Assignment No. 10

Title :- Hilbeet curve

Problem statement :-
Write c++ program to generate hilbeet curve using concept of fractals.

objective:-
To learn & implement the hilbeet curve using concepts of fractals.

S/w used :- Qt creatoe, cpp.

Theoey :-

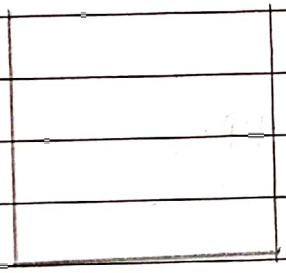
Fractals :-

Fractals are veey complex picture gonerated by a computee from a single formula. Thuy are created wing iterations.

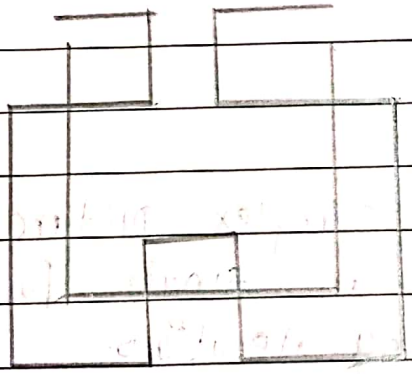
This meany one formula is repeated with slightly different values ovee & ovee again taking into account the results from previous iteration.

Hilbeet curve :-

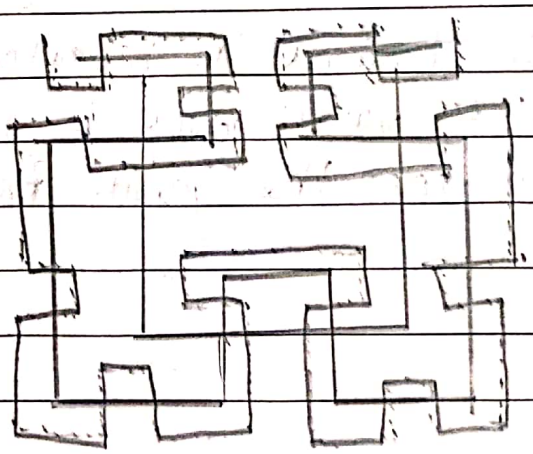
A Hilbeet curve (also known as a hilbeet space filling curve) is a continous fractal space-filling curve first described by the german mathematician David Hilbeet in 1891.



first order



second order



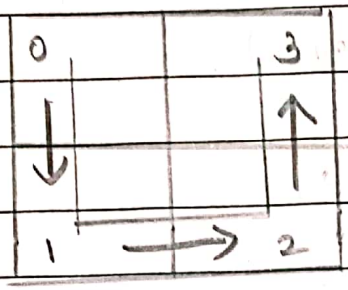
Third order

int level;

Date :
Page :

Recursion:-

The basic element of hilbeet curve is V shape Here we have 2x2 grid square. we staet with out string in top left cornee & drupe it through the othee three squares in the grid to finish in top right corhee.



Algorithm:-

```
Helbeet Curve()
 {
  Samplegraphics sg = Null;
  int dist0 = 512; dist = dist0;
  void int
    {
     Dist0 = 512
     resize = (512,512)
     sg = new Samplegraph (getgraphics(1));
    }
  void paint (Graphics)
    {
     dist = dist 0
     int level;
```

```
for(int i= level, i--)
    {
    Dist = dist/2;
    }
sg. getxy (Dist/2, dist 2)

    Helbretn(level)
}
Void Helbretn (level)
    {
     iF (level>0)
      {
      Helbretn(level-1)
      Helbretn (level-1)
      Helbretn (level-1)
      Helbretn(level -1)
      }
    }
```

This is generalized algorithm for different levels.

* Conclusion :-

Affer completion of assignment, student should able to generate halbeet curve.