

IS 2107 - Graphics and Visualization - Practical

Introduction to OpenGL

Install OpenGL on python

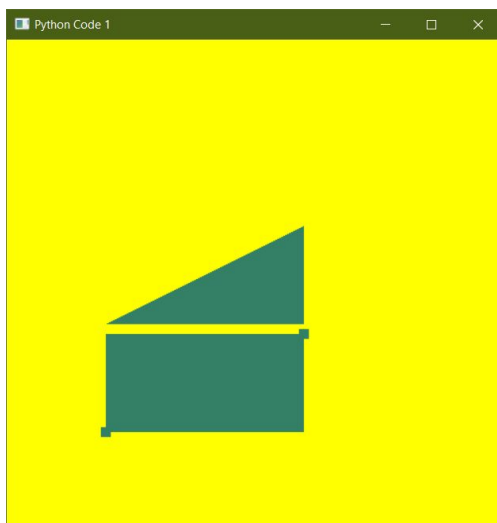
1. Install Python 3.6
2. Install PyOpenGL-3.1.5-cp36-cp36m-win_amd64.whl and PyOpenGL_accelerate-3.1.5-cp36-cp36m-win_amd64.whl using pip. (Use the files given in the VLE)

Start coding on PyOpenGL

Activity 1

1. Create a window (width=500 pixels, height=500 pixels).
2. Set window color to RGB (1,1,0).
3. Name the window to “Python Code 1”.
4. Position the window at (100,100) location.
5. Draw two points at (100,100) and (300,200) locations with a point size of 10.0.
 - a. Use the glBegin(GL_POINTS) function.
6. Draw a rectangle with a width of 200 pixels and a height of 100 pixels.
 - a. Use the glBegin(GL_QUADS) function.
 - b. Draw the first vertex of the rectangle at (100,100) location.
7. Draw the lower half of that rectangle, 10 pixels above the upper edge of the rectangle.
8. Color the drawings with RGB (0.2, 0.5, 0.4).
 - a. Use the glColor3f() function.

Your final output should look like this.

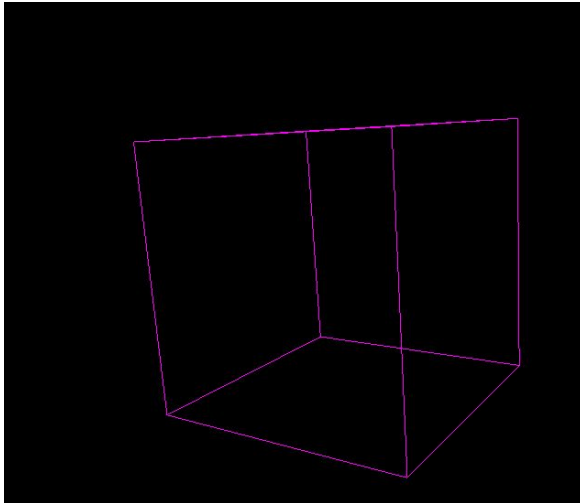


Activity 2

1. Create a window with any size. Your task is to draw a cube with lines.
2. You have to use `glBegin(GL_LINES)` in order to draw edges.
3. Define vertices and edges of the cube using `glVertex3fv()` function.
4. Give any color to lines of cube using `glColor3f()`
5. Draw the cube and make the view of the cube perspective using `gluPerspective()` function.

Your final output might look like this.

(**PS:** You can use any colors as you wish, you can define orientation of the cube as you wish)



- Use only the **OpenGL.GL**, **OpenGL.GLUT** and **OpenGL.GLU** libraries.
- Upload your **executable python code**
- Upload screenshots of the final output and the python code.
- **Upload your own work only!**
- Rename the submission file to **Tutorial02_<index_no>**