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Language C ▾

main.c

```c
 9  #include <stdio.h>
10
11  void towers(int, char, char, char);
12  int gcd(int a,int b);
13  int main()
14  {
15      int num;
16
17      printf("Enter the number of disks : ");
18      scanf("%d", &num);
19      printf("The sequence of moves involved in the Tower of Hanoi are :\n");
20      towers(num, 'A', 'C', 'B');
21
22      int a , b;
23      printf("\nEnter two numbers:\n");
24      scanf("%d%d",&a,&b);
25      printf("GCD of %d and %d is %d ", a, b, gcd(a, b));
26      return 0;
27  }
28
29
30  void towers(int num, char from, char to, char aux)
31  {
32      if (num == 1)
33      {
34          printf("\n Move disk 1 from peg %c to peg %c", from, to);
35          return;
36      }
37      towers(num - 1, from, aux, to);
```

```c
27  }
28
29
30  void towers(int num, char from, char to, char aux)
31  {
32      if (num == 1)
33      {
34          printf("\n Move disk 1 from peg %c to peg %c", from, to);
35          return;
36      }
37      towers(num - 1, from, aux, to);
38      printf("\n Move disk %d from peg %c to peg %c", num, from, to);
39      towers(num - 1, aux, to, from);
40  }
41
42
43  int gcd(int a, int b)
44  {
45      if (a == 0)
46          return b;
47      else if (b == 0)
48          return a;
49      else if (a == b)
50          return a;
51      else if (a > b)
52          return gcd(a-b, b);
53      else
54          return gcd(a, b-a);
55  }
56
```

input

```
Enter the number of disks : 4
The sequence of moves involved in the Tower of Hanoi are :

 Move disk 1 from peg A to peg B
 Move disk 2 from peg A to peg C
 Move disk 1 from peg B to peg C
 Move disk 3 from peg A to peg B
 Move disk 1 from peg C to peg A
 Move disk 2 from peg C to peg B
 Move disk 1 from peg A to peg B
 Move disk 4 from peg A to peg C
 Move disk 1 from peg B to peg C
 Move disk 2 from peg B to peg A
 Move disk 1 from peg C to peg A
 Move disk 3 from peg B to peg C
 Move disk 1 from peg A to peg B
 Move disk 2 from peg A to peg C
 Move disk 1 from peg B to peg C
Enter two numbers:
20 50
GCD of 20 and 50 is 10

...Program finished with exit code 0
Press ENTER to exit console.
```

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