Unit 9 – Multimedia

Introduction

- A Multimedia is the term used to refer to a combination of text, graphics, animation, sound and video.
- MP3 (MPEG Audio Layer 3) is a standard way of storing compressed digital audio files (usually music).
- Digital audio is created by sampling sound 44,000 times a second and storing a code number to represent each sound sample.
- The files are compressed by removing any sounds that are inaudible to the human ear, making them much smaller than files created using other digital audio storage standards , such as WAV.

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- **Introduction -- *Measurements***
  - The size of an audio file commonly measured in megabytes (MB) (millions of bytes).
  - The frequency of a sound is measured in kilohertz (kHz) (thousands of cycles per second).
  - MP3 files have extra code added, called tags, that give the user information about the file e.g. the performer's name, a URL (uniform resource locator i.e. a web address) or a graphic such as an album cover.

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Introduction -- *MP3 files*

- Because of their small size, MP3 files are more suitable for transferring across the Internet (the connection of computer networks across the world).
- Some Internet websites (sets of related pages stored on a Web server on the World Wide Web) are devoted to providing MP3 file for downloading (copying from a server computer to a client computer).
- The user can create their own music compilations (combinations of files) by listening to each file using a computer program, such as Windows Media Player, and choosing what files to download.

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❖ Introduction -- *Manipulating Audio files*

- Special MP3 player devices are also available that enable the user to listen to MP3 files without a computer.
- MIDI (Musical Instrument Digital Interface) is a standard way of connecting musical instruments, music synthesisers and computers.
- A piece of electronics called a MIDI interface board is installed on each device to enable the device to communicate using MIDI standards.
- As music is being played, it can be displayed on a monitor screen as a musical score, then edited using a computer program that uses all the features of a mixing desk (an electronic device for mixing sounds together), stored and printed.

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Introduction -- *Musical Instrument Digital Interface (MIDI)*

- MIDI systems do not store the actual sound. Instead the sound is encoded (stored as MIDI messages) in the form of 8-bit bytes (units of capacity equal to eight binary digits i.e. 1s and 0s) of digital information.
- A bit is a binary digit i.e. a 1 or 0, and byte is a group of 8 bits.
- The MIDI messages commonly consist of instructions that tell the receiving instrument what note to play, how long and how loud it should be played, including a number that indicates which instrument to play.
- Each instrument is represented by a different number e.g. 67 is a saxophone.

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- **Introduction -- *Storing Multimedia Files***
  - A DVD-ROM, commonly referred to as a DVD (digital versatile disk – previously known as digital video disk), is a development of CD-ROM (compact disk read only memory).
  - It is an optical storage media (a storage media that uses laser light to store data) that provides large amount of storage space for multimedia files.

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Introduction -- *DVD-ROM Drive*

- A DVD-ROM drive (a storage device for reading DVD disks) uses blue laser light (rather than the red laser light used by CD-ROM drives) to read information from the disk.
- Both sides of the disk can be used for storing files each side can have two separate storage layers.
- The data transfer rate of a DVD (the speed that data can be read from a DVD) is also faster than that of a CD-ROM.
- The capacity of a DVD is commonly measured in gigabytes (GB) (thousands of millions of bytes).

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- **Introduction -- *Audio Compression***
  - MPEG is a method of compressing and decompressing video signals.
  - MPEG stands for "Motion Picture Experts Group", an organization that develops standards for audio and video compression.

Writing

1. Share information on your knowledge in multimedia