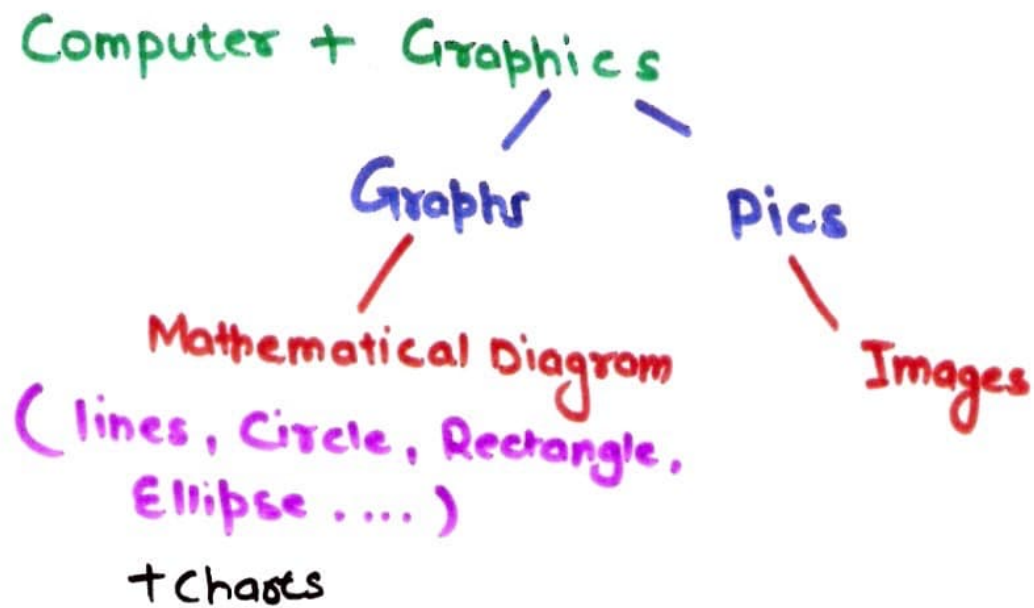


COMPUTER GRAPHICS

What is Computer Graphics ?

It is a branch of Computer Science

What we have first - only Textual Representation of Data:



"Now we can make definition of Computer Graphics:-

We can say Computer Graphics is an art of drawing Pictures, Lines, charts, etc, Using Computer with the help of program and software."

In 1963, Ivan Sutherland, developed a Sketchpad, in which images can be drawn on the screen using a lightpen.

Later he developed Virtual Reality Equipment and design of Flight Simulator.

What are the things Comes under CG:-

- | | | |
|--------------------------|------------------|--------------------|
| 1) Representation | 2) Manipulation | 3) Storage |
| How it will be displayed | Changes, Editing | Stored in Computer |

Of images by Computer with the help of specialized Softwares and Hardwares.

First Scenario was Representation of lines, circles ...

Now

2D, 3D, 4D, Animations

COMPUTER GRAPHICS APPLICATIONS

Computer Graphics is used in various such as



Representative Uses:-

- **CARTOGRAPHY** :- Representing Weather Maps, Geographic Maps, Oceanographic charts, Contour Maps, population density Maps....

• Computer-Aided Drafting and Design :-

It uses graphics to design components and systems like

- Electrical
- Electromechanical
- Mechanical
- Electronic Devices
- Like
 - Building structure
 - Airplane Design
 - Ships Design
 - Very Large-Scale Integrated (VLSI) chips
 - Computer Networks
 - Automobiles and many more...

• USER INTERFACES :-

User friendliness is main factor for the popularity of a system.

The built-in graphics provided with user interfaces use visual control items such as

Buttons

Icons

Menus

ScrollBar

• Office Automation And Desktop Publishing :-

Creation and Dissemination of information,

In House creation and printing of documents,

Desktop Publishing; creating documents which contains text, graphs, tables, pictures, scanned images.

• Simulation & Animation :-

Graphics in simulation makes mathematical models and mechanical systems more realistic and easy to study.

Graphics use in production of animated and cartoon films.

Plotting of graphics and chart :-

Use of graphics to create 2D and 3D graphs of mathematical, physical and economic functions in form of histogram, bars and pie chart which helps in decision making.



Pie chart

Computer Graphics

Hardware & Software

Hardware :-

1 Input & Output Devices

These are quite important for any SW because an inappropriate selection of the concerned hardware may produce some erroneous results or may process data of some other format.

Touch Panel

Light Pens

Graphics Tablet

Plotters

Film Recorders.

Keyboard

Mouse

Joysticks

Voice Systems

Image Scanners

Data Glove

Trackball & Spaceball

2 Out Devices :- Video Display Devices

- Cathode-Ray-Tubes (CRT)

- Vector Scan / Random Scan Display

- Raster Scan Display
- Colour CRT Monitors
- Direct view Storage Tubes
- Flat panel Displays
- Plasma Panel Display
- Liquid Crystal Monitor

SIW in Computer Graphics:-

- 1) Photoshop
- 2) Corel Draw
- 3) Maya 3D
- 4) Core Graphics
- 5) Graphics Kernel System (GKS)
- 6) Simple Raster Graphics Package (SRGP)
- 7) Open GL (Graphic Library)