression process.

File extensions: .JPG, .JPEG, .JFIF, .JPX, .JP2

MPEG:

An international standard for encoding and compressing video images. MPEG stands for "Moving Picture Experts Group." It is an organization that develops standards for encoding digital audio and video. It works with the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) to ensure media compression standards are widely adopted and universally available.

Using MPEG compression, the file size of a multimedia file can be significantly reduced with little noticeable loss in quality. This makes transferring files over the Internet more efficient, which helps conserve Internet bandwidth. MPEG compression is so ubiquitous that the term "MPEG" is commonly used to refer to a video file saved in an MPEG file format rather than the organization itself.

File extensions: .MP3, .MP4, M4V, .MPG, .MPE, .MPEG

(d) How Expensive Image and Video Processing in terms of Processing the CPU?

Image and Video Processing are hot topics in the field of research and development. Image processing is any form of signal processing for which the input is an image, such as photographs or frames of video; the output of image processing can be either an image or a set of characteristics or parameters related to the image. Most image-processing techniques involve treating the image as a two-dimensional signal and applying standard signal-processing techniques to it. Video processing is a particular case of signal processing, where the input and output signals are video files or video streams. Video processing techniques are used in television sets, VCRs, DVDs, video codecs, video players and other devices.

Image and video processing cost is basically depends on some criteria. On which platform we want to process or the processing techniques. But in general we can see that the tools for image and video processing is very expensive. For processing images and video using these tools we have to pay a vast amount of money for buying those.

(e) What is IPTV (Internet Protocol TV)

IPTV stands for Internet Protocol television. It is a service that provides television programming and other video content using the TCP/IP protocol suite as opposed to traditional cable or satellite signals. IPTV allows a television service to be integrated with a broadband Internet service and share the same home internet connections. IPTV requires high-speed internet connectivity due to the high network bandwidth requirements of digital video. Being connected to the internet allows users of IPTV more control over their television programming and ability to customize it to their preferences.

What is Live Stream?

It is the process of transmitting or receiving live video and audio coverage of (an event) over the Internet. It is the broadcasting of real-time.

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