#include <GL/glut.h>

#include <stdio.h>

int x1, y1, x2, y2;

void myInit() {

glClear(GL\_COLOR\_BUFFER\_BIT);

glClearColor(0.0, 0.0, 0.0, 1.0);

glMatrixMode(GL\_PROJECTION);

gluOrtho2D(0, 500, 0, 500);

}

void draw\_pixel(int x, int y) {

glBegin(GL\_POINTS);

glVertex2i(x, y);

glEnd();

}

void draw\_line(int x1, int x2, int y1, int y2) {

int dx, dy, i, e;

int incx, incy, inc1, inc2;

int x,y;

dx = x2-x1;

dy = y2-y1;

if (dx < 0) dx = -dx;

if (dy < 0) dy = -dy;

incx = 1;

if (x2 < x1) incx = -1;

incy = 1;

if (y2 < y1) incy = -1;

x = x1; y = y1;

if (dx > dy) {

draw\_pixel(x, y);

e = 2 \* dy-dx;

inc1 = 2\*(dy-dx);

inc2 = 2\*dy;

for (i=0; i<dx; i++) {

if (e >= 0) {

y += incy;

e += inc1;

}

else

e += inc2;

x += incx;

draw\_pixel(x, y);

}

} else {

draw\_pixel(x, y);

e = 2\*dx-dy;

inc1 = 2\*(dx-dy);

inc2 = 2\*dx;

for (i=0; i<dy; i++) {

if (e >= 0) {

x += incx;

e += inc1;

}

else

e += inc2;

y += incy;

draw\_pixel(x, y);

}

}

}

void myDisplay() {

draw\_line(x1, x2, y1, y2);

glFlush();

}

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

printf( "Enter (x1, y1, x2, y2)\n");

scanf("%d %d %d %d", &x1, &y1, &x2, &y2);

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE|GLUT\_RGB);

glutInitWindowSize(500, 500);

glutInitWindowPosition(0, 0);

glutCreateWindow("Bresenham's Line Drawing");

myInit();

glutDisplayFunc(myDisplay);

glutMainLoop();

return 0;

}