Assignment No.4

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# Subject: CGAVR

## Q1. Polygon Clipping

#include <GL/glut.h>

void init() {

glClearColor(1.0, 1.0, 1.0, 1.0);

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

gluOrtho2D(-5, 5, -5, 5);

}

void display() {

glClear(GL\_COLOR\_BUFFER\_BIT | GL\_STENCIL\_BUFFER\_BIT);

glMatrixMode(GL\_MODELVIEW);

glLoadIdentity();

glEnable(GL\_STENCIL\_TEST);

glStencilOp(GL\_KEEP, GL\_KEEP, GL\_REPLACE);

glClearStencil(0);

glClear(GL\_STENCIL\_BUFFER\_BIT);

glStencilFunc(GL\_ALWAYS, 1, 1);

glColor3f(0.0, 0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-4, -2);

glVertex2f(4, -2);

glVertex2f(0, 4);

glEnd();

glStencilFunc(GL\_EQUAL, 1, 1);

glStencilOp(GL\_KEEP, GL\_KEEP, GL\_KEEP);

glColor3f(1.0, 0.0, 0.0);

glBegin(GL\_POLYGON);

glVertex2f(-2, -2);

glVertex2f(2, -2);

glVertex2f(2, 2);

glVertex2f(-2, 2);

glEnd();

glDisable(GL\_STENCIL\_TEST);

glFlush();

}

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

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB | GLUT\_STENCIL);

glutInitWindowSize(500, 500);

glutCreateWindow("Polygon Clipping");

init();

glutDisplayFunc(display);

glutMainLoop();

return 0;

}

Output:

