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Roll no 26

**Koch curve**

**Code :**

#include<windows.h>

#include<iostream>

#include<GL/glut.h>

#include<stdio.h>

using namespace std;

float x1,x2,y1,y2,n;

void getdata()

{

cout<<"Enter Start & End Points of Line: ";

cin>>x1>>y1>>x2>>y2;

cout<<"Enter no. of Iteration: ";

cin>>n;

}

void koch(float x1,float y1,float x2,float y2,float n)

{

float ang=60;ang=ang\*3.14/180;

float x3=(2\*x1+x2)/3;

float y3=(2\*y1+y2)/3;

float x4=(x1+2\*x2)/3;

float y4=(y1+2\*y2)/3;

float x=x3+(x4-x3)\*0.5+(y4-y3)\*0.8660;

float y=y3-(x4-x3)\*0.8660+(y4-y3)\*0.5;

if(n>0)

{

koch(x1,y1,x3,y3,n-1);

koch(x3,y3,x,y,n-1);

koch(x,y,x4,y4,n-1);

koch(x4,y4,x2,y2,n-1);

}

else

{

glBegin(GL\_LINE\_STRIP);

glClearColor(1.0,1.0,1.0,0.0);

glColor3f(0.0,1.0,1.0);

glVertex2f(x1,y1);

glColor3f(0.0,1.0,1.0);

glVertex2f(x3,y3);

glColor3f(1.0,1.0,0.0);

glVertex2f(x,y);

glColor3f(1.0,0.0,1.0);

glVertex2f(x4,y4);

glColor3f(1.0,1.0,1.0);

glVertex2f(x2,y2);

glEnd();

}

}

void Init()

{

glClearColor(0.0,0.0,0.0,0.0);

glColor3f(0.0,0.0,0.0);

gluOrtho2D(0.0,640.0,480.0,0.0);

}

void display()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

koch(x1,y1,x2,y2,n);

glFlush();

}

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

{

getdata();

glutInit(&argv,argc);

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);

glutInitWindowPosition(100,100);

glutInitWindowSize(640,480);

glutCreateWindow("Koch Curve Implementation");

Init();

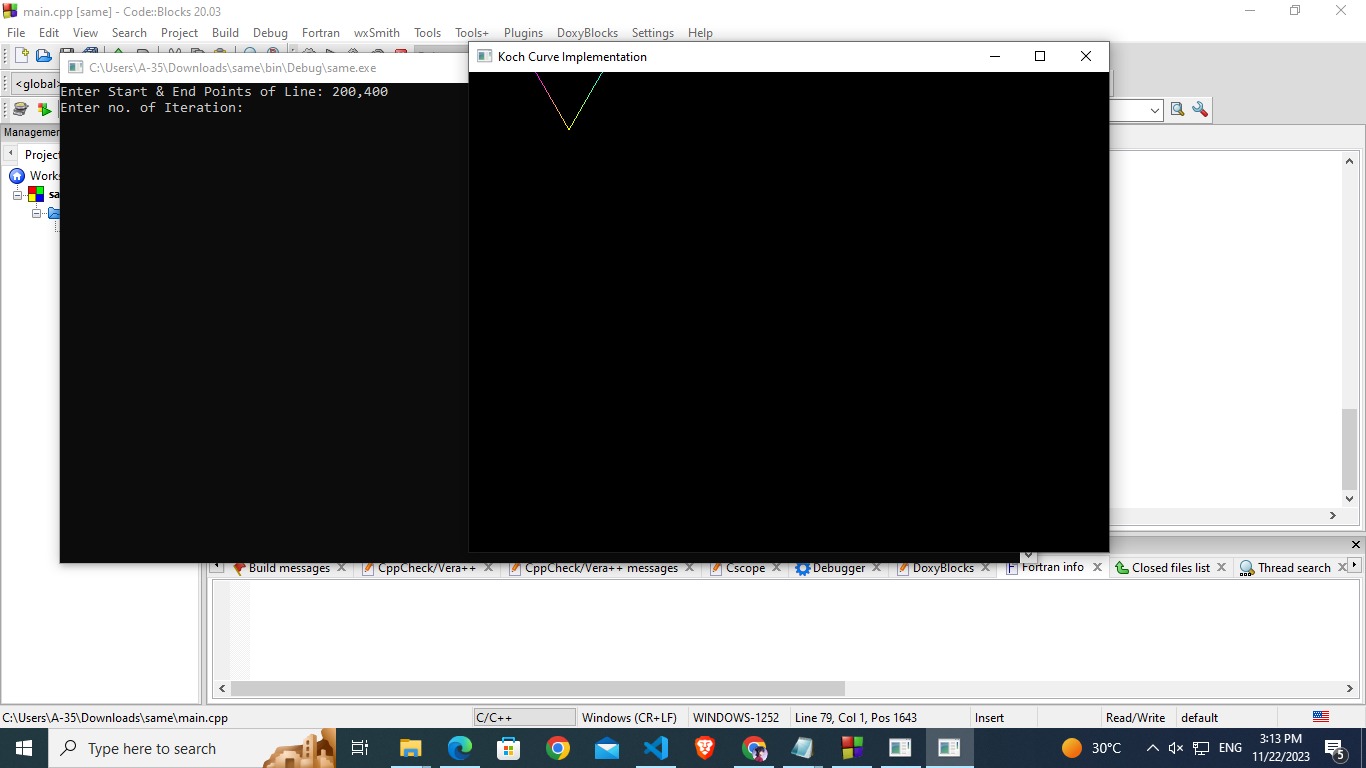
glutDisplayFunc(display);

glutMainLoop();

return 0;

}

**Output :**

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