

The screenshot shows the OnlineGDB beta interface. On the left, there's a sidebar with links for IDE, My Projects, Classroom, Learn Programming, Programming Questions, We are Hiring, Sign Up, and Login. Below the sidebar are social media sharing icons for Facebook, Twitter, and LinkedIn. The main area has tabs for Run, Debug, Stop, Share, Save, and Beautify. The code editor contains a file named 'main.c' with the following C code:

```
#include <stdio.h>
int GCD(int m,int n)
{ if(n==0)
    return m;
else
    return GCD(n,m%n);
}
int main()
{ int m,n,g=1;
printf("Enter two integers to find GCD:\n");
scanf("%d%d",&m,&n);
g=GCD(m,n);
printf("GCD of%d, %d is: %d",m,n,g);
return 0;
}
```

The output window shows the program's execution:

```
input
24
34
GCD of24, 34 is: 2
--Program finished with exit code 0
Press ENTER to exit console.
```

code for gcd:

```
#include <stdio.h>

int GCD(int m,int n)

{ if(n==0)

    return m;

else

    return GCD(n,m%n);

}

int main()

{ int m,n,g=1;

printf("Enter two integers to find GCD:\n");

scanf("%d%d",&m,&n);

g=GCD(m,n);

printf("GCD of%d, %d is: %d",m,n,g);

return 0;

}
```

The screenshot shows two instances of the OnlineGDB interface. Both instances display the same C code for the Tower of Hanoi problem. In the first instance, the user has entered the input value 3. The output window shows the sequence of moves required to solve the puzzle for 3 disks, starting with moving disk 1 from peg A to peg C, followed by disk 2 from A to B, and so on, until all 3 disks are moved to peg C.

```

1 #include <stdio.h>
2
3 void towers(int, char, char, char);
4
5 int main()
6 {
7     int num;
8
9     printf("Enter the number of disks : ");
10    scanf("%d", &num);
11    printf("The sequence of moves involved in the Tower of Hanoi are :\n");
12    towers(num, 'A', 'C', 'B');
13    return 0;
14 }
15 void towers(int num, char frompeg, char topeg, char auxpeg)
16 {
17     if (num == 1)
18     {
19         printf("\n Move disk 1 from peg %c to peg %c", frompeg, topeg);
20         return;
21     }
22     towers(num - 1, frompeg, auxpeg, topeg);
23     printf("\n Move disk %d from peg %c to peg %c", num, frompeg, topeg);
24     towers(num - 1, auxpeg, topeg, frompeg);
25 }
```

The second instance of the OnlineGDB interface shows the same code running with the input value 5. The output window displays the detailed sequence of moves for 5 disks, which is significantly longer than for 3 disks, illustrating the exponential growth of the solution space.

Code for tower of Hanoi:

```
#include <stdio.h>

void towers(int, char, char, char);

int main()

{
```

```
printf("Enter the number of disks : ");

scanf("%d", &num);

printf("The sequence of moves involved in the Tower of Hanoi are :\n");

towers(num, 'A', 'C', 'B');

return 0;

}

void towers(int num, char frompeg, char topeg, char auxpeg)

{

if (num == 1)

{

printf("\n Move disk 1 from peg %c to peg %c", frompeg, topeg);

return;

}

towers(num - 1, frompeg, auxpeg, topeg);

printf("\n Move disk %d from peg %c to peg %c", num, frompeg, topeg);

towers(num - 1, auxpeg, topeg, frompeg);

}
```