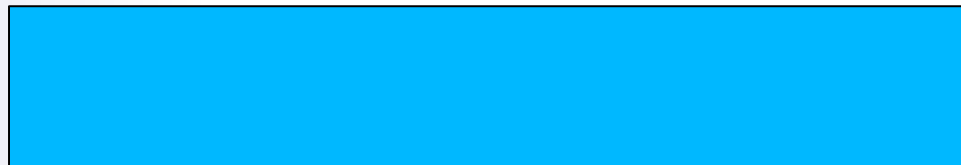




Installation of OpenGL/GLUT



Installation of Opengl in Ubuntu 14.04

Prepare your Linux operating system for OpenGL Development

```
sudo apt-get update
```

```
sudo apt-get install freeglut3
```

```
sudo apt-get install freeglut3-dev
```

```
sudo apt-get install binutils-gold
```

```
sudo apt-get install g++ cmake
```

```
sudo apt-get install libglew-dev
```

```
sudo apt-get install g++
```

```
sudo apt-get install mesa-common-dev
```

```
sudo apt-get install build-essential
```

```
sudo apt-get install libglew1.5-dev libglm-dev
```

After your development libraries have been installed to get information about the OpenGL and GLX implementations running on a given X display.


`glxinfo | grep OpenGL`

To Compile and Execute the C / C++ Program

`:~# g++ XXX.C -lglut -IGL -IGLEW -IGLU -o XXX`

`:~# ./XXX`

XXX.C :- Name of the C Program



```
g++ XXX.C -lglut -lGL -lGLEW -lGLU -o XXX
```

glut : The **OpenGL Utility Toolkit (GLUT)** is a library of utilities for **OpenGL** programs, which primarily perform system-level I/O with the host operating system. Functions performed include window **definition**, window control, and monitoring of keyboard and mouse input.

GL : Open **Graphics Library** (OpenGL) is a cross-language, cross-platform application programming interface (API) for rendering 2D and 3D vector graphics. The API is typically used to interact with a graphics processing unit (GPU), to achieve hardware-accelerated rendering.



```
g++ XXX.C -lglut -lGL -lGLEW -lGLU -o XXX
```

GLEW : The **OpenGL** **E**xtension **W**rangler Library (**GLEW**) is a cross-platform open-source C/C++ extension loading library. **GLEW** provides efficient run-time mechanisms for determining which **OpenGL** extensions are supported on the target platform.

GLU : The **OpenGL** **U**tility Library (**GLU**) is a computer graphics library for **OpenGL**. It consists of a number of functions that use the base **OpenGL** library to provide higher-level drawing routines from the more primitive routines that **OpenGL** provides. It is usually distributed with the base **OpenGL** package.

Installing OpenGL/GLUT Libraries in Ubuntu 14.04

- `sudo apt-get update`

The first step is to install the development libraries of OpenGL/Glut in Ubuntu:

- `sudo apt-get install freeglut3 freeglut3-dev`

For newer versions of Ubuntu (≥ 11.10) you have to install another package because the linker doesn't link anymore.

- `sudo apt-get install binutils-gold`