// Sample Line Incremental (DDA) Algorithm

#include<windows.h>

//#include<iostream>

#include<cmath>

#include <cstdio>

//#include<GL/gl.h>

#include <GL/glut.h>

using namespace std;

int X1, Y1, X2, Y2, r ,cx, cy;

void DDA()

{

double dx=(X2-X1),dy=(Y2-Y1),l;

float xInc,yInc,x=X1,y=Y1;

if(abs(dx)>abs(dy))

l=(abs(dx));

else

l=(abs(dy));

xInc=dx/l;

yInc=dy/l;

glClear(GL\_COLOR\_BUFFER\_BIT);

glBegin(GL\_POINTS);

glVertex2d(x,y);

for(int i=0; i<l; i++)

{

x+=xInc;

y+=yInc;

glVertex2d(round(x), round(y));

}

glEnd();

glFlush();

}

void myInit (void)

{

glClearColor(1.0, 1.0, 1.0, 0.0);

glColor3f(0.0f, 0.0f, 0.0f);

glPointSize(4.0);

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

gluOrtho2D(-100.0, 640.0,-100.0, 480.0);

// gluOrtho2D(0.0, 640.0,0.0, 480.0);

}

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

{

glutInit(&argc, argv);

glutInitDisplayMode (GLUT\_SINGLE | GLUT\_RGB);

glutInitWindowSize (640, 480);

glutInitWindowPosition (100, 150);

glutCreateWindow ("Midpoint Circle");

printf("Enter an initial points:\t");

scanf("%d", &X1);

scanf("%d", &Y1);

//cin>>Y1;

printf("Enter the final points:\t");

scanf("%d", &X2);

scanf("%d", &Y2);

//cin>>X2;

//cin>>Y2;

glutDisplayFunc(DDA);

myInit ();

glutMainLoop();

}