Name : Shawn Louis	Batch : B	Roll No : 31
EXPERIMENT 12		
Title	**FRACTAL GENERATIONS USING KOCH CURVE**	
Objective	To write a C program for fractal generations using Koach Curve.	

Program	#include<stdio.h>
	#include<graphics.h>
	#include<stdlib.h>
	#define SIN 0.86602540
	
	void koch(int x1,int y1,int x2, int y2, int m)
	{
	int xx, yy, x[5], y[5], lx, ly, offx=50, offy=300;
	lx=(x2-x1)/3;
	ly=(y2-y1)/3;
	x[0]=x1;
	y[0]=y1;
	x[4]=x2;
	y[4]=y2;
	x[1]=x[0]+lx;
	y[1]=y[0]+ly;
	x[3]=x[0]+2*lx;
	y[3]=y[0]+2*ly;
	xx=x[3]-x[1];
	yy=y[3]-y[1];
	x[2]=xx*(0.5) + yy*(SIN);
	y[2]=-xx*(SIN)+yy*(0.5);
	x[2]=x[2]+x[1];
	y[2]=y[2]+y[1];
	if(m>0)
	{
	koch(x[0],y[0],x[1],y[1],m-1); //draw part 1
	koch(x[1],y[1],x[2],y[2],m-1); //draw part 2
	koch(x[2],y[2],x[3],y[3],m-1); //draw part 3
	koch(x[3],y[3],x[4],y[4],m-1); //draw part 4
	}
	else
	{
	line(offx+x[0],offy+y[0],offx+x[1],offy+y[1]);
	line(offx+x[1],offy+y[1],offx+x[2],offy+y[2]);
	line(offx+x[2],offy+y[2],offx+x[3],offy+y[3]);
	line(offx+x[3],offy+y[3],offx+x[4],offy+y[4]);
	}
	}
	void main()
	{
	int n, gd,gm;
	int x1=0, x2=550, y1=0, y2=0;	

```
printf("Enter the level of curve generation");
scanf("%d",&n);
detectgraph(&gd,&gm);
initgraph(&gd,&gm,"c:\\tc\\bgi");
koch(x1,y1,x2,y2,n);
getch();
closegraph();
}
```

Output

```
shawn@shawn-VirtualBox:~/Desktop$ gedit KocheCurve.c
shawn@shawn-VirtualBox:~/Desktop$ gcc KocheCurve.c -lgraph
shawn@shawn-VirtualBox:~/Desktop$ ./a.out
Enter the level of curve generation : 5
```

Conclusion

Thus a C program to generate Koch curve was written and executed.