

COMPUTER GRAPHICS & ANIMATION

SEMESTER - IV

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WELCOME TO THE WORLD OF GRAPHICS



Video Games

Design

Digital Art

Animation software

Web design

Interface

Computational
Physics

Simulation

Virtual Reality

Education

CAD

Scientific
Visualization

Computer Aided-
design

Graphics Design

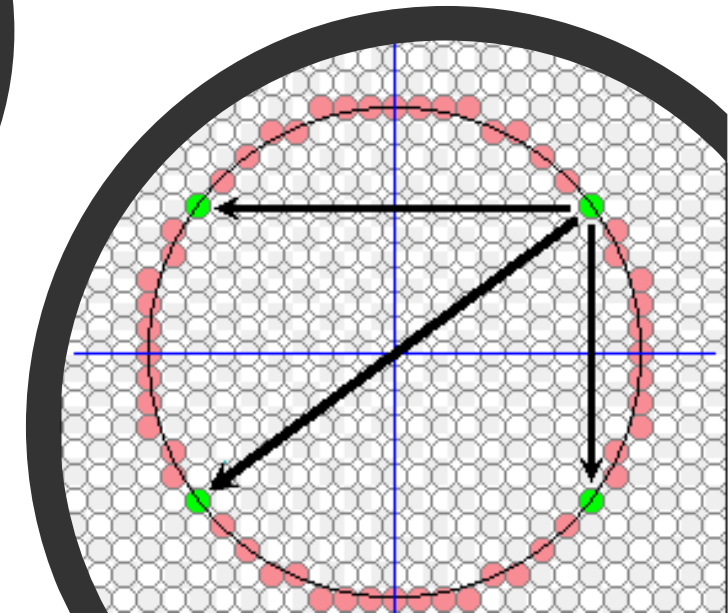
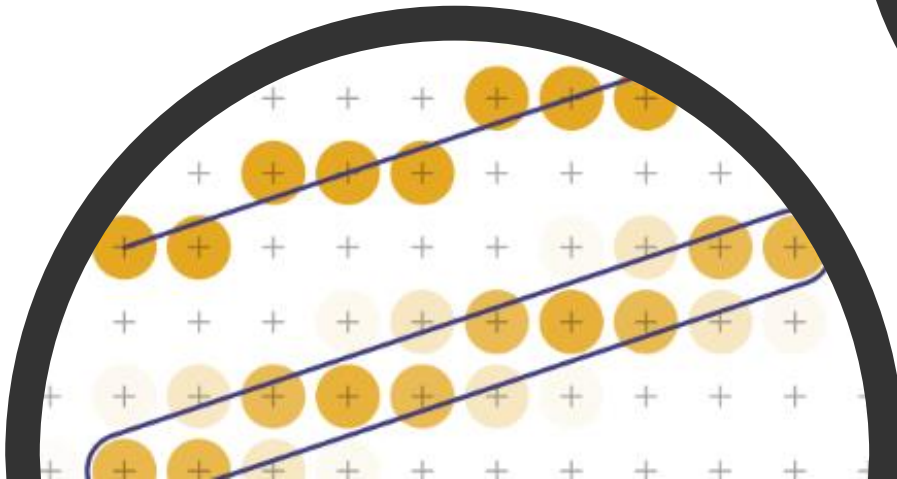
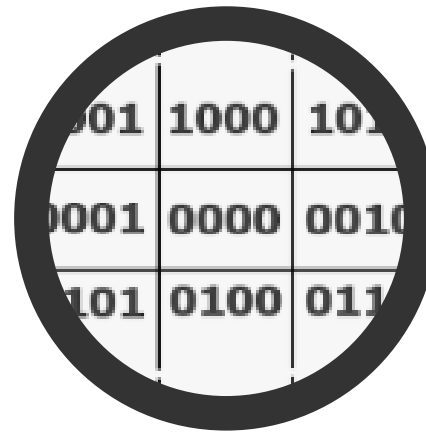
Information
Visualization

Computational
biology

Unit 1

Intro to Computer Graphics

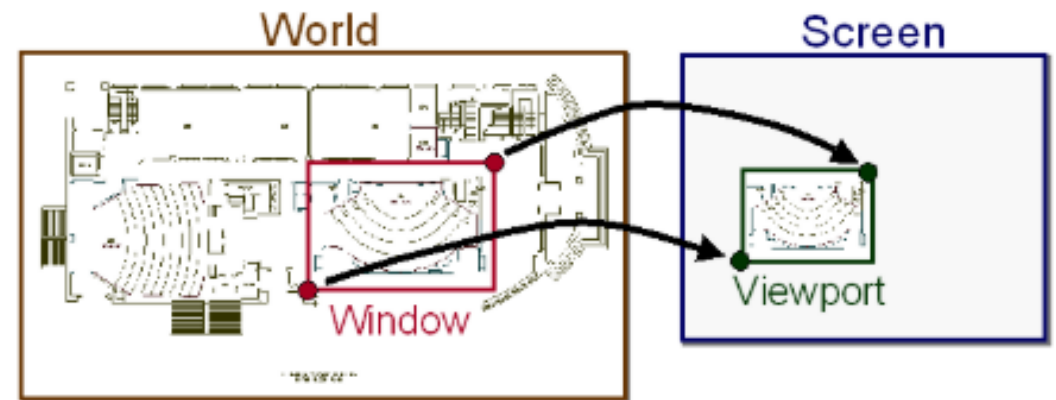
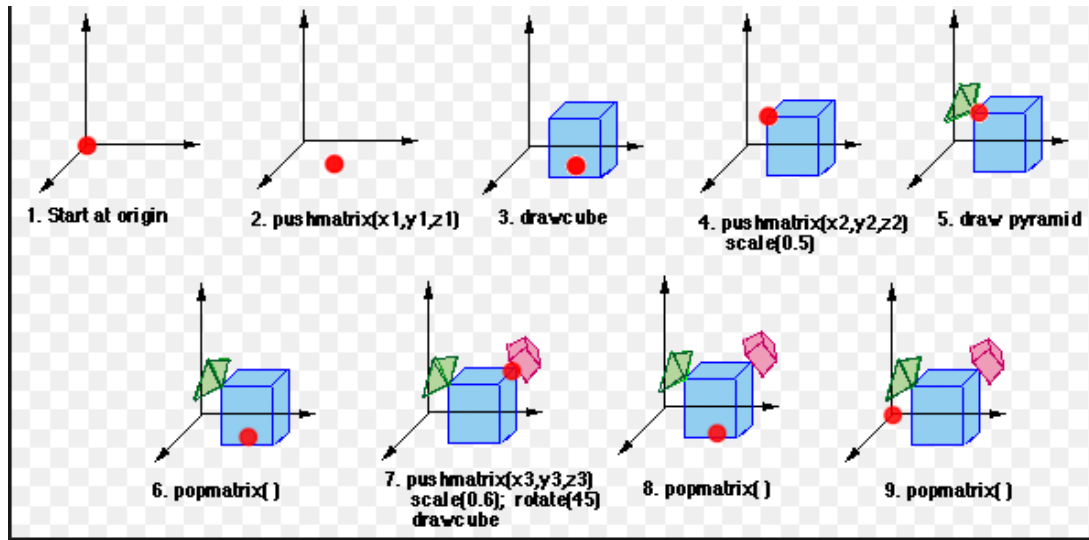
- Input / Output Devices
- Line drawing Algorithm
- Circle Drawing Algorithm
- Line Clipping Algorithm
- Polygon Clipping Algorithm

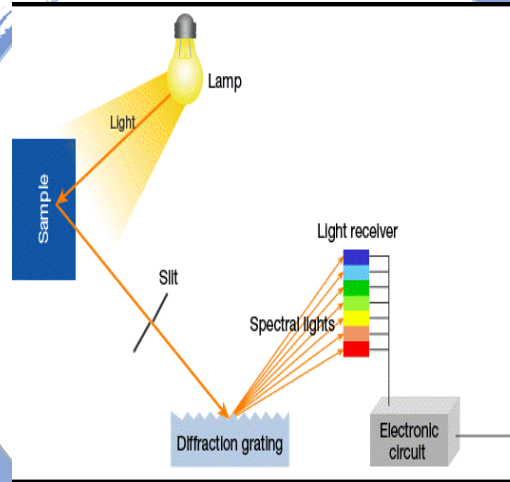
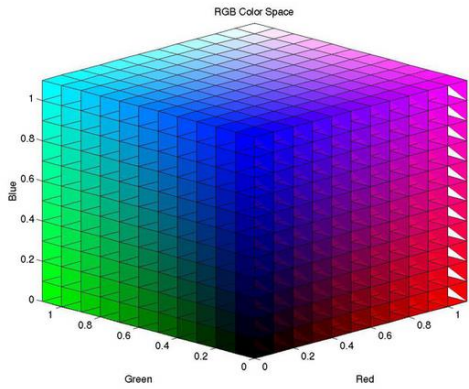


Unit 2

2D/3D Transformation

- 2D Transformation
- 3D Transformation
- Projections





Model
ling
Coordi
nates

Modelling
Transformation

World
Coordinates

Viewing
Transformation

View
Coordinates

Projection
Transformation

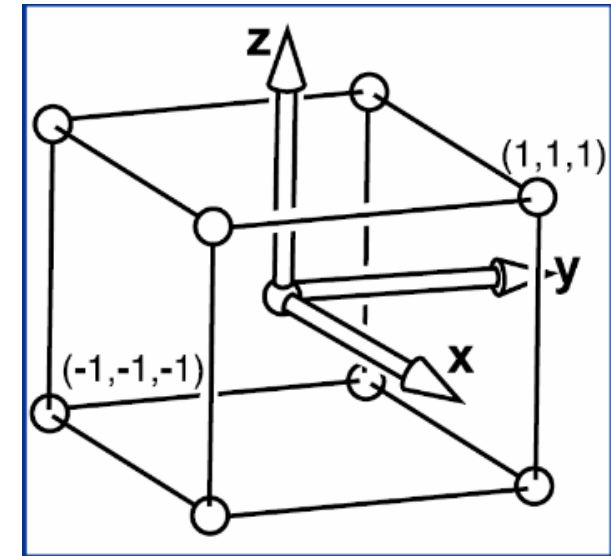
Projection
Coordinates

Workstation
Transformation

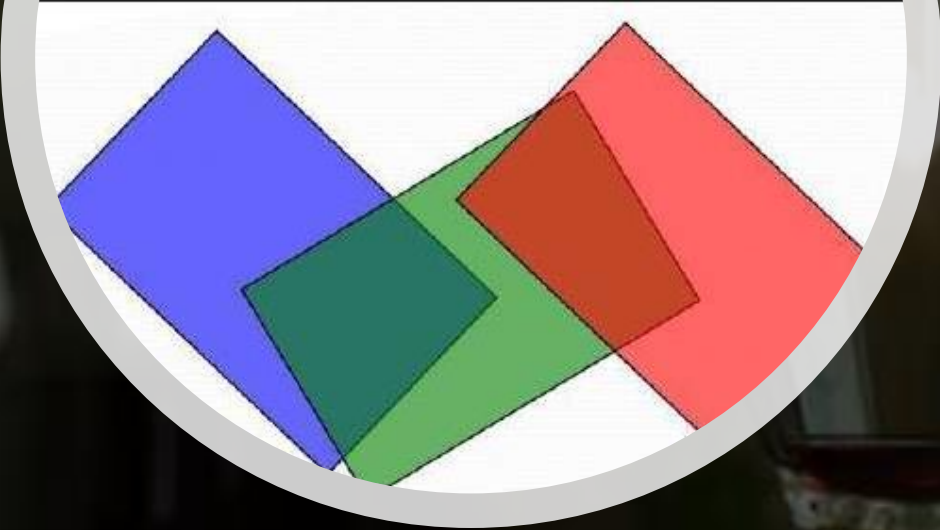
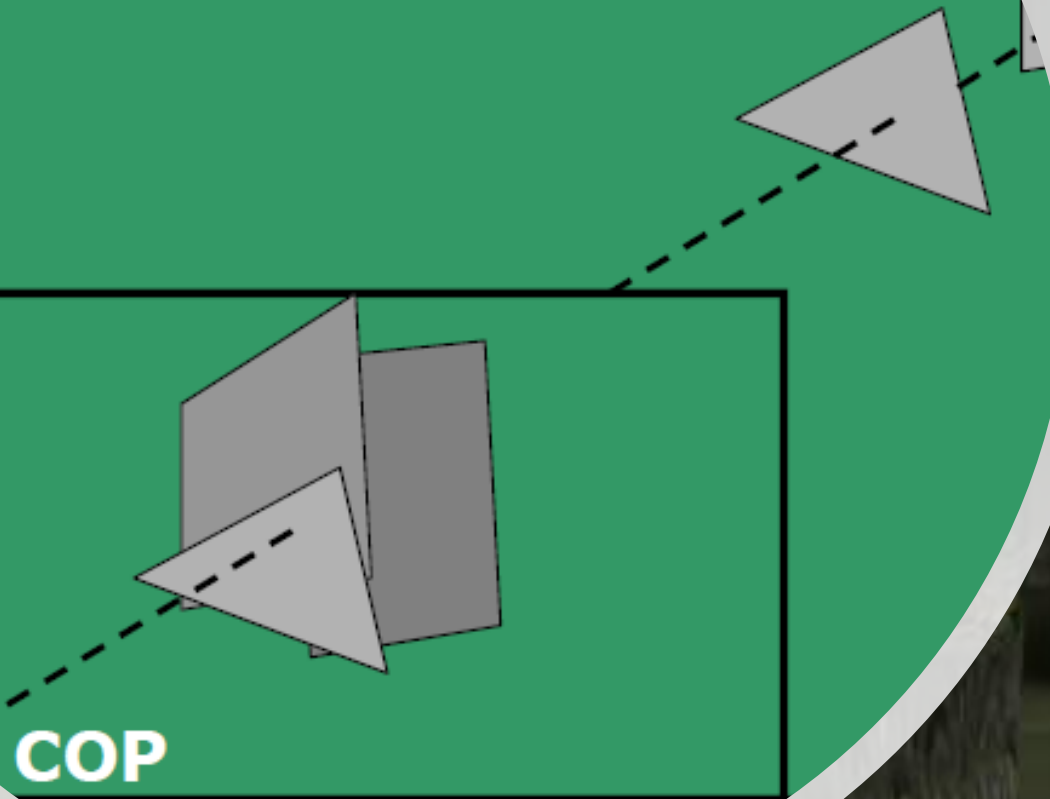
Device
Coordinates

Unit 3

Viewing in 3D, Light, Color



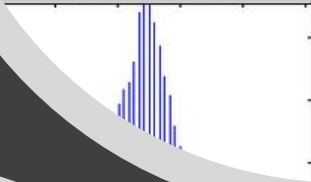
Depth-buffer
or
Z-buffer method



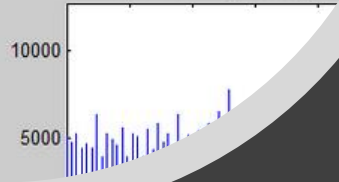
Unit 4
visible surface
determination



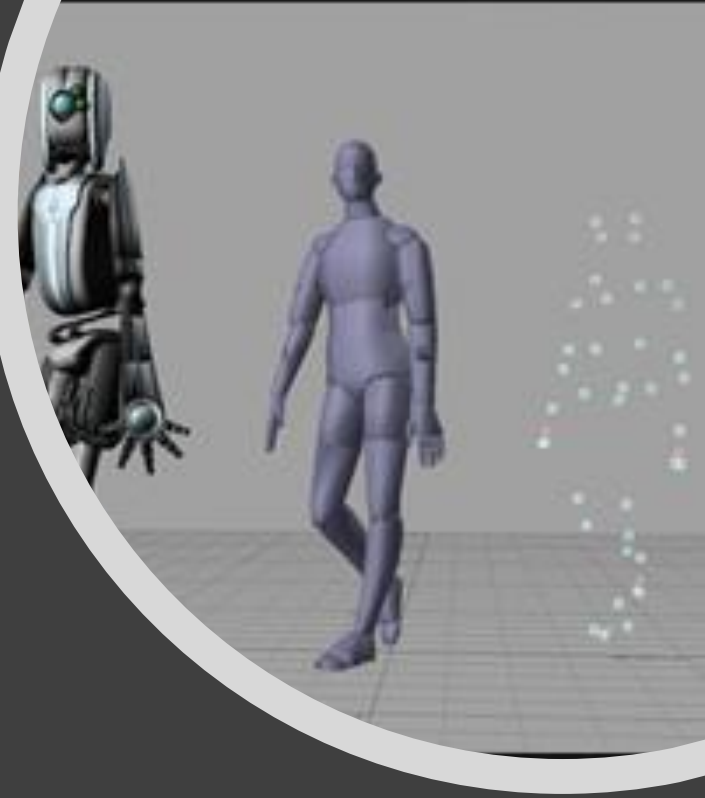
Original Image Histogram



Equalized Image Histogram

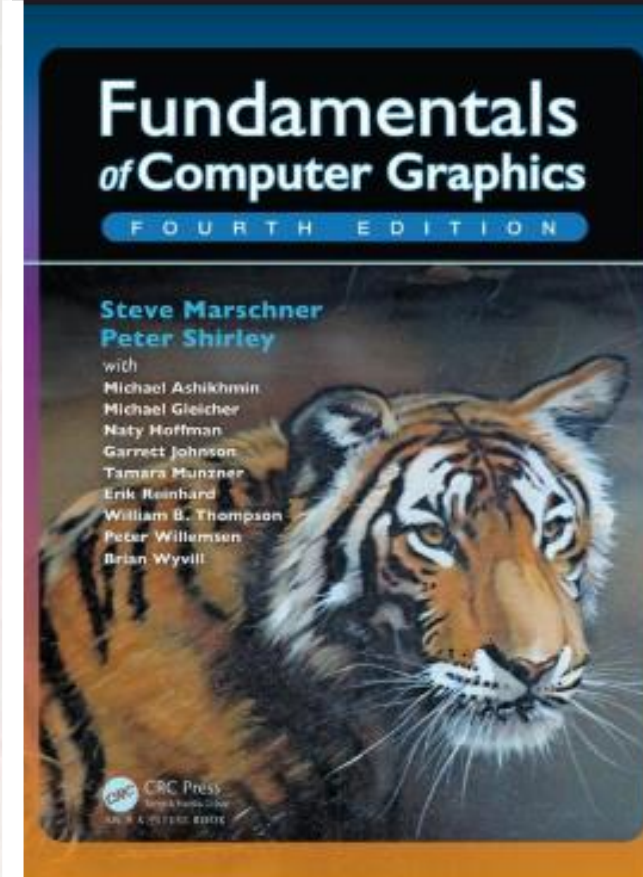
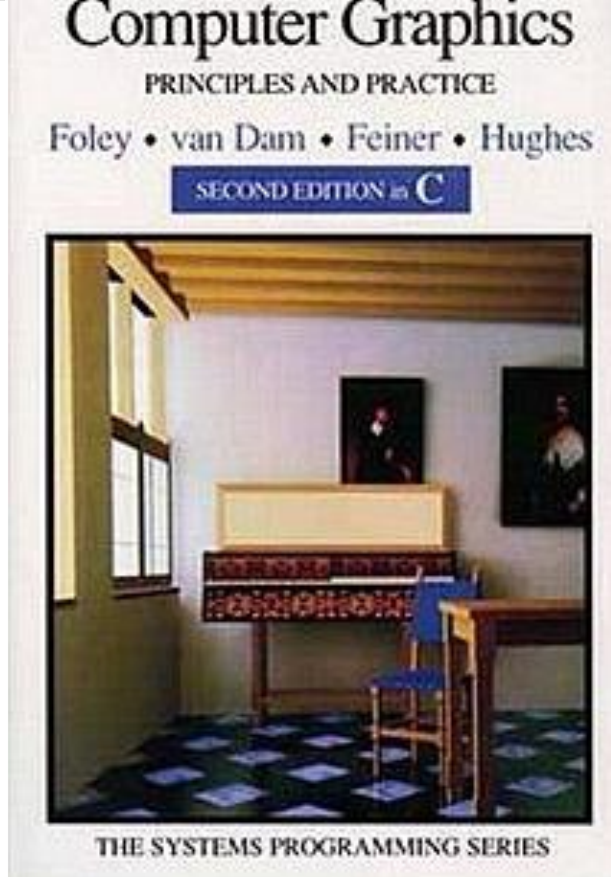
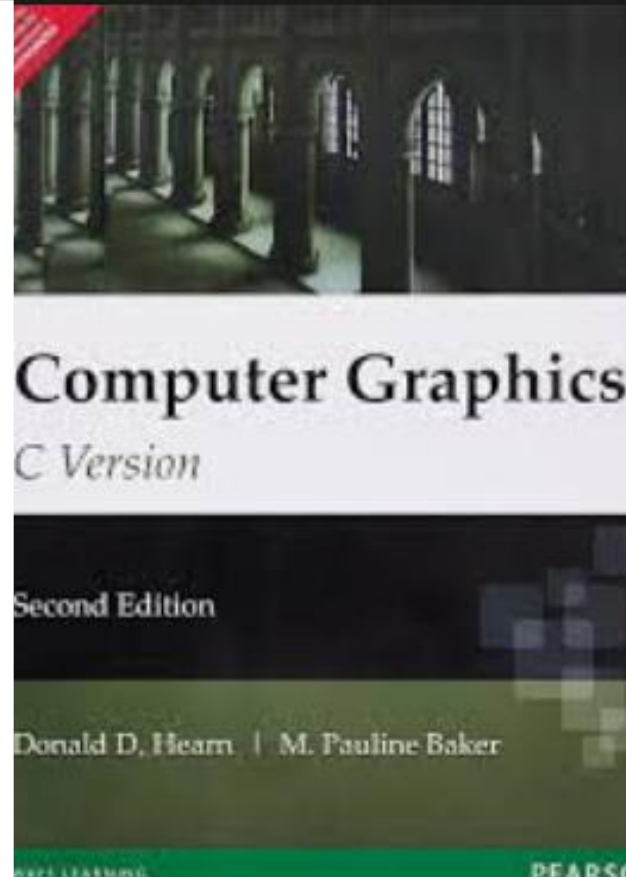
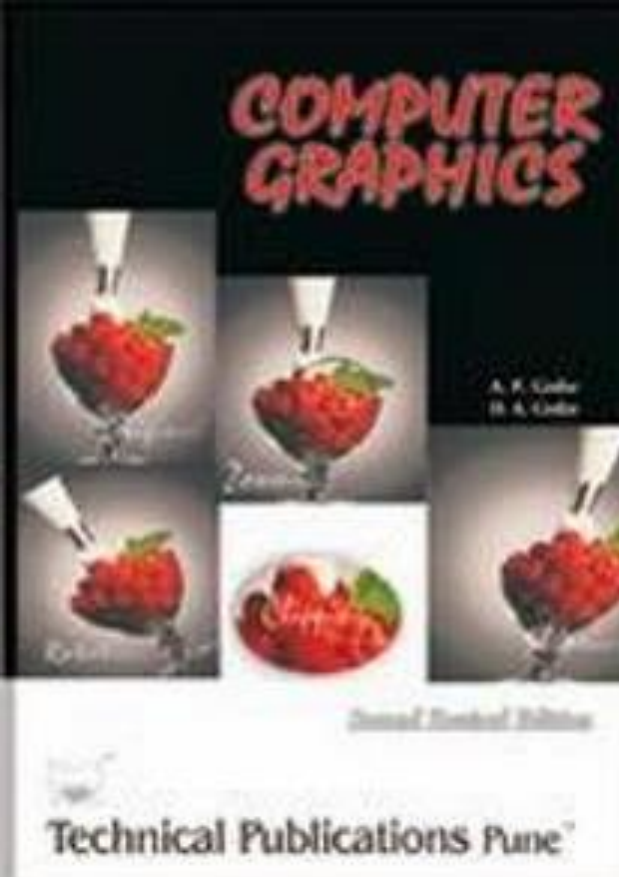


Curve Deformation

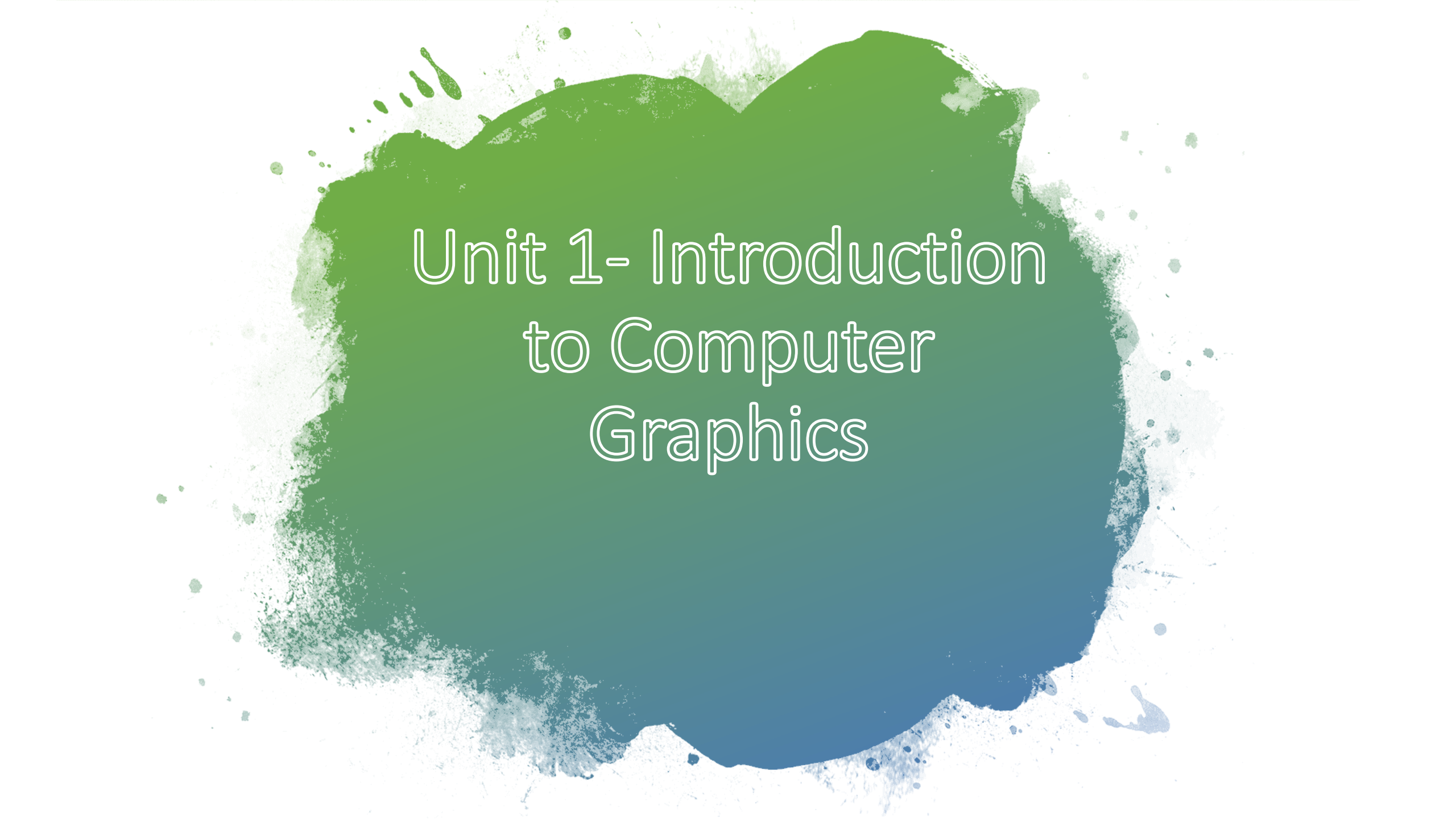


Unit 5

Computer animation



Reference Books



Unit 1- Introduction to Computer Graphics

Chapter 1

Introduction

Applications &
Software

Graphics Devices

- Input Devices
- Active & Passive Graphics Devices

Display
Technologies

Storage Tube
Graphics display

Calligraphic
Refresh Graphics
Display

Raster-Refresh
Graphics Display
(Raster-Scan)

Cathode Ray Tube

Color CRT Raster
Scan Display
Processor

LCD Displays

Computer Graphics

Field of science concerned with digitally synthesizing and manipulating the visual content.

creating,

Storing

Displaying

manipulating images



Focus on mathematical & computational foundations of image generations.



Manipulation of visual & geometric information using computational techniques.

Application of Computer Graphics

Education and Training

Visual and Special effects

Digital art

Video games

Computer aided design

Medical imaging

Printing Technology

Entertainment

Presentation Graphics

- Financial Reports
- Statistical Reports
- Mathematical Reports
- Scientific Reports

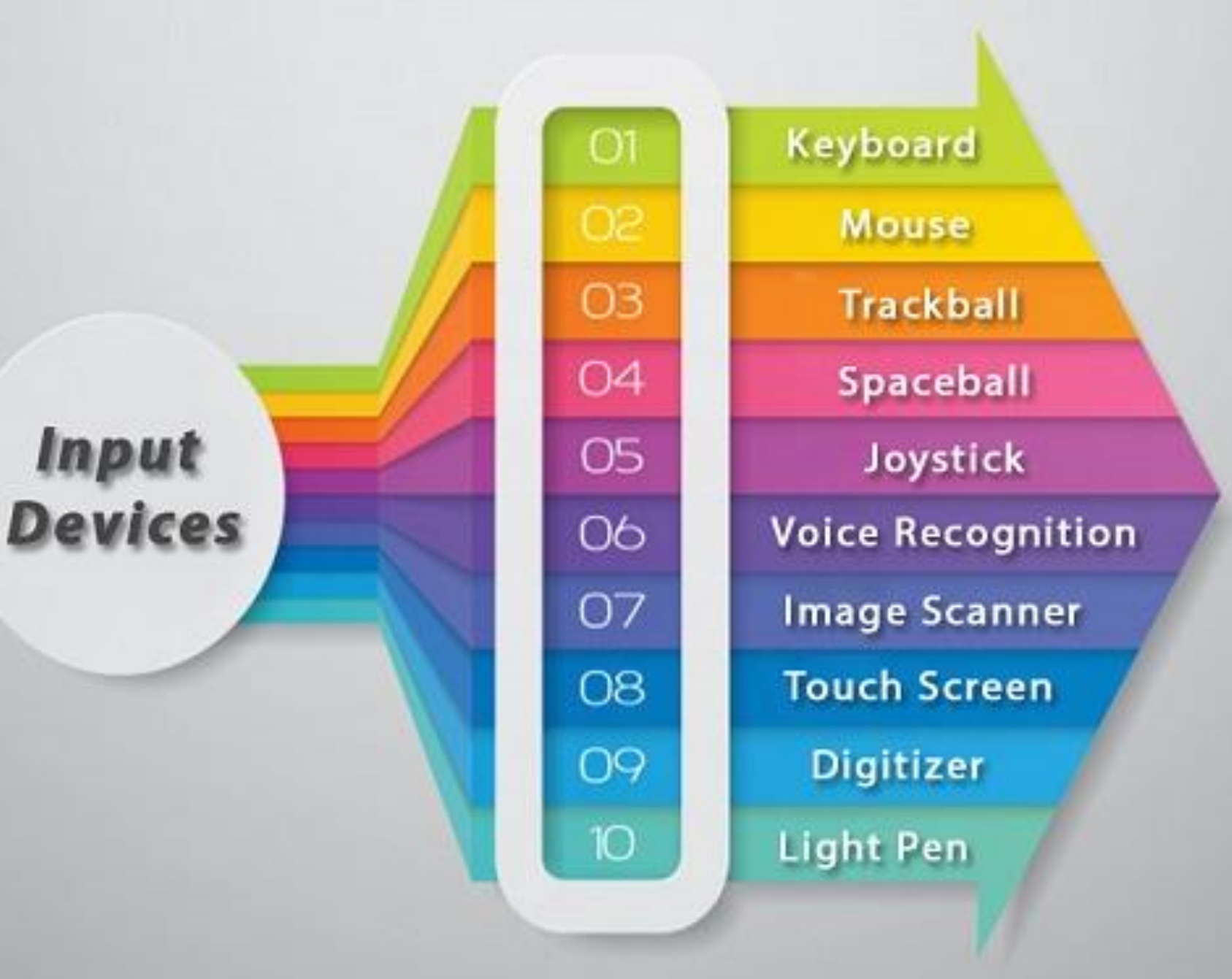
Use of Computer Graphics

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graph TD; A[Use of Computer Graphics] --> B[Generative Graphics  
(used to create  
line,circle,ellipse)]; A --> C[Image Analysis  
(used to generation  
of pictures,images)]; A --> D[Lognitive  
(used for photographic  
images)];
```

Generative Graphics
(used to create
line,circle,ellipse)

Image Analysis
(used to generation
of pictures,images)

Lognitive
(used for photographic
images)



Input devices

- **H**ardware that is used to transfer transfers input to the computer.
- **d**ata can be in the form of text, graphics, sound, and text.
- **O**utput device display data from the memory of the computer.
- **O**utput can be text, numeric data, line, polygon, and other objects.



Quiz

https://forms.office.com/Pages/ResponsePage.aspx?id=LKs7Hkn_bE2CeIA_X5v2FnHNThoF6SyhPvzy47VbBg-pUNE5XVUZFMUxCWDBIUEZGWks0REZBUTBLSC4u



Thank You..!