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Class - SE - AI&DS - C1
Roll no. - 20

CODE:-

```
//koch curve
#include <iostream>
#include <math.h>
#include <graphics.h>
using namespace std;
class kochCurve
{
    public:
        void koch(int it,int x1,int y1,int x5,int y5)
        {
            int x2,y2,x3,y3,x4,y4;
            int dx,dy;
            if (it==0)
            {
                line(x1,y1,x5,y5);
            }
            else
            {
                delay(10);
                dx=(x5-x1)/3;
                dy=(y5-y1)/3;
                x2=x1+dx;
                y2=y1+dy;
                x3=(int)(0.5*(x1+x5)+sqrt(3)*(y1-y5)/6);
                y3=(int)(0.5*(y1+y5)+sqrt(3)*(x5-x1)/6);
                x4=2*dx+x1;
                y4=2*dy+y1;
                koch(it-1,x1,y1,x2,y2);
                koch(it-1,x2,y2,x3,y3);
                koch(it-1,x3,y3,x4,y4);
                koch(it-1,x4,y4,x5,y5);
            }
        }
};

int main()
{
    kochCurve k;
    int it;
    cout<<"Enter Number Of Iterations : "<<endl;
    cin>>it;
    int gd=DETECT,gm;
    initgraph(&gd,&gm,NULL);
```

```

    k.koch(it,150,20,20,280);
    k.koch(it,280,280,150,20);
    k.koch(it,20,280,280,280);
    getch();
    closegraph();
    return 0;
}

```

COMMANDS:-

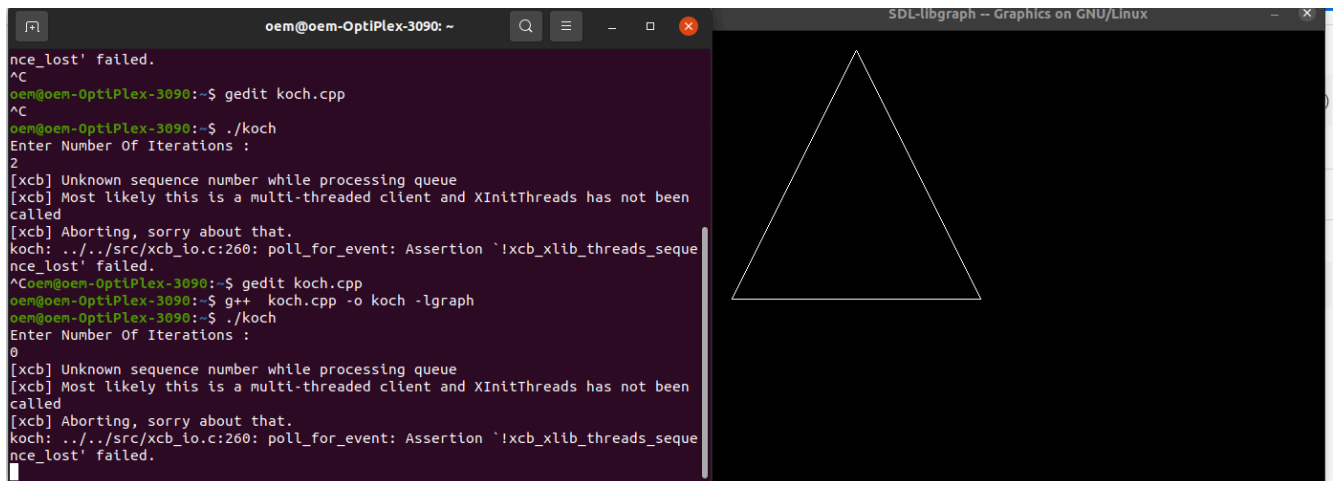
```

oem@oem-OptiPlex-3090:~$ g++ koch.cpp -o koch -lgraph
oem@oem-OptiPlex-3090:~$ ./koch
Enter Number Of Iterations :
0

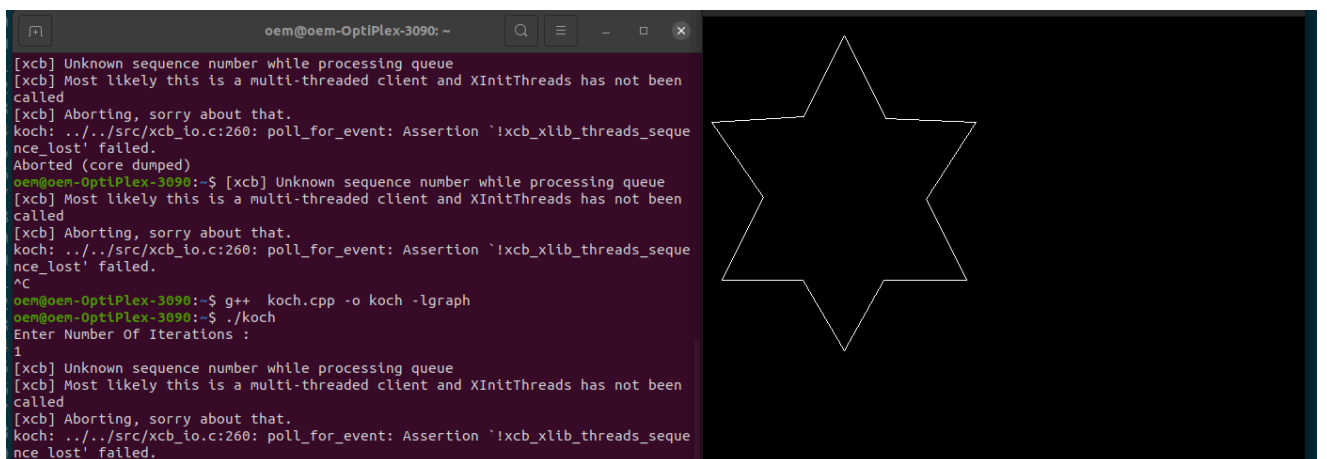
```

CODE:-

Iteration 0



Iteration 1



Iteration 2

```
oem@oem-OptiPlex-3090: ~  
called  
[xcb] Aborting, sorry about that.  
koch: ../../src/xcb_io.c:260: poll_for_event: Assertion '!xcb_xlib_threads_sequence_lost' failed.  
^C  
oem@oem-OptiPlex-3090:~$ g++ koch.cpp -o koch -lgraph  
oem@oem-OptiPlex-3090:~$ ./koch  
Enter Number Of Iterations :  
1  
[xcb] Unknown sequence number while processing queue  
[xcb] Most likely this is a multi-threaded client and XInitThreads has not been called  
[xcb] Aborting, sorry about that.  
koch: ../../src/xcb_io.c:260: poll_for_event: Assertion '!xcb_xlib_threads_sequence_lost' failed.  
^Coem@oem-OptiPlex-3090:~$ ./koch  
Enter Number Of Iterations :  
2  
[xcb] Unknown sequence number while processing queue  
[xcb] Most likely this is a multi-threaded client and XInitThreads has not been called  
[xcb] Aborting, sorry about that.  
koch: ../../src/xcb_io.c:260: poll_for_event: Assertion '!xcb_xlib_threads_sequence_lost' failed.
```

