#include<stdio.h>

#include<GL/glut.h>

#include<math.h>

int x1,yy1,x2,y2;

void init(void)

{

glClearColor(0.0,0.0,0.0,0.0);

gluOrtho2D(-200.0,200.0,-200.0,200.0);

}

int sign(int x)

{

if(x > 0) return 1;

if(x < 0) return -1;

return 0;

}

void dda(int X1,int a1, int X2,int Y2)

{

float x,y,dx,dy,length;

int i;

dx=abs(X2-X1);

dy=abs(Y2-a1);

if(dx>=dy)

length=dx;

else

length=dy;

dx=(X2-X1)/length;

dy=(Y2-a1)/length;

x=X1 + 0.5\*sign(X1);

y=a1 + 0.5\*sign(a1);

i=1;

do{

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POINTS);

glVertex2i(x,y);

glEnd();

glFlush();

x=x+dx;

y=y+dy;

i=i+1;

}while(i<=length);

glFlush();

}

void square(int x1,int y1,int x2,int y2)

{

dda(x1,y1,x2,y1);

dda(x2,y1,x2,y2);

dda(x2,y2,x1,y2);

dda(x1,y2,x1,y1);

dda((x1+x2)/2,y1,x2,(y1+y2)/2);

dda(x2,(y1+y2)/2,(x1+x2)/2,y2);

dda((x1+x2)/2,y2,x1,(y1+y2)/2);

dda(x1,(y1+y2)/2,(x1+x2)/2,y1);

dda((3\*x1+x2)/4,(3\*y1+y2)/4,(3\*x2+x1)/4,(3\*y1+y2)/4);

dda((3\*x2+x1)/4,(3\*y1+y2)/4,(3\*x2+x1)/4,(3\*y2+y1)/4);

dda((3\*x2+x1)/4,(3\*y2+y1)/4,(3\*x1+x2)/4,(3\*y2+y1)/4);

dda((3\*x1+x2)/4,(3\*y2+y1)/4,(3\*x1+x2)/4,(3\*y1+y2)/4);

}

void display()

{

square(x1,yy1,x2,y2);

}

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

{

printf("enter the x-cordinate 1\n");

scanf("%d",&x1);

printf("enter the y-cordinate 1\n");

scanf("%d",&yy1);

printf("enter the x-cordinate 2\n");

scanf("%d",&x2);

printf("enter the y-cordinate 2\n");

scanf("%d",&y2);

glutInit(&argc,argv);

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

glutInitWindowSize(800,800);

glutInitWindowPosition(100,100);

glutCreateWindow("Circle");

glClear(GL\_COLOR\_BUFFER\_BIT);

init();

glutDisplayFunc(display);

glFlush();

glutMainLoop();

return 0;

}