

Animation -

- ① Major changes take place within the sequence called key frames while the assistants draw a number of frames in between key frames, a process called tweening.

② Use of Animation -

Entertainment industry, computer games, education, industrial and scientific applications.

③ Principles of animation -

- (1) Squash and Stretch
- (2) Anticipation
- (3) Staging
- (4) Flow-through and Overlapping Action
- (5) ~~Flow~~ Slow-in and Slow-out
- (6) Arcs
- (7) Secondary Action
- (8) Timing
- (9) Exaggeration
- (10) Appeal

- ④ Computer Based Animation - Based on keyframe concept, timeline, automatically to create tweening.

⑤ Animation Software -

Microsoft powerpoint & GIF Animator → elementary animation

More sophisticated 2D animation → Autodesk Animator Studio, Macromedia Director and Macromedia Flash

For 3D animation → 3D Studio MAX and Maya

- location of objects
- how they should animate.

3D Animation, ~~Animation file formats~~



## Compression -

- ① Lossy/lossless Compression techniques
- ② Image, Audio & Video Compression
- ③ MPEG Standards → high quality audio & video compression.
- ④ Multimedia Architecture
- ⑤ Multimedia Databases.

## Joint MPEG Standards (Motion Picture expert group)

MPEG-1 - Coded bit rate → 1.5 Mb/s.

MPEG-2 - Coded bit rate → 10 Mb/s.

MPEG-4 - very low bit rate system, low-quality video over internet connection

MPEG-7 - Advanced,

## Multimedia Databases -

- Allow searching of pictures using characteristics such as colour, textures.
- Allow searching for audio using certain programs.

## Lossless Compression → Planar RGB, TIFF & GZIP

- └ compressed upto 40-60% of original size.
- └ Methods - Entropy, Huffman Coding and Arithmetic methods, LZ  
Run-length encoding & statistical encoding.

## Lossy Compression → mp3, gif and jpeg.

- └ compressed upto 90% of original size.
- └ Methods - Perceptual coding, JPEg, MPEG, MP3.

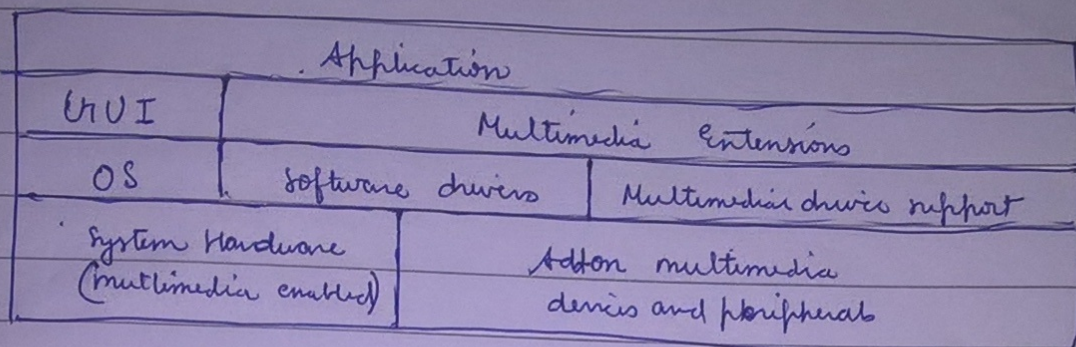
## JPEg Standards (Joint Photographic expert group)

video compression algorithm



Animation File Formats -

Director (\*.dir, .dcr), AnimationPro (fli, flc), 3D Studio Max (max),  
Superland and Director (pics), CompuLink (gif), Flash (fla, swf)

Multimedia Architecture -Multimedia Authoring tools -

- Card or page based tools
- Icon base, event driven tools
- Time base and presentation tools