**scaling**

#include <GL/glut.h>

#include <iostream>

using namespace std;

float scaleX = 2.0f; // Scaling factor along X-axis

float scaleY = 1.5f; // Scaling factor along Y-axis

void display() {

glClear(GL\_COLOR\_BUFFER\_BIT);

// Original rectangle

glColor3f(1.0, 0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(100, 100);

glVertex2f(200, 100);

glVertex2f(200, 200);

glVertex2f(100, 200);

glEnd();

// Scaled rectangle

glColor3f(0.0, 0.0, 1.0);

glBegin(GL\_POLYGON);

glVertex2f(100 \* scaleX, 100 \* scaleY);

glVertex2f(200 \* scaleX, 100 \* scaleY);

glVertex2f(200 \* scaleX, 200 \* scaleY);

glVertex2f(100 \* scaleX, 200 \* scaleY);

glEnd();

glFlush();

}

void init() {

glClearColor(1.0, 1.0, 1.0, 1.0); // Set background color to white

glMatrixMode(GL\_PROJECTION);

gluOrtho2D(0, 500, 0, 500); // Set the coordinate system

}

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

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);

glutInitWindowSize(500, 500);

glutCreateWindow("2D Scaling using OpenGL");

init();

glutDisplayFunc(display);

glutMainLoop();

return 0;

}