

/*

NAME:-

ROLL_NO:-

DIV:-

Program no-5BAIM:- Write C++ program to generate fractal pattern by using Koch Curves.*/

```
#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;
}
```