37 Fractal

"It's better to go to a funeral than to attend a feast"

In recent times, *Fractal* is quite popular among Graphics Programmers. So graphics programming won't be complete without dealing fractals. In this chapter let's see this fractal technique.

37.1 Prelude

Fractal geometry was actually introduced by Benoit B. Mandelbrot, a fellow of the Thomas J. Watson Research Center, IBM Corporation. Mandelbrot coined the word fractal from the Latin

A Simple Fractal

word *frangere*, which means, "to break". Actually, a fractal object is constructed from simple objects. Each part of the image will give you the overall structure. We, programmers view fractals as recursively generated geometric patterns. In this figure each part of fractal can be viewed as a circle.
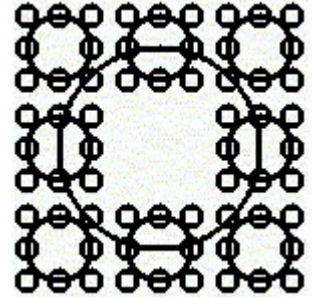
37.2 Program

The following recursive program generates a *fractal*. I hope, from that you can come out with more fractals!

```c
#include <graphics.h>

void MyFractal( int x, int y, int radius, int color )
{
    int i;
    if ( radius>0 )
      {
        MyFractal( x+radius, y+radius, radius/3, LIGHTBLUE );
        MyFractal( x-radius, y+radius, radius/3, YELLOW );
        MyFractal( x+radius, y-radius, radius/3, LIGHTGREEN );
        MyFractal( x-radius, y-radius, radius/3, LIGHTRED );
        MyFractal( x, y+radius, radius/3, WHITE );
        MyFractal( x-radius, y, radius/3, LIGHTBLUE );
        MyFractal( x, y-radius, radius/3, YELLOW );
        MyFractal( x+radius, y, radius/3, LIGHTGREEN );
        setcolor( color );
        circle( x, y, radius );
      }
} /*--MyFractal( )--------*/
```

```
int main( void )
{
    int gdriver = VGA, gmode = VGAHI;
    initgraph( &gdriver, &gmode, "d:\\tc\\bgi" );
    MyFractal( 320, 240, 150, WHITE );
    getch( );
    closegraph( );
    return(0);
} /*--main( )-----------*/
```