Lab Assignment No.5

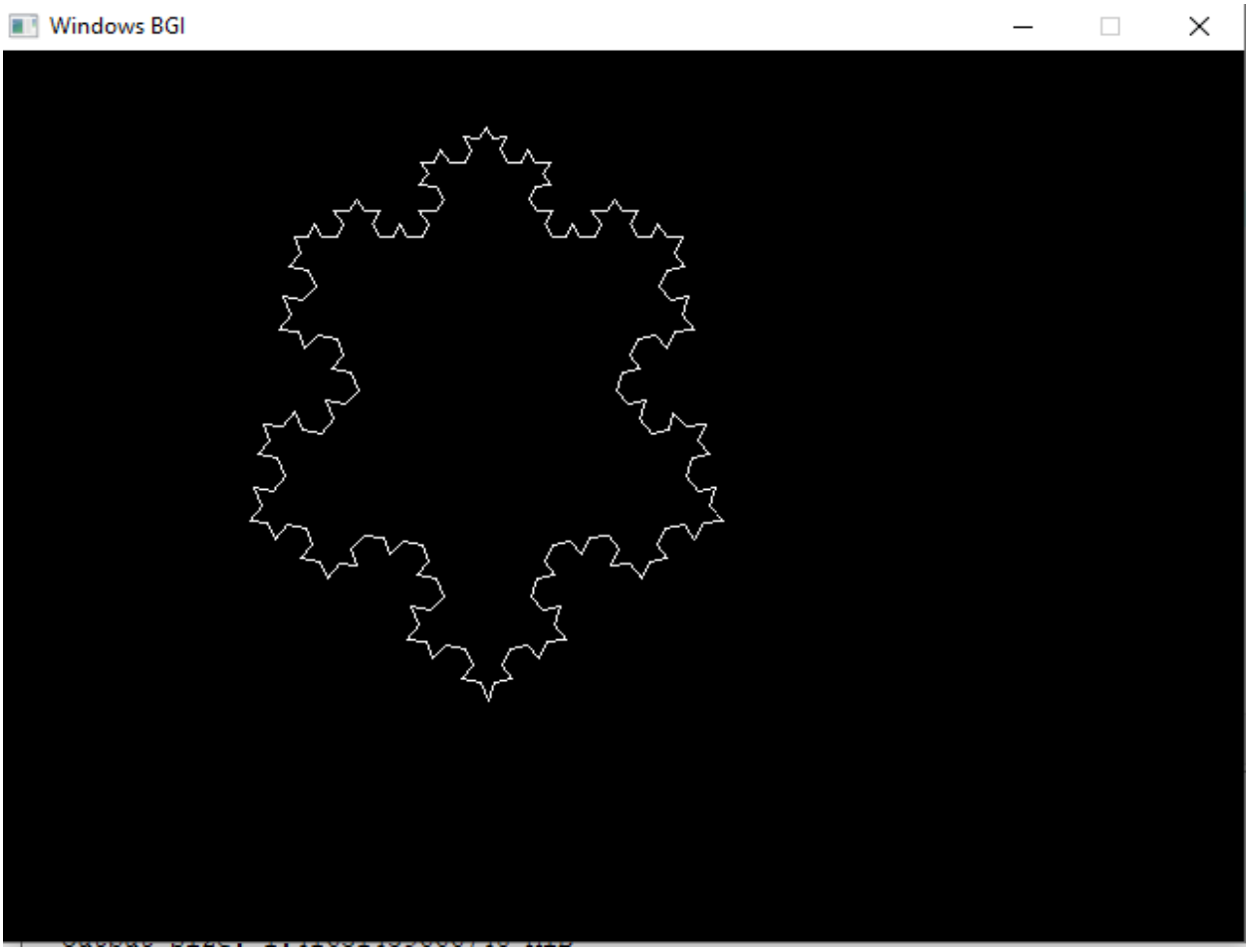
Aim : Write C++ program to generate fractal patterns by using Koch curves.

Program Code :

```
#include<iostream>
#include<graphics.h>
#include<math.h>
using namespace std;

void snow(int x1, int y1, int x2, int y2, int it)
{
 float angle = 60*M_PI/180;
 int x3 = (2*x1+x2)/3;
 int y3 = (2*y1+y2)/3;

 int x4 = (x1+2*x2)/3;
 int y4 = (y1+2*y2)/3;

 int x = x3+(x4-x3)*cos(angle)+(y4-y3)*sin(angle);
 int y = y3-(x4-x3)*sin(angle)+(y4-y3)*cos(angle);

 if(it > 0)
 {
  snow(x1, y1, x3, y3, it-1);
  snow(x3, y3, x, y, it-1);
  snow(x, y, x4, y4, it-1);
  snow(x4, y4, x2, y2, it-1);
 }
```

```
 else
 {

  line(x1, y1, x3, y3);
  line(x3, y3, x, y);
  line(x, y, x4, y4);
  line(x4, y4, x2, y2);
 }
}

int main()
{
 int gd = DETECT,gm;
 initgraph(&gd, &gm, NULL);
 int x1 = 150, y1 = 100, x2 = 350, y2 = 100;
 snow(x1, y1, x2, y2,2);
snow(250,350,150,100,2);
snow(350,100,250,350,2);
 getch();
 return 0;
}
```

Output :


Windows BGI