**Experiment 01**

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**Subject: Computer Graphics and Multimedia**

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**AIM**

To study introduction of computer graphics.

**INTRODUCTION**

1. **What is Computer Graphics?**

* It is said to be as the ability to draw various shapes such as line, circle, square, charts etc. using computers with the help of programming.
* 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.
* 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.

**2)What are the Applications of Computer Graphics?**

1. **Computer Art**

Using computer graphics, we can create fine and commercial art which include animation packages, paint packages. These packages provide facilities for designing object shapes and specifying object motion. Cartoon drawing, paintings, logo design can also be done.

1. **Computer Aided Drawing**

Designing of buildings, automobile, aircraft is done with the help of computer aided drawing, this helps in providing minute details to the drawing and producing more accurate and sharp drawings with better specifications.

3)**Presentation Graphics**

For the preparation of reports or summarizing

financial, statistical, mathematical, scientific.

**4)Entertainment**

We can make use of computer graphics in VFX

technology used in various movies.

**3)Define Pixel.**

A pixel is the smallest unit of a digital image or graphic that can be displayed and represented on a digital display device. Pixel is the basic logical unit in digital graphics. Pixels are combined to form a complete image, video, text, or any visible thing on a computer display. A pixel is also known as a picture element (pix = picture, el = element).It can have address and an Intensity which basically tells that which color is filled in that pixel point.

**4)Define Resolution.**

Resolution measures the number of pixels in a digital image or display. It is defined as width by height, or W x H, where W is the number of horizontal pixels and H is the number of vertical pixels. For example, the resolution of an HDTV is 1920 x 1080.

**5)Define Persistence in Computer Graphics.**

Persistence is defined as the time it takes the emitted light from the screen to decay to one tenth of its original intensity**.**

**6)Define Refresh Rate.**

The refresh rate of your display refers to how many times per second the display is able to draw a new image. This is measured in Hertz (Hz). For example, if our display has a refresh rate of 144Hz, it is refreshing the image 144 times per second. A monitor with the ability to refresh quickly. In short, we can say that in one second how much time a pixel is glowing.

**7)Define Framebuffer**

As we know that the pixel has 2 properties one is its position which is in the form of (x,y) coordinate and second is it’s intensity. So all this information regarding pixel is stored in CPU. The place where this information is stored that is called as Framebuffer. In black-white display this framebuffer is termed as Bitmap and in colorful device it is called Pixmap.

**8)Define Graphics Mode Intialization.**

Whenever we want to write any C/C++ program in graphics mode then with help of graphic.h header file we basically initialize the graphics mode.

**9)Define Graphic driver.**

A graphics driver is the software that allow your operating system and programs to use your computer's graphics hardware.

**10)Define Graphic mode.**

Graphics mode is a computer display mode that generates image using pixels. Today, most users operate their computer in a graphics mode opposed to a text mode or command line environment.

**11)Define Path driver.**

Pathdriver specifies the directory path where initgraph() looks for graphics drivers.

**12) Define some basic functions used in Computer graphics.**

* **Cleardevice()=**The header file graphics.h contains cleardevice() function which clears the screen in graphics mode and sets the current position to (0,0). Clearing the screen consists of filling the screen with current background color. It basically removes previous image in moving animation.
* **Delay()=**It basically tells us that for how much time the image must be shown on screen.
* **Closegraph()=**Closegraph deallocates all memory allocated by the graphics system, then restores the screen to the mode it was in before you called initgraph(). It basically closes graphic mode.
* **Setcolor()=**It basically sets the color of shapes that we used.It is used before line or any other functions.