#include <stdio.h>

#include <math.h>

//#include<windows.h>

#include <GL/glut.h>

double X1, Y1, X2, Y2;

float round\_value(float v)

{

return floor(v + 0.5);

}

void LineDDA(void)

{

double dx=(X2-X1);

double dy=(Y2-Y1);

double steps;

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

/\* Find out whether to increment x or y \*/

steps=(abs(dx)>abs(dy))?(abs(dx)):(abs(dy));

xInc=dx/(float)steps;

yInc=dy/(float)steps;

/\* Clears buffers to preset values \*/

glClear(GL\_COLOR\_BUFFER\_BIT);

/\* Plot the points \*/

glBegin(GL\_POINTS);

/\* Plot the first point \*/

glVertex2d(x,y);

int k;

/\* For every step, find an intermediate vertex \*/

for(k=0;k<steps;k++)

{

x+=xInc;

y+=yInc;

/\* printf("%0.6lf %0.6lf\n",floor(x), floor(y)); \*/

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

}

glEnd();

glFlush();

}

void Init()

{

/\* Set clear color to white \*/

glClearColor(1.0,1.0,1.0,0);

/\* Set fill color to black \*/

glColor3f(0.0,0.0,0.0);

/\* glViewport(0 , 0 , 640 , 480); \*/

/\* glMatrixMode(GL\_PROJECTION); \*/

/\* glLoadIdentity(); \*/

gluOrtho2D(0 , 640 , 0 , 480);

}

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

{

printf("Enter two end points of the line to be drawn:\n");

printf("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

printf("\nEnter Point1( X1 , Y1):\n");

scanf("%lf%lf",&X1,&Y1);

printf("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

printf("\nEnter Point1( X2 , Y2):\n");

scanf("%lf%lf",&X2,&Y2);

/\* Initialise GLUT library \*/

glutInit(&argc,argv);

/\* Set the initial display mode \*/

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);

/\* Set the initial window position and size \*/

glutInitWindowPosition(0,0);

glutInitWindowSize(640,480);

/\* Create the window with title "DDA\_Line" \*/

glutCreateWindow("DDA\_Line");

/\* Initialize drawing colors \*/

Init();

/\* Call the displaying function \*/

glutDisplayFunc(LineDDA);

/\* Keep displaying untill the program is closed \*/

glutMainLoop();

}