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Class:SE1
Batch:G1
Assignment No.:10

Code:

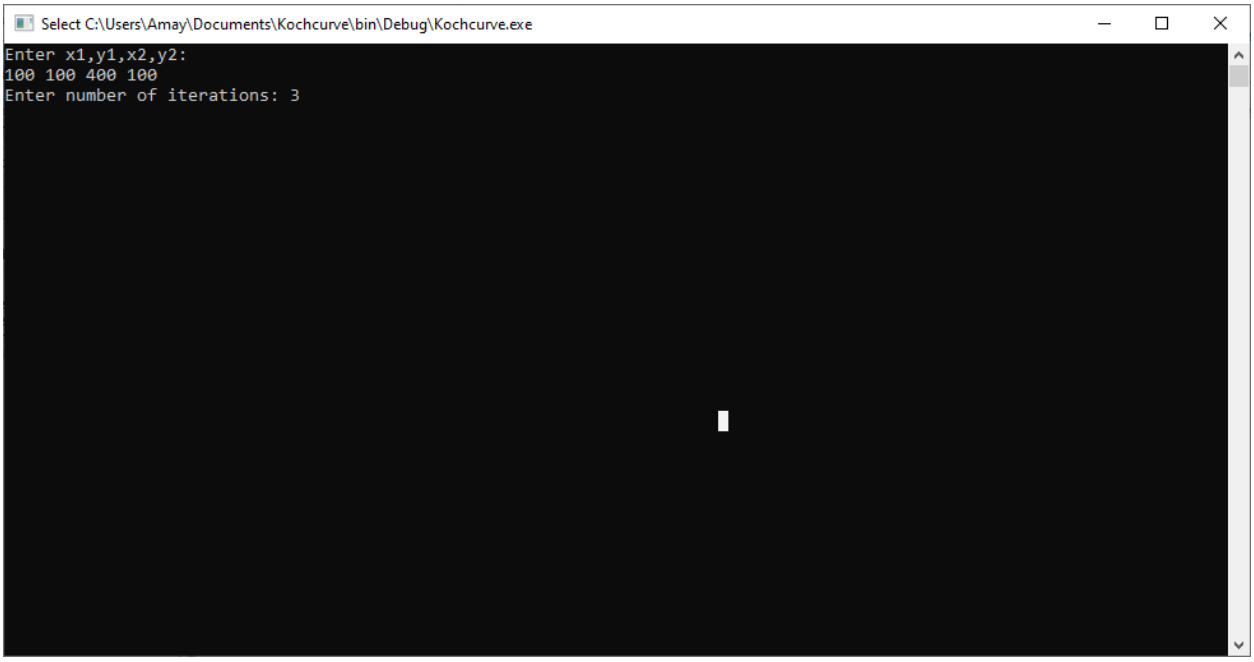
```
#include<iostream>

#include<GL/glut.h>

#include<stdio.h>

//#include<math.h>

using namespace std;

float x1,x2,y1,y2,n;

void getdata()

{

cout<<"Enter x1,y1,x2,y2: "<<endl;

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

cout<<"Enter number of iterations: ";

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;
```

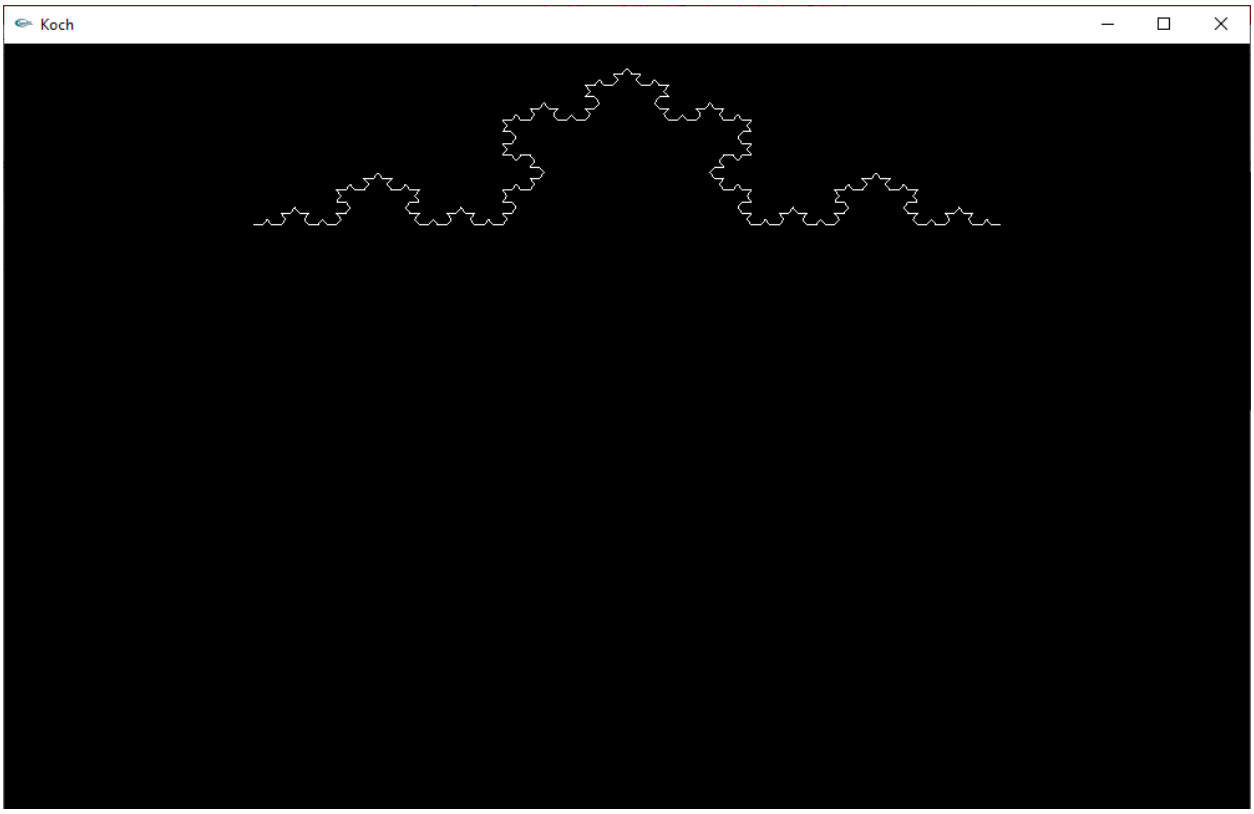
```
float x=x3+(x4-x3)*0.5+(y4-y3)*0.8660;
float y=y3-(x4-x3)*0.8660+(y4-y3)*0.5;
if(n>0)
{
koch(x1,y1,x3,y3,n-1);
koch(x3,y3,x,y,n-1);
koch(x,y,x4,y4,n-1);
koch(x4,y4,x2,y2,n-1);
}
else
{
glBegin(GL_LINE_STRIP);
glClearColor(1.0,1.0,1.0,0.0);
glColor3f(1.0,1.0,1.0);
glVertex2f(x1,y1);//0.224,0.1,,0.078
glColor3f(1.0,1.0,1.0);
glVertex2f(x3,y3);
glColor3f(1.0,1.0,1.0);
glVertex2f(x,y);
glColor3f(1.0,1.0,1.0);
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(0.0,500.0,500.0,0.0);
}
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(500,500);
glutCreateWindow("Koch");
Init();
```

```
glutDisplayFunc(display);

glutMainLoop();


return 0;

}
```

Output:




Koch