GROUP B: PRATICAL.5

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PROBLEM STATEMENT:

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

CODE:

```cpp
#include<iostream>
#include<stdlib.h>
#include<graphics.h>
#include<math.h>
using namespace std;
void move(int j, int h, int &x, int &y)              //function
{
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);                                          //draw line to new
}
void hilbert(int r, int d, int l, int u, int i, int h, int &x, int &y)   //for actual calculations
{
if(i>0)
{
i--;
hilbert(d,r,u,l,i,h,x,y);            //calling hilbert function
move(r,h,x,y);                       //draw line and move
```

```
hilbert(r,d,l,u,i,h,x,y);
move(d,h,x,y);                              //draw a line and move down
hilbert(r,d,l,u,i,h,x,y);
move(l,h,x,y);                              //draw a line and move left
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<<"\n Give value of n:";
cin>>n;
x=x0;
y=y0;
int gm, gd=DETECT;
initgraph(&gd,&gm,NULL);                    //initialize graphics mode
moveto(x,y);                                //move to starting
hilbert(r,d,l,u,n,h,x,y);
delay(20000);
closegraph();                               //close graphics mode
return 0;
}
```

INPUT:

d-comp-pl-ii-3@dcompplii3-OptiPlex-3070:~$ g++ stu.cpp -o abc -l graph
d-comp-pl-ii-3@dcompplii3-OptiPlex-3070:~$ ./abc

 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.
abc: ../../src/xcb_io.c:260: poll_for_event: Assertion
`!xcb_xlib_threads_sequence_lost' failed.
d-comp-pl-ii-3@dcompplii3-OptiPlex-3070:~$