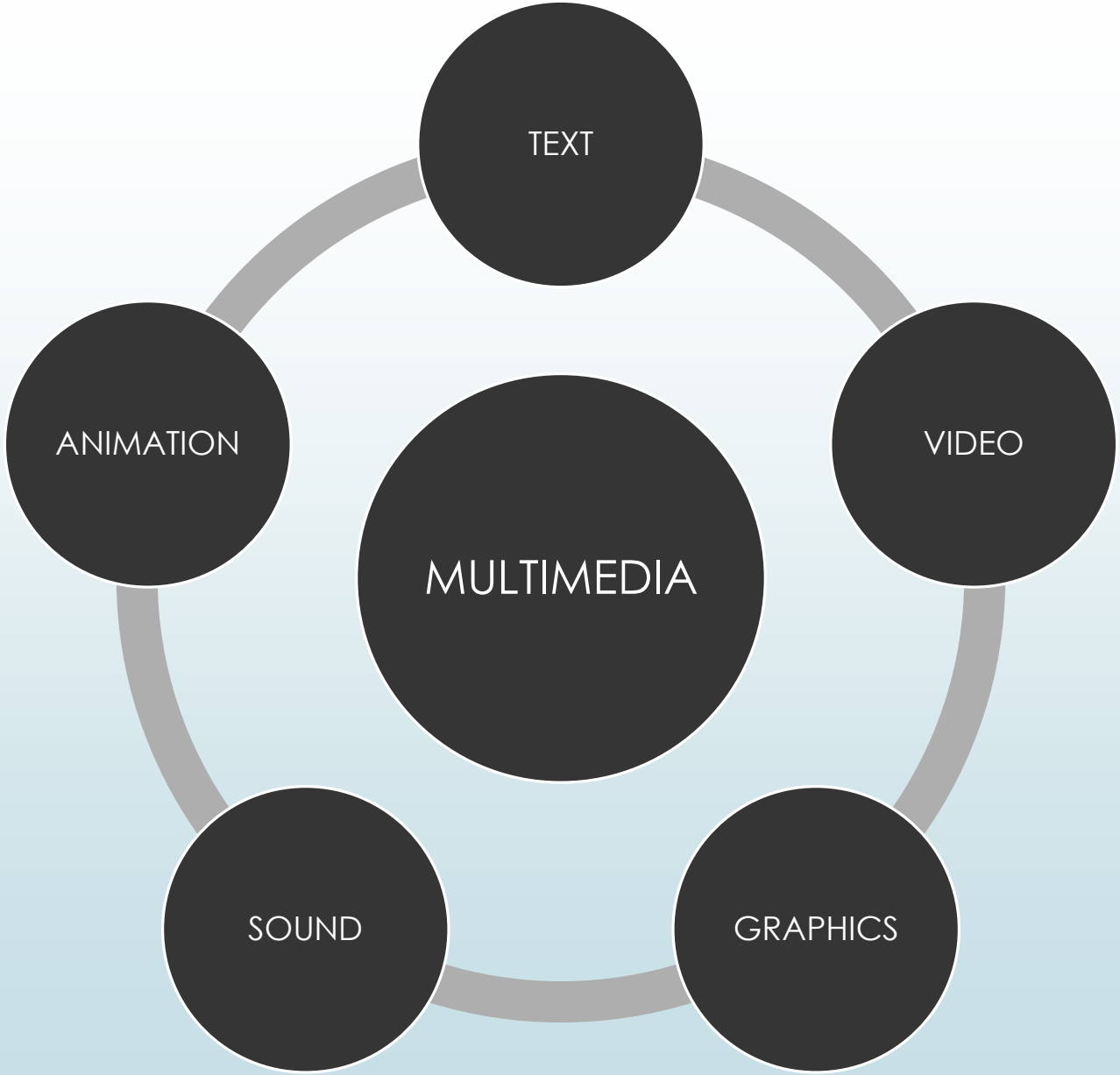
Multimedia components

Lecture 3

Multimedia refers to different type of data representation such as text, images, graphics, speech, audio, video.

Here we will view each one of them respectively.


TEXT
VIDEO
GRAPHICS
SOUND
ANIMATION
MULTIMEDIA

1- Text in Multimedia

- Words and symbols in any form, spoken or written, are the most common means of communication.
- Texts in the form of words, sentences and paragraphs is used to communicate thoughts, ideas and facts in nearly every aspect of our lives.
- Text is a vital element of multimedia menus, navigation systems, and content.

Text in Multimedia

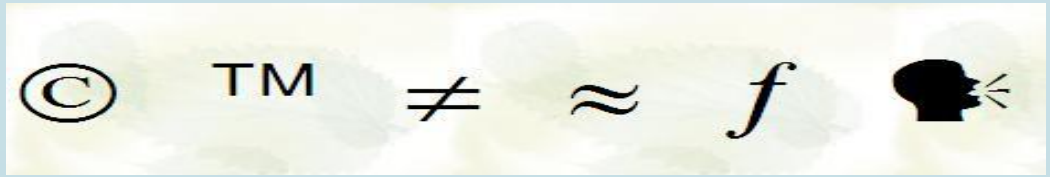
- Proper use of text and words in multimedia presentation will help the content developer to communicate the idea and message to the user, even a menu text is accompanied by a single action such as mouse click, keystroke or finger pressed in the monitor (in case of a touch screen).

Text in Multimedia

- Multimedia products depends on text for many things:
  - to explain how the application work.
  - to guide the user in navigating through the application.
  - deliver the application

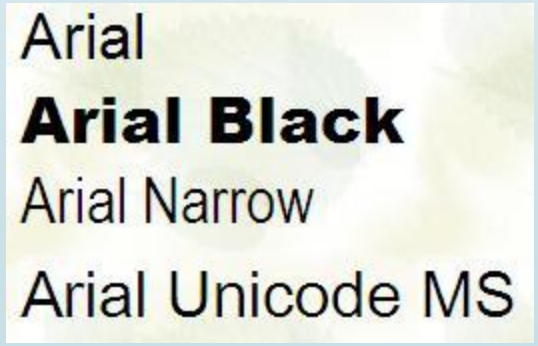
What is Text?

- Based on creating letters, numbers and special characters.
- Text elements can be categories into:
  - Alphabet characters : A – Z
  - Numbers : 0 – 9
  - Special characters : **Punctuation** [. , ; ‘ …] , **Sign or Symbols** [* & ^ % $ £ ! /\ ~ # @ ….]
  - Also known **Character Sets**
  - May also include special **icon** or **drawing symbols**, **mathematical symbols**, **Greek Letter** etc.



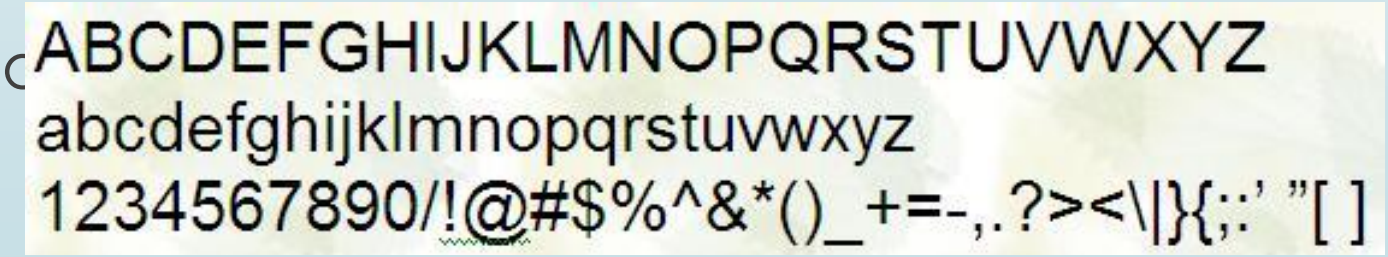
Fonts and Faces

- A 'typeface' is a family of graphic characters that usually includes many type sizes and styles.
- A **typeface** contains a series of fonts. For instance, Arial, Arial Black Arial Narrow and Arial Unicode MS are actually 4 fonts under the same family.



Fonts and Faces

- A ‘font’ is a collection of characters of a particular size and style belonging to a particular typeface family.
- Usually vary by type sizes and styles.
- This includes the letter set, the number set, and all of the special character and diacritical marks you get by pressing the shift, option, or co



Fonts and Faces

- The size of a text is usually measured in points. One point is approximately 1/72 of an inch i.e. 0.0138.
- The size of a font does not exactly describe the height or width of its characters. This is because the x-height (the height of lower case character x) of two fonts may differ.

The study of fonts and typefaces includes the following:

- *Font styles* - boldface, italic, underline, outline

- *Font sizes* - point, kerning, leading

- *Cases* – uppercase, lowercase, intercap

- *Serif versus Sans Serif*

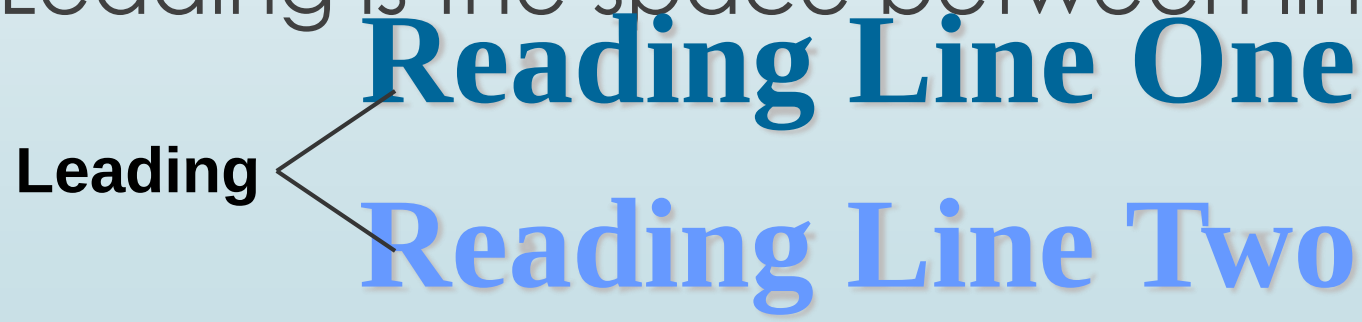
Font Styles

- The technology of font effects in bringing viewer's attention to content:
  - Case: UPPER and lower cased letter
  - **Bold**, *Italic*, Underline, superscript or subscript
  - Embossed or Shadow
  - ~~Strikethrough~~
  - b

Font Sizes

- Kerning is the spacing between character pairs

- Leading is the space between lines.



Serif	San Serif
Serif is the little decoration at the end of a letter stroke. Serif fonts are used for body text.	Sans serif fonts do not have a serif at the end of a letter stroke. These fonts are used for headlines and bold statements.

Times New Roman
Bookman
Rockwell Light
Courier New
Century

Examples of Serif fonts

Examples of San Serif fonts

Century Gothic
Arial
Comic Sans MS
Impact
Tahoma

(Serif Font)

(Sans serif font)

Font Editing and Design tools

- In some multimedia projects it may be required to create special characters. Using the font editing tools
- it is possible to create a special symbols and use it in the entire text.
- Macromedia Fontographer. It is compatible with both Macintosh and Windows platform.
  - It can be used to develop PostScript, TrueType, and bitmapped fonts.
  - It can also modify existing typefaces and incorporate PostScript artwork.

Images

Images are a media type displayed as visual information. They can be drawings, paintings or photographs.

Images are used to create interest and provide information. Photographs and other types of graphical data are designed specifically for display.

An image on a screen is made up of dots called ***pixels***.

A pixel is the smallest part of the screen that can be controlled by the computer or other device.

The total number of pixels on a screen is called its ***resolution***.

What is Animation

What is the Animation?

Animate means 'to bring to life'

What is the Animation?

It is a process to arrange the pictures or objects in a way that will create the illusion of they are moving and alive.

Animation is the process that graphics or images are given a motion according to a certain scenario.

Animation is achieved by showing sequential images that minimally differ from each other in succession rapidly.

This is realized by utilizing the illusion of recalling the previous image in human eye.(***persistence of vision) (Iconic memory)***

What is the Animation?

What is the Animation?

What is the Animation?

Terminology

What is the Animation?

Proper Definition for **Animation:**

Animation is the process of creating a collection of sequential images and playing them back quickly to create an illusion of movement, according to a certain scenario.

Animator

The one who deals with animation job.

Aspect Ratio

The relationship between the width and height dimensions for any scene, frame or film format. Television ratio is 4:3 and widescreen ratio is 16:9.

2D Animation and 3D Animation

2D : two dimensional animation
3D : tree dimensional animation

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2D Animation and 3D Animation

2D animation

Can be created by computer or hand-drawn.

3D animation

Can only be created by computer.

CAD

Computer Aided Design

CGI

Computer Genarated Imagenary

Background

The background is the artwork, or decor, against which the animation takes place.

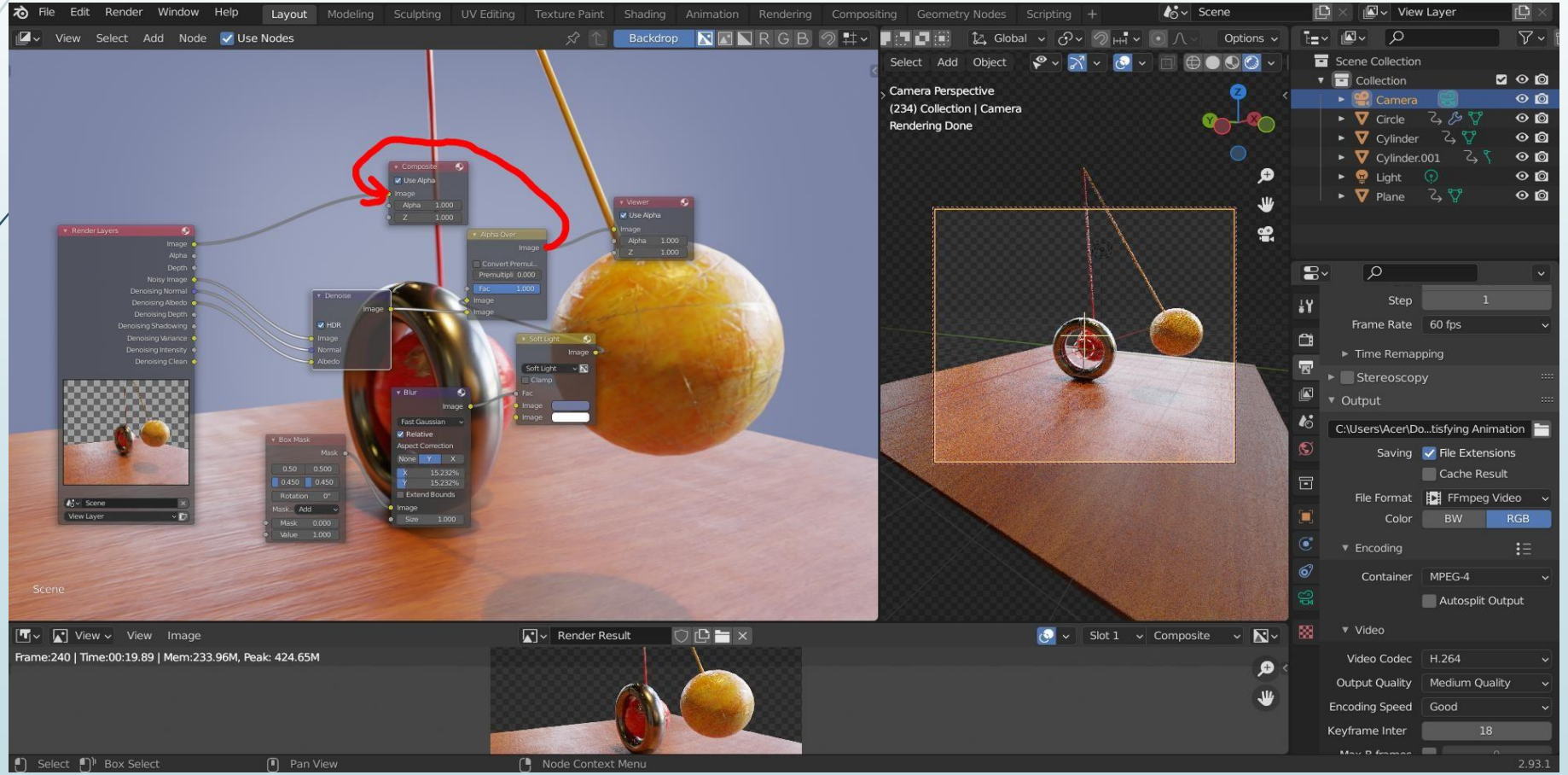
Background

Compositing

Compositing is the action of incorporating all of a scene's elements to create the final result prior to rendering. For example, the compositing artist will import all the animation sequences, background, overlays and underlays in the scene and position them correctly. Finally, the animator will create all the computer-generated effects for the project.

Shortly: To combine different image layers in one

Compositing



DPI

Express the resolution. Dots per inch (**DPI)** is the standard measure of resolution for computerized printers.

It is sometimes applied to screens, in which case it should more accurately be referred to as *pixels per inch*.

Either way, the dot is the smallest discrete element making up the image

Frame rate

The frame rate is the speed at which the frames are played. They are generally calculated by frame per second. For example, a scene could be played back at 12, 24, 25, 30 or 60 frames per second or any other number.

The term applies equally to computer graphics, video cameras, film cameras, and motion capture systems.

Frame rate is most often expressed in frames per second **(fps)**

Environment

Factors that make up all details of the animation such as texture, light, shadow

Environment

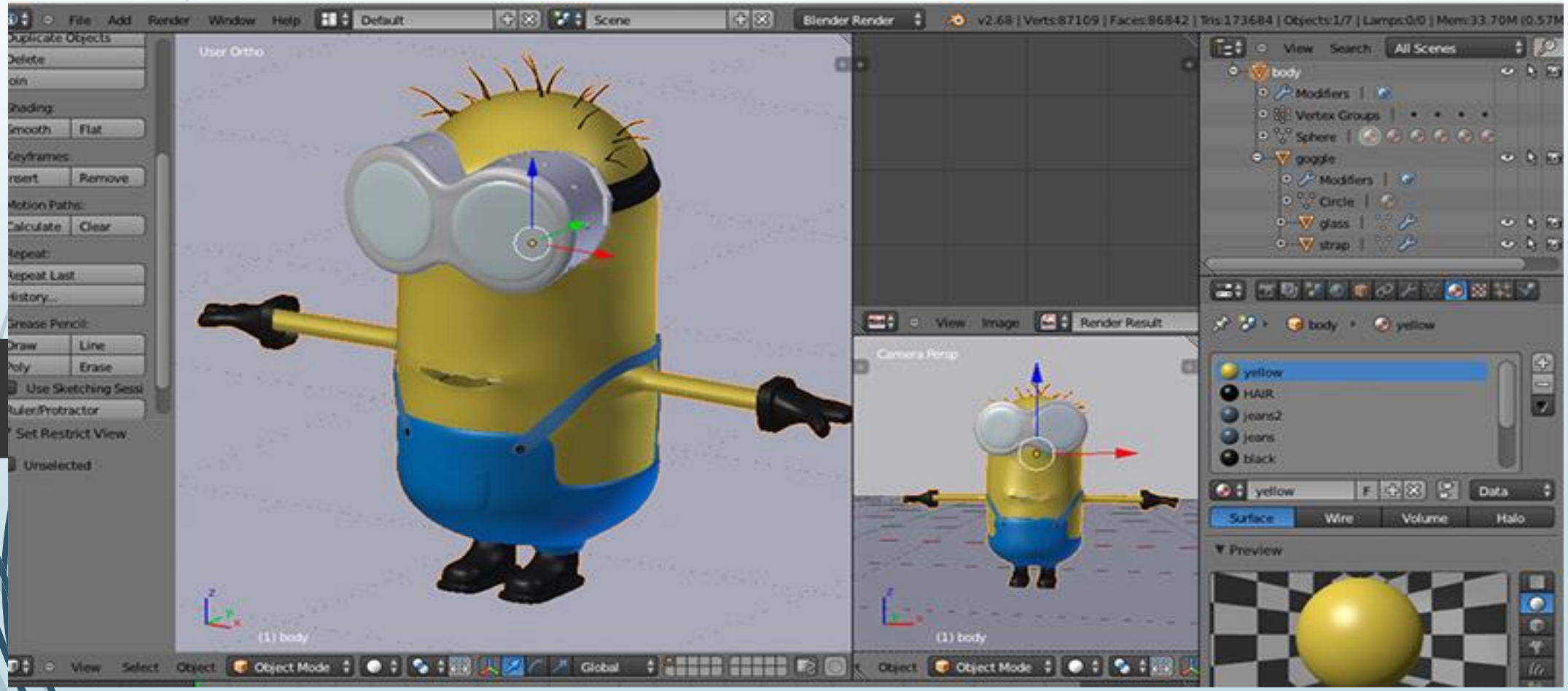
Effects

Elements that makes animation more realistic and adds more aesthetic vision to it.

Modeling

Visualization of an object or character through the associated computer software.

Modeling


File Add Render Window Help
Default
Scene
Blender Render
User Ortho
(1) body
View Select Object
Object Mode
Global
View Image
Render Result
Camera Persp
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Object Mode
View Search All Scenes
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Modifiers
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Sphere
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Data
Surface
Wire
Volume
Halo
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Keyframes:
Insert
Remove
Motion Paths:
Calculate
Clear
Repeat:
Repeat Last
History...
Grease Pencil:
Draw
Line
Poly
Erase
Use Sketching Sessi
Ruler/Protractor
Set Restrict View
Unselected

Render

The final step when animating by computer.

-The process of calculating the final images .
-Transforming the project into a movie or single-frame picture.

Animation Techniques

Animation Techniques

- Traditional (hand drawn, cel etc.)
- Cut out
- Stop Motion
- Rotoscope

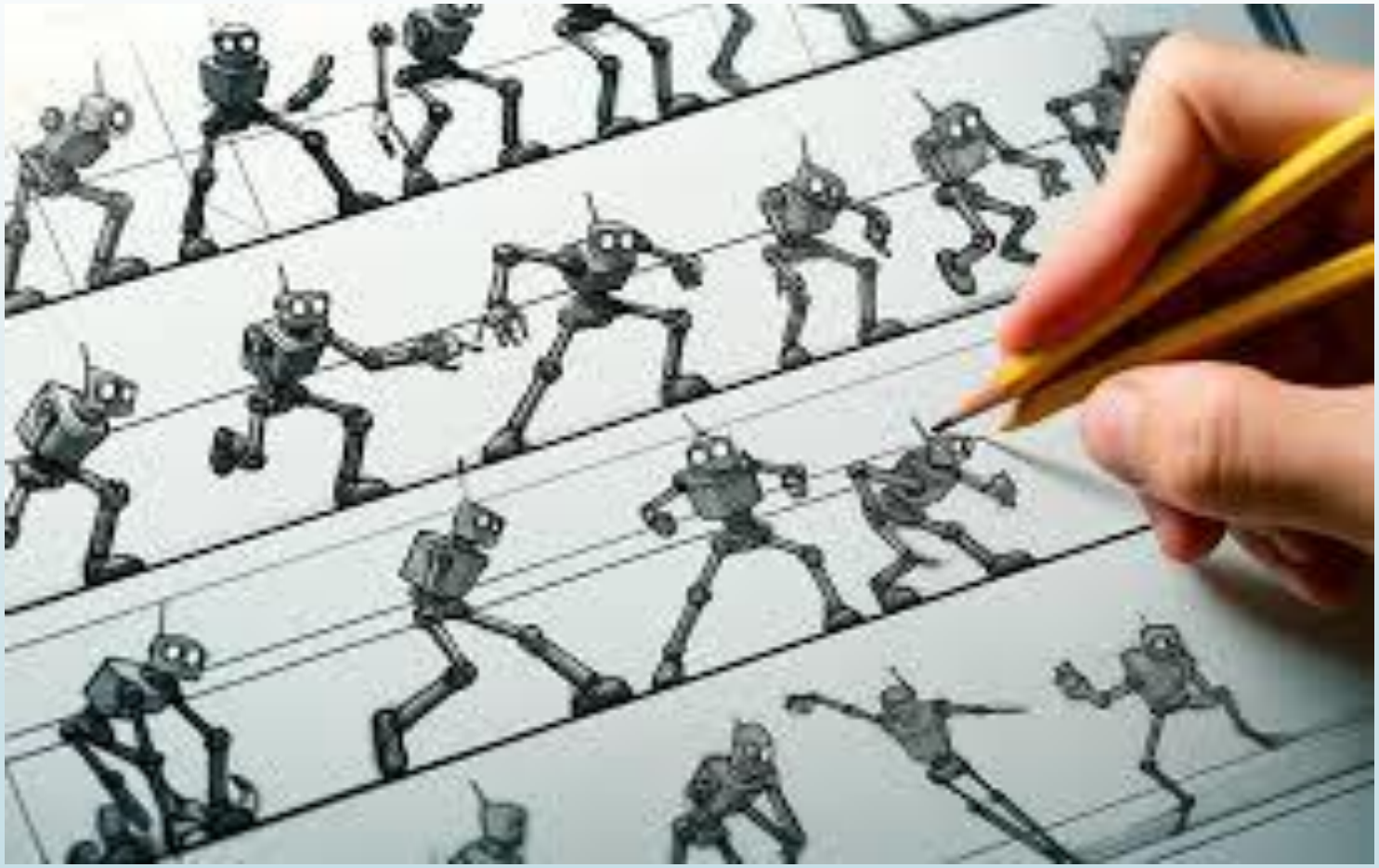
Animation Techniques

- Traditional (hand drawn, cel etc.)

In this method, the animation is drawn by sequential frames. on a sheet of paper and transferred into film by using special equipment. Nowadays drawings and coloring can be done via computer software. However, even if it was made by the computer, this animation is called the traditional method because it is drawn by sequential frames.

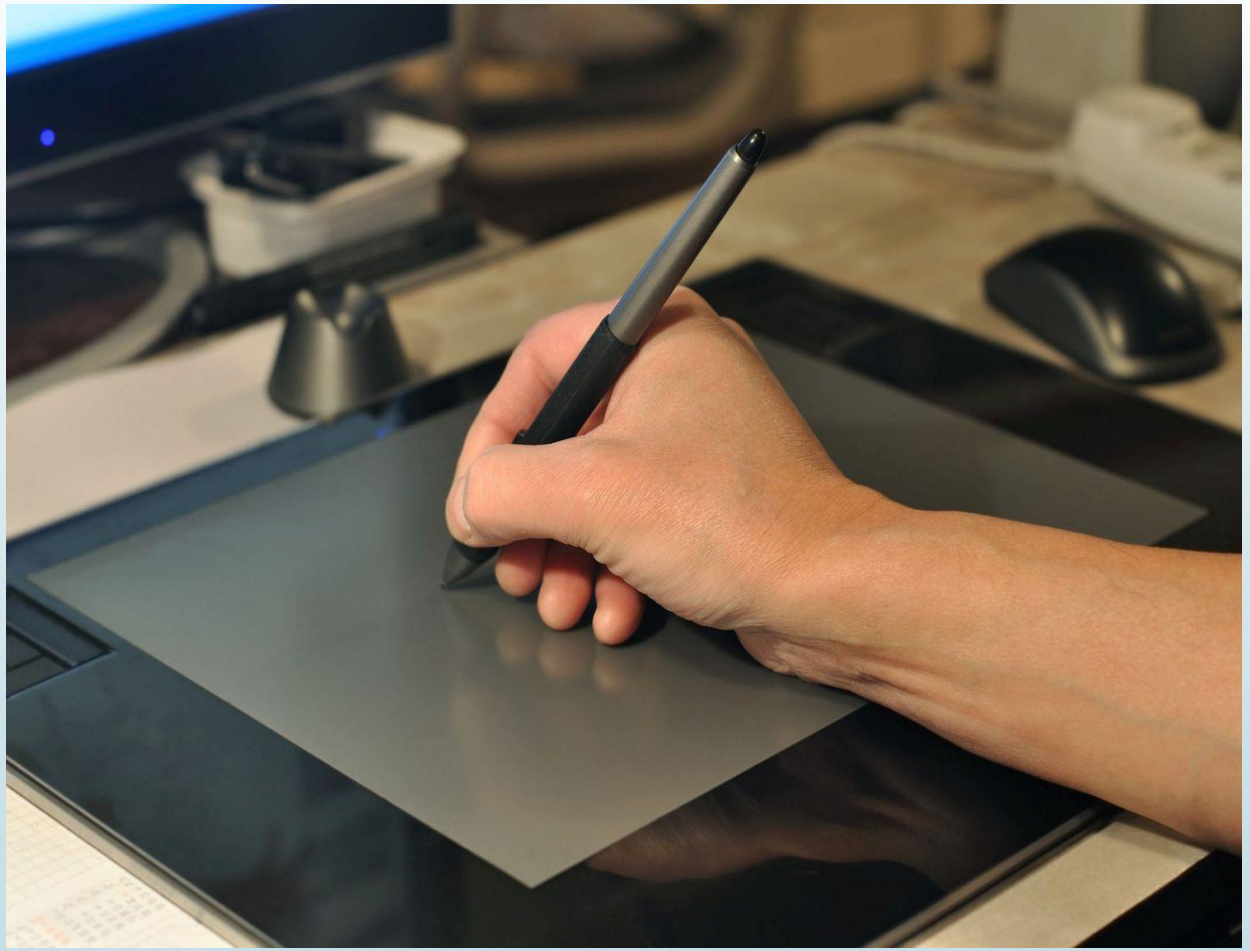
Animation Techniques

Traditional (hand drawn)



Animation Techniques

Traditional (computer)



Animation Techniques

- Cut out

Cut Out animation is an animation created by moving the characters made of paper or fabric in frame-by-frame mode. Cut-out animation can be done by computer or traditionally using paper or fabric.

Animation Techniques

Cut out

Animation Techniques

- Stop Motion

In this technique, it is applied small changes to the object to be animated in each square, and the film is taken. It is the oldest known animation method.

Animation Techniques

Stop Motion

Animation Techniques

-Rotoscope

In this method, motion is produced by drawing on the actual video image. This method appears to be used both to produce visual effects and to produce animated films.

Animation Techniques

Rotoscope visual effects

Animation Techniques

Rotoscope to produce animated films.