

## **Experiment no : 05**

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Date : 17/10/2024

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Class : S.E.

Div : A

Batch : A-2

### **Problem Statement :**

Write a C++ program to generate Hilbert curve using concept of fractals.

### **Code :**

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

void move(int j, int h, int &x, int &y) {
if(j==1)
y=y-h;
else if(j==2)
x+=h;
else if(j==3)
y+=h;
else if(j==4)
x-=h;
lineto(x,y);
}
```

```

void hilbert(int r, int d, int l, int u, int i, int h, int &x, int &y) {
if(i>0) {
i--;
hilbert(d,r,u,l,i,h,x,y);
move(r,h,x,y);
hilbert(r,d,l,u,i,h,x,y);
move(d,h,x,y);
hilbert(r,d,l,u,i,h,x,y);
move(l,h,x,y);
hilbert(u,l,d,r,i,h,x,y);
}
}

```

```

int main() {
int n,x1,y1;
int x0=50,y0=150,x,y,h=10,r=2,d=3,l=4,u=1;
cout<<"\nGive value of n : ";
cin>>n;
x=x0;
y=y0;
int gm, gd=DETECT;
initgraph(&gd,&gm,NULL);
moveto(x,y);
hilbert(r,d,l,u,n,h,x,y);
delay(20000);
closegraph();
return 0;
}

```

Output :

```
d_comp_pl_ii_11@d-comp-pl-ii-11:~/SE_A2_S211045_Atharva$ g++ Hilbert.cpp -o h -lgraph
d_comp_pl_ii_11@d-comp-pl-ii-11:~/SE_A2_S211045_Atharva$ ./h
```

Give value of n : 5

[xcb] Unknown sequence number while processing queue

[xcb] Most likely this is a multi-threaded client and XInitThreads has not been called

[xcb] Aborting, sorry about that.

h: ../../src/xcb\_io.c:260: poll\_for\_event: Assertion '!xcb\_xlib\_threads\_sequence\_lost' failed.

```
d_comp_pl_ii_11@d-comp-pl-ii-11:~/SE_A2_S211045_Atharva$
```

