

```

1  /* hanoi.cc - implementation of solution to Hanoi Tower Problem */
2  #include <iostream>
3
4  static int count{};
5
6  void towerOfHanoi(int n, char from_rod, char to_rod, char aux_rod)
7  {
8      if (n == 1)
9      {
10         std::cout << "Move a disk from rod " << from_rod << " to rod " << to_rod << std::endl;
11         count++;
12         return;
13     }
14     towerOfHanoi(n - 1, from_rod, aux_rod, to_rod);
15     std::cout << "Move a disk from rod " << from_rod << " to rod " << to_rod << std::endl;
16     count++;
17     towerOfHanoi(n - 1, aux_rod, to_rod, from_rod);
18 }
19
20 // Driver code
21 int main()
22 {
23     int n{5}; // Number of disks
24     towerOfHanoi(n, 'A', 'C', 'B'); // A, B and C are names of rods return 0;
25     std::cout << "\nTotal number of moves for " << n << " disks is : " << count << '\n';
26     return 0;
27 }

```

```
~/Fall23/COSC600
```

```
> ./hanoi
```

```

Move a disk from rod A to rod C
Move a disk from rod A to rod B
Move a disk from rod C to rod B
Move a disk from rod A to rod C
Move a disk from rod B to rod A
Move a disk from rod B to rod C
Move a disk from rod A to rod C
Move a disk from rod A to rod B
Move a disk from rod C to rod B
Move a disk from rod C to rod A
Move a disk from rod B to rod A
Move a disk from rod C to rod B
Move a disk from rod A to rod C
Move a disk from rod A to rod B
Move a disk from rod C to rod B
Move a disk from rod A to rod C
Move a disk from rod B to rod A
Move a disk from rod B to rod C
Move a disk from rod A to rod C
Move a disk from rod A to rod B
Move a disk from rod C to rod A
Move a disk from rod B to rod A
Move a disk from rod B to rod C
Move a disk from rod A to rod C
Move a disk from rod A to rod B
Move a disk from rod C to rod B
Move a disk from rod C to rod A
Move a disk from rod B to rod A
Move a disk from rod B to rod C
Move a disk from rod A to rod C
Move a disk from rod A to rod B
Move a disk from rod C to rod B
Move a disk from rod C to rod A
Move a disk from rod B to rod A
Move a disk from rod B to rod C
Move a disk from rod A to rod C

```

Total number of moves for 5 disks is : 31