ARTIFICIAL INTELLIGENCE LAB

ASSIGNMENT – 4

TOWERS OF HANOI PROBLEM

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CODE :

```java
import java.io.*;

import java.math.*;

import java.util.*;

public class Main {

  static void towerOfHanoi(int n, char from_rod,

            char to_rod, char aux_rod)

  {

    if (n == 0) {

      return;

    }

    towerOfHanoi(n - 1, from_rod, aux_rod, to_rod);

    System.out.println("Move disk " + n + " from rod "

          + from_rod + " to rod "

          + to_rod);

    towerOfHanoi(n - 1, aux_rod, to_rod, from_rod);

  }

  public static void main(String args[])

  {

  int N=5;

    towerOfHanoi(N, 'A', 'C', 'B');

  }

}
```

```java
Main.java
1  import java.io.*;
2  import java.math.*;
3  import java.util.*;
4  public class Main {
5      static void towerOfHanoi(int n, char from_rod,
6                               char to_rod, char aux_rod)
7      {
8          if (n == 0) {
9              return;
10         }
11         towerOfHanoi(n - 1, from_rod, aux_rod, to_rod);
12         System.out.println("Move disk " + n + " from rod "
13                            + from_rod + " to rod "
14                            + to_rod);
15         towerOfHanoi(n - 1, aux_rod, to_rod, from_rod);
16     }
17
18     public static void main(String args[])
19     {
20     int N=5;
21         towerOfHanoi(N, 'A', 'C', 'B');
22     }
23  }
```

OUTPUT :

```
Output

java -cp /tmp/tFmAOVcL7a Main
Move disk 1 from rod A to rod C
Move disk 2 from rod A to rod B
Move disk 1 from rod C to rod B
Move disk 3 from rod A to rod C
Move disk 1 from rod B to rod A
Move disk 2 from rod B to rod C
Move disk 1 from rod A to rod C
Move disk 4 from rod A to rod B
Move disk 1 from rod C to rod B
Move disk 2 from rod C to rod A
Move disk 1 from rod B to rod A
Move disk 3 from rod C to rod B
Move disk 1 from rod A to rod C
Move disk 2 from rod A to rod B
Move disk 1 from rod C to rod B
Move disk 5 from rod A to rod C
Move disk 1 from rod B to rod A
Move disk 2 from rod B to rod C
Move disk 1 from rod A to rod C
Move disk 3 from rod B to rod A
Move disk 1 from rod C to rod B
Move disk 2 from rod C to rod A
Move disk 1 from rod B to rod A
Move disk 4 from rod B to rod C
Move disk 1 from rod A to rod C
Move disk 2 from rod A to rod B
Move disk 1 from rod C to rod B
Move disk 3 from rod A to rod C
Move disk 1 from rod B to rod A
Move disk 2 from rod B to rod C
Move disk 1 from rod A to rod C
```