Computer Graphics Tutorial

It is difficult to display an image of any size on the computer screen. This method is simplified by using Computer graphics. Graphics on the computer are produced by using various algorithms and techniques. Here we learn how a rich visual experience is provided to the user by explaining how all these processed by the computer.

Introduction of Computer Graphics

Computer Graphics involves technology to access. The Process transforms and presents information in a visual form. The role of computer graphics insensible. In today life, computer graphics has now become a common element in user interfaces, T.V. commercial motion pictures.

Computer Graphics is the creation of pictures with the help of a computer. The end product of the computer graphics is a picture it may be a business graph, drawing, and engineering.

In computer graphics, two or three-dimensional pictures can be created that are used for research. Many hardware devices algorithm has been developing for improving the speed of picture generation with the passes of time. It includes the creation storage of models and image of objects. These models for various fields like engineering, mathematical and so on.

Today computer graphics is entirely different from the earlier one. It is not possible. It is an interactive user can control the structure of an object of various input devices.

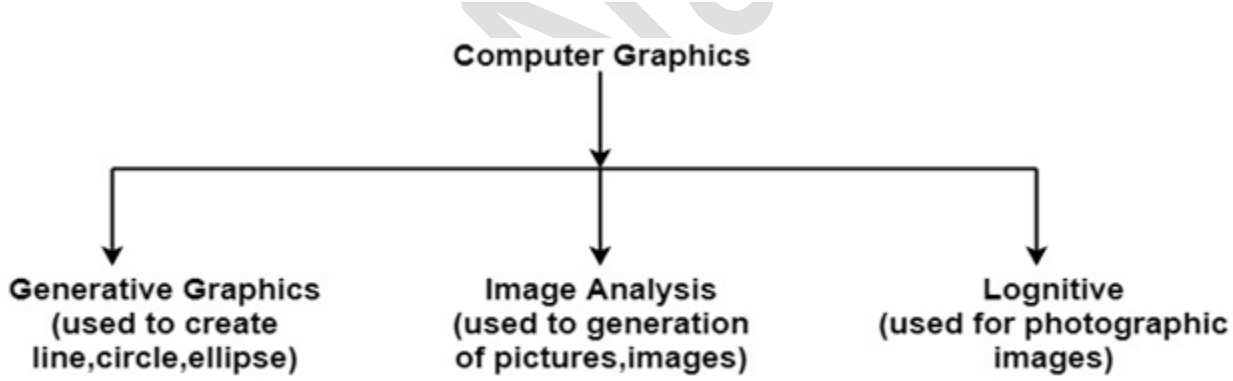
Definition of Computer Graphics:

It is the use of computers to create and manipulate pictures on a display device. It comprises of software techniques to create, store, modify, represents pictures.

Why computer graphics used?

Suppose a shoe manufacturing company want to show the sale of shoes for five years. For this vast amount of information is to store. So a lot of time and memory will be needed. This method will be tough to understand by a common man. In this situation graphics is a better alternative. Graphics tools are charts and graphs. Using graphs, data can be represented in pictorial form. A picture can be understood easily just with a single look.

Interactive computer graphics work using the concept of two-way communication between computer users. The computer will receive signals from the input device, and the picture is modified accordingly. Picture will be changed quickly when we apply command.



Application of Computer Graphics

a. **Education and Training:**

Computer-generated model of the physical, financial and economic system is often used as educational aids. Model of physical systems, physiological system, population trends or equipment can help trainees to understand the operation of the system.

For some training applications, particular systems are designed. For example Flight Simulator.

Flight Simulator:

It helps in giving training to the pilots of airplanes. These pilots spend much of their training not in a real aircraft but on the ground at the controls of a Flight Simulator.

Advantages:

1. Fuel Saving
2. Safety
3. Ability to familiarize the training with a large number of the world's airports.

b. Use in Biology:

Molecular biologist can display a picture of molecules and gain insight into their structure with the help of computer graphics.

c. Computer-Generated Maps:

Town planners and transportation engineers can use computer-generated maps which display data useful to them in their planning work.

d. Architect:

Architect can explore an alternative solution to design problems at an interactive graphics terminal. In this way, they can test many more solutions that would not be possible without the computer.

e. Presentation Graphics:

Example of presentation Graphics are bar charts, line graphs, pie charts and other displays showing relationships between multiple parameters. Presentation Graphics is commonly used to summarize

- Financial Reports
- Statistical Reports
- Mathematical Reports
- Scientific Reports
- Economic Data for research reports
- Managerial Reports
- Consumer Information Bulletins

- And other types of reports

f. Computer Art:

Computer Graphics are also used in the field of commercial arts. It is used to generate television and advertising commercial.

g. Entertainment:

Computer Graphics are now commonly used in making motion pictures, music videos and television shows.

h. Visualization:

It is used for visualization of scientists, engineers, medical personnel, business analysts for the study of a large amount of information.

i. Educational Software:

Computer Graphics is used in the development of educational software for making computer-aided instruction.

j. Printing Technology:

Computer Graphics is used for printing technology and textile design.

Example of Computer Graphics Packages:

I. LOGO
II. COREL DRAW
III. AUTO CAD
IV. 3D STUDIO
V. CORE
VI. GKS (Graphics Kernel System)
VII. PHIGS
VIII. CAM (Computer Graphics Metafile)
IX. CGI (Computer Graphics Interface)