Assignment No. 6

Problem Statement: Write C++ Program To Generate Fractal Patterns By Using Koch Curves

Source Code :-

```
#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)*(y1y5)/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;
}
```

Output: