#include <GL/glut.h>

#include <stdio.h>

#include <math.h>

int x0,xn,yi,ye;

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 setpixel(int x, int y) {

glBegin(GL\_POINTS);

glVertex2i(x, y);

glEnd();

}

void bresenham\_line(int x0, int xn, int y0, int yn) {

int dx, dy, i, p;

int e1, e2;

int x,y;

dx = fabs(xn-x0);

dy = fabs(yn-y0);

if (dx > dy)

{

if (x0 > xn)

{

x = xn; y = yn;

xn=x0;

}

else

{

x = x0; y = y0;

}

setpixel(x, y);

p = 2 \* dy-dx;

e1 = 2\*(dy-dx);

e2 = 2\*dy;

while(x<xn)

{

x++;

if (p < 0)

p += e2;

else

{

y ++;

p += e1;

}

setpixel(x, y);

}

}

else {

if (y0 > yn)

{

x = xn; y = yn;

yn=y0;

}

else

{ x = x0; y = y0;

}

setpixel(x, y);

p = 2\*dx-dy; e1 = 2\*(dx-dy); e2 = 2\*dx;

while(y<yn)

{

if (p >= 0) {

x ++; p += e1;

}

else

p += e2;

y ++; setpixel(x, y);

}

}

}

void Display() {

bresenham\_line(x0, xn, yi, ye);

glFlush();

}

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

printf( "Enter (x0, y0, xend, yend)\n");

scanf("%d%d%d%d", &x0, &yi, &xn, &ye);

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE|GLUT\_RGB);

glutInitWindowSize(500, 500);

glutInitWindowPosition(0, 0);

glutCreateWindow("Bresenham's Line Drawing");

myInit();

glutDisplayFunc(Display);

glutMainLoop();

}