ASSIGNMENT 6
3 D CUBE

```
#include <GL/gl.h>
#include <GL/glu.h>
#include <GL/glut.h>
 GLfloat xRotated, yRotated, zRotated;
void init(void)
{
glClearColor(0,0,0,0);

}

void DrawCube(void)
{

    glMatrixMode(GL_MODELVIEW);
   // clear the drawing buffer.
   glClear(GL_COLOR_BUFFER_BIT);
  glLoadIdentity();
      glTranslatef(0.0,0.0,-10.5);
   glRotatef(xRotated,1.0,0.0,0.0);
   // rotation about Y axis
   glRotatef(yRotated,0.0,1.0,0.0);
   // rotation about Z axis
   glRotatef(zRotated,0.0,0.0,1.0);
 glBegin(GL_QUADS);       // Draw The Cube Using quads
   glColor3f(0.0f,1.0f,0.0f);    // Color Blue
   glVertex3f( 1.0f, 1.0f,-1.0f);    // Top Right Of The Quad (Top)
   glVertex3f(-1.0f, 1.0f,-1.0f);    // Top Left Of The Quad (Top)
   glVertex3f(-1.0f, 1.0f, 1.0f);    // Bottom Left Of The Quad (Top)
   glVertex3f( 1.0f, 1.0f, 1.0f);    // Bottom Right Of The Quad (Top)
   glColor3f(1.0f,0.5f,0.0f);    // Color Orange
   glVertex3f( 1.0f,-1.0f, 1.0f);    // Top Right Of The Quad (Bottom)
   glVertex3f(-1.0f,-1.0f, 1.0f);    // Top Left Of The Quad (Bottom)
   glVertex3f(-1.0f,-1.0f,-1.0f);    // Bottom Left Of The Quad (Bottom)
   glVertex3f( 1.0f,-1.0f,-1.0f);    // Bottom Right Of The Quad (Bottom)
   glColor3f(1.0f,0.0f,0.0f);    // Color Red
   glVertex3f( 1.0f, 1.0f, 1.0f);    // Top Right Of The Quad (Front)
   glVertex3f(-1.0f, 1.0f, 1.0f);    // Top Left Of The Quad (Front)
   glVertex3f(-1.0f,-1.0f, 1.0f);    // Bottom Left Of The Quad (Front)
   glVertex3f( 1.0f,-1.0f, 1.0f);    // Bottom Right Of The Quad (Front)
   glColor3f(1.0f,1.0f,0.0f);    // Color Yellow
   glVertex3f( 1.0f,-1.0f,-1.0f);    // Top Right Of The Quad (Back)
```

```
   glVertex3f(-1.0f,-1.0f,-1.0f);    // Top Left Of The Quad (Back)
   glVertex3f(-1.0f, 1.0f,-1.0f);    // Bottom Left Of The Quad (Back)
   glVertex3f( 1.0f, 1.0f,-1.0f);    // Bottom Right Of The Quad (Back)
   glColor3f(0.0f,0.0f,1.0f);    // Color Blue
   glVertex3f(-1.0f, 1.0f, 1.0f);    // Top Right Of The Quad (Left)
   glVertex3f(-1.0f, 1.0f,-1.0f);    // Top Left Of The Quad (Left)
   glVertex3f(-1.0f,-1.0f,-1.0f);    // Bottom Left Of The Quad (Left)
   glVertex3f(-1.0f,-1.0f, 1.0f);    // Bottom Right Of The Quad (Left)
   glColor3f(1.0f,0.0f,1.0f);    // Color Violet
   glVertex3f( 1.0f, 1.0f,-1.0f);    // Top Right Of The Quad (Right)
   glVertex3f( 1.0f, 1.0f, 1.0f);    // Top Left Of The Quad (Right)
   glVertex3f( 1.0f,-1.0f, 1.0f);    // Bottom Left Of The Quad (Right)
   glVertex3f( 1.0f,-1.0f,-1.0f);    // Bottom Right Of The Quad (Right)
  glEnd();           // End Drawing The Cube
glFlush();
}


void animation(void)
{

    yRotated += 0.01;
    xRotated += 0.02;
   DrawCube();
}


void reshape(int x, int y)
{
   if (y == 0 || x == 0) return;  //Nothing is visible then, so return
   //Set a new projection matrix
   glMatrixMode(GL_PROJECTION);
   glLoadIdentity();
   //Angle of view:40 degrees
   //Near clipping plane distance: 0.5
   //Far clipping plane distance: 20.0

   gluPerspective(40.0,(GLdouble)x/(GLdouble)y,0.5,20.0);
   glMatrixMode(GL_MODELVIEW);
   glViewport(0,0,x,y);  //Use the whole window for rendering
}

int main(int argc, char** argv){
```

```
glutInit(&argc, argv);
//we initizlilze the glut. functions
glutInitDisplayMode(GLUT_SINGLE|GLUT_RGB);
glutInitWindowPosition(100, 100);
glutCreateWindow(argv[0]);
init();
glutDisplayFunc(DrawCube);
glutReshapeFunc(reshape);
//Set the function for the animation.
glutIdleFunc(animation);
glutMainLoop();
return 0;
}
```