

Patrician College of Arts and Science

Department of Electronic Media

Graphics and Animation : *An Intro*

SAY5C

ODD Semester

Presented by
Paulson Santhosh Nithyarajan J.L



CONTENTS :

COMPUTER GRAPHICS

AESTHETICS AND DESIGN

CG APPLICATION AREAS AND EQUIPMENT

CG STANDARDS AND FORMATS

MEANING OF GRAPHICS

- The term GRAPHICS is derived from the GREEK word and it means that to DRAW.
- Production of visual statement on some surface.
- Drawing as on wall, Canvas, Pottery, Computer Screen, Paper, stone and Landscape.
- It relates to creation of signs, Character, logos, graphs, Drawing, Line art, Symbols and Geometric Design.

Meaning of GRAPHIC DESIGN

- It is the Art of Combining the TEXT, PICTURES or IDEAS in the application.
- The Application depends upon the Web design , Publication , Web site, It depends upon the format characteristics of fine art and creativity.

Components of COMPUTER GRAPHICS

- Visual Art: Work with the visual in nature from photography , Traditional art, Computer Generated art.
- Typography: Art of type the text in the design which include the selection of the type of the text, Point size, Length of the line, Leading the Line and the space between the lines.

Page layout: Arrangement of the element on the page which has to be given the Highest Priorities and the lowest priorities.

Interface Design: Web design with the software and it has to be interactive

WHAT IS VECTOR GRAPHICS

A vector graphic is made of lines and curves defined with some mathematical definition (Magnitude & Direction) called as Vector.

The Vector graphics are saved and printed in Postscript:

Post script is a computer language for describes the appearance of a printed page (it treats the images, includes the fonts, as a collection of Geometric objects). Postscript was developed by ADOBE and has become an industry standard for printing and imaging.

Post script fonts are called as outline fonts where the outline of each character is defined. Postscript fonts are also called as scalable fonts because the size can be changed.

Vector graphics are resolution Independent It means that they can be scaled in any size and printed at any resolution without losing any detail or clarity.

It is highly recommended to use the vector format for LOGOS as the edges will always appear smooth, irrespective to the size of the image.

WHAT IS RASTER GRAPHICS

A raster graphics is made of grid of small squares known as PIXELS. It corresponds bit for bit with an image display on the screen.

A colored Raster image : The colour of each pixel are individually defined with bits of eights (8 BITS make 1 BYTE) and every bit has three colour **RED, GREEN** and **BLUE**.

Photographs are in Raster graphics which show the shades of colour. Photoshop is the recommended software to create a High quality of Photos images.

Raster images are resolution dependent as they contain fixed number of Pixels and amount of information in each PIXEL (That is COLOR DEPTH in each pixel). For the Print format if the Resolution is less than 300DPI then the edges will look rough and not with a fine quality of the image.

PRINCIPALS OF AESTHETIC DESIGN

A- Hierarchy , setting priorities

What is the important thing visually in the layout.

Is it the most attractive, most important or most convincing part of the messages.

What is NEXT? And what is the LAST?

B - Emphasis and Focus

The Visual expression of Hierarchy.

Once we know that what has to be most important we has to use the visual emphasis to focus the attention.

By taking the various factors like the size, position , value and color.

C - Contrast

Contrast is the tool of emphasis.

Which will set that the hierarchy, focus attention and create the real feel or the effect and create drama.

Contrast varies by (BIG/SMALL,THICK/THIN,CROWDED and COLOUR)

D - Tension

Throwing things off a little.

We create tension by manipulating relative position.

Place things little too close together.

Too much of contrast in their Visual Weights.

Tension makes the design Aesthetics.

E - Balance

Creating a gravitational axis.

By opening dense detail within the open space.

Giving the heavy elements with the lighter ones.

F - Rhythm

Pattern and variety.

Pattern the mind makes sense of it.

Variety gives relieves the eye.

In case of Multipage work the rhythm is creates then pacing across the whole.

G - Flow

Leading the eye across the surface.

H - Depth

Leading the eye beyond the surface.

I - Scale

The illusion of the size.

The size of the elements relative to one another is important.

The Size has to be considered to the FORMAT.

J - Resolution

Resolution is measured in DPI (Dot per Inches).

The Resolution factor of the Quality Created in the design (the layout and the image).

The resolution for the print format is 300 DPI and the monitor resolution is 72 DPI in case of the web design.

K - Movement

The illusion of the physical interaction among the element.

Movement is created with the effect to the individual element in the linear format.

Movement can have an emotional or physical impact on the Viewers.

CG APPLICATION AREAS AND EQUIPMENT

Application areas

Digital Art, Education, Graphic design, Video games, Computer aided design, computer simulation, Computational Sciences

Equipment

The high end system with ADOBE software for the best design

The web design can be done in 3ds MAX

CG STANDARDS AND FORMATS

CG STANDARDS

In the standards it tell us about

The data or the file is created then they have to be compressed for the requirement of the format as (PRINT or WEB PAGE DESIGN) they are compressed to a particular to standard of format

The viewers when they are viewed in the monitor as a WEB PAGE the resolution has to be 72. When they go for the print format then the resolution has to be 300. The Resolution play an important factor in the standard of the Computer graphics

CG FORMATS

Once the layout is completed the data has to be compressed according to the requirement of the Viewers.

The export of the data is done and the requirement of the FORMAT is Identified

The common graphic file format are **GIF,JPG and PNG.**

BIT MAP: IT is a collection of BITS that form an image. The image consist of matrix of individual DOTS or PIXELS.

Graphic images are been processed by the computer which are divided into two categories as BIT MAP FILE and VECTOR GRAPHICS FILE

The Scanned images are BITMAP IMAGES.

Types of BITMAP images: Line Art, Grayscale Images, and Full colour images.

Line art: Images that contain only two colors usually Black & White.

Gray scale image: They contain various shades of Grey as well as Black & White.

Full colour images: Images that are created with the colour space (CMYK & RGB) .

CMYK format for Print format & RGB for Computer format.

GIF: Graphic Interchange Format

Graphic Interchange Format was developed in 1987.

The format is up to 8 Bits per pixel for each image, and allowing up to 256 different colors.

The colour is limited as it is chosen from 24 – bit RGB colour for each frame. Since the color limitation makes less suitable for reproducing the color from the photographs. It is well used for LOGOS, HEADING, BUTTON, BORDERS, SIMPLE DIAGRAM.

It is lossless compression (Uncompressed Bitmap file is 28KB and compressed is 3KB)

PNG: Portable network graphic

PNG is a raster graphics file format that was created and replaced for of GIF where the image compression format on the internet was into consideration.

For the LOGO Uncompressed image :28KB and Compressed image is 2.7KB.

The quality is fine enough with respect o the compression than GIF & JPEG.

PNG has got additional feature is Transparency that is the image is given a smooth blending over the background.

JPEGE: Joint Picture Expert Group

Images produced by digital photography.

It is commonly used method of lossy Compression which means that the original image information is lost and cannot be restored which may affect the quality of the Image.

The compression depends upon the Storage size and the image quality.

Here we Quantization is applied where a large number of Pixels are converted into smaller number of scale.

Some of the graphic adapters

MGA: Monochrome Graphic Adapter – Allows 2 color adaptor

CGA: Colour Graphic Adaptor – First color computer display standard. Allows 4 color adaptor

EGA: Enhanced graphic Adopter – 16 colors and higher resolution

VGA: Video Graphics Array – with high resolution, display photo realistic images & Movies.



Thank you

<https://www.patriciancollege.ac.in/>