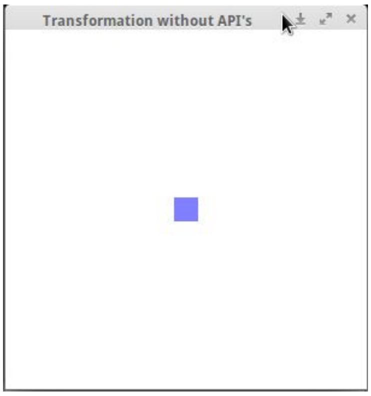
LAB SET 7

Write a program to demonstrate the OpenGL transformation functions with any of the suitable primitive for the following transformations

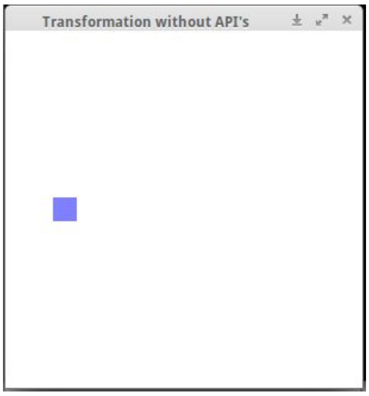
a. Translate
b. Scale
c. Rotate

```
//Program
//Akarsh Singh
#include <stdio.h>
#include <stdlib.h>
#include <GL/glut.h>
#include <math.h>
/* Demonstration of Transformations using APIs with Keyboard interfacing */

void display()
{
      glClear(GL_COLOR_BUFFER_BIT);
      glBegin(GL_POLYGON);
      glVertex2f(-2.0, -2.0);
      glVertex2f(2.0, -2.0);
      glVertex2f(2.0, 2.0);
      glVertex2f(-2.0, 2.0);
      glEnd();
      glFlush();
}


void init()
{
      glViewport(0,0,500,500);
      glMatrixMode(GL_PROJECTION);
      glLoadIdentity();
      gluOrtho2D(-30.0,30.0,-30.0,30.0);
      glMatrixMode(GL_MODELVIEW);
      glLoadIdentity();
      glColor3f(0.5,0.5,1.0);
      glClearColor(1.0,1.0,1.0,0.0);
}


void mykeys(unsigned char key,int x, int y)
{
    switch(key)
    {
       case 'l':         //left
                         glTranslatef(-2.0,0.0f,0.0f);
                         break;
       case 'r':        //right
                        glTranslatef(2.0,0.0f,0.0f);
                        break;

       case 'u':        //up
                        glTranslatef(0.0f,2.0,0.0f);
                        break;

       case 'd':        //down
                        glTranslatef(0.0,-2.0,0.0);
                        break;

       case 'i':        //increase-size
                        glScalef(1.5,1.5,1.5);
                        break;

       case 'D':        //decrease-size
                        glScalef(-0.5,-0.5,-0.5);
                        break;

       case 'R':        //rotate-right
                        glRotatef(10,1.0,1.0,0.0);
                        break;

       case 'L':        //rotate-left
                        glRotatef(-10,1.0,0.0,0.0);
                        break;
    }
    glutPostRedisplay();
}


int main(int argc,char **argv)
{
      glutInit(&argc,argv);
      glutInitDisplayMode(GLUT_RGB|GLUT_SINGLE);
      glutCreateWindow("Transformation without API's");
      glutDisplayFunc(display);
      glutKeyboardFunc(mykeys);
      init();
      glutMainLoop();
      return 0;
}
```

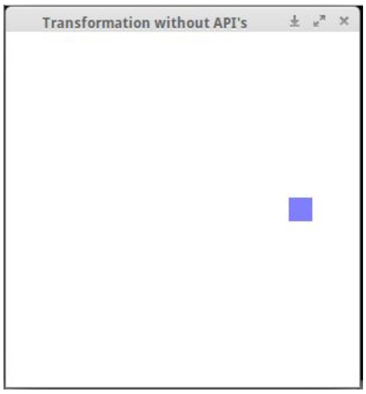
OUTPUT



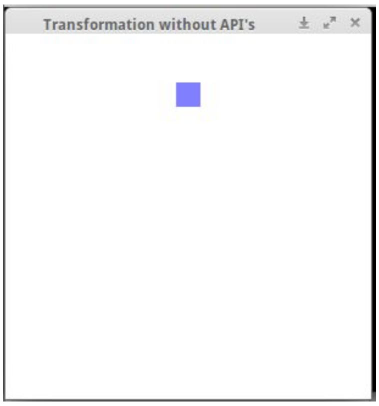
SCREENSHOT 1



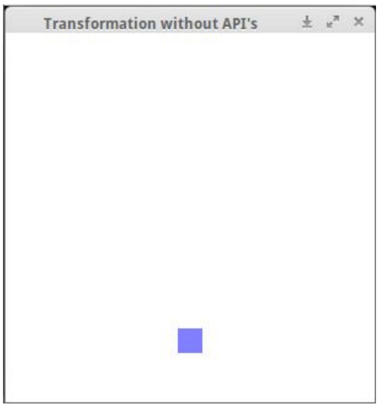
SCREENSHOT 2



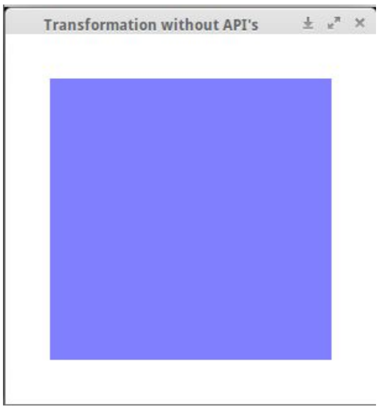
SCREENSHOT 3



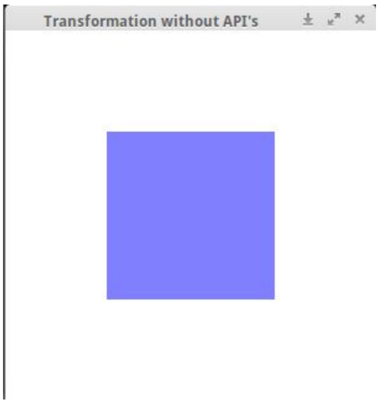
SCREENSHOT 4



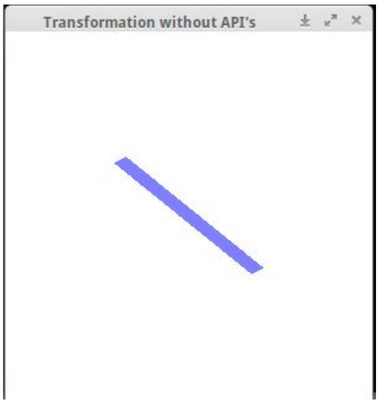
SCREENSHOT 5



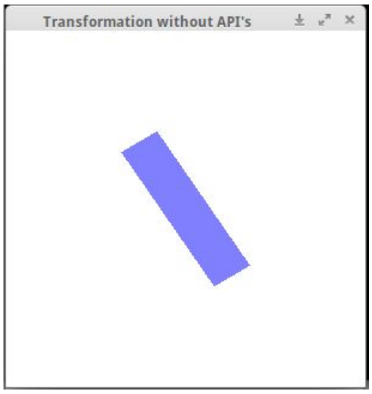
SCREENSHOT 6



SCREENSHOT 7



SCREENSHOT 8



SCREENSHOT 9