Consider the following program:

```java
public class hanoi{
    public static void hanoi(int disks, char source, char spare, char dest){
        if(disks>1){
            hanoi(disks-1, source, dest, spare);
            System.out.println("Move disk from "+source+" to "+dest );
            hanoi(disks-1, spare, source, dest);
        }
        else
            System.out.println("Move disk from "+source+" to "+dest );
    }
    public static void main(String[] args) {
        hanoi(3,'A','B','C');
    }
}
```

Here we show the contents of the stack every time an activation record is created, destroyed, or an output is produced.

**Stack of activation records:**

<table>
<thead>
<tr>
<th>main: ip = 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>hanoi: disks = 3, source = A, spare = B, dest = C, ip = 3</td>
</tr>
<tr>
<td>main: ip = 15</td>
</tr>
<tr>
<td>hanoi: disks = 2, source = A, spare = C, dest = B, ip = 3</td>
</tr>
<tr>
<td>hanoi: disks = 3, source = A, spare = B, dest = C, ip = 6</td>
</tr>
<tr>
<td>main: ip = 15</td>
</tr>
<tr>
<td>hanoi: disks = 1, source = A, spare = B, dest = C, ip = 3</td>
</tr>
<tr>
<td>hanoi: disks = 2, source = A, spare = C, dest = B, ip = 6</td>
</tr>
<tr>
<td>hanoi: disks = 3, source = A, spare = B, dest = C, ip = 6</td>
</tr>
<tr>
<td>main: ip = 15</td>
</tr>
</tbody>
</table>

**Output 1:** Move disk from A to C

**Stack of activation records:**

| hanoi: disks = 1, source = A, spare = B, dest = C, ip = 11 |
| hanoi: disks = 2, source = A, spare = C, dest = B, ip = 6 |
| hanoi: disks = 3, source = A, spare = B, dest = C, ip = 6 |
| main: ip = 15 |

**Stack of activation records:**

| hanoi: disks = 2, source = A, spare = C, dest = B, ip = 6 |
| hanoi: disks = 3, source = A, spare = B, dest = C, ip = 6 |
| main: ip = 15 |

**Output 2:** Move disk from A to B
Stack of activation records:
- hanoi: disks = 2, source = A, spare = C, dest = B, ip = 7
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 6
- main: ip = 15

Stack of activation records:
- hanoi: disks = 1, source = C, spare = A, dest = B, ip = 3
- hanoi: disks = 2, source = A, spare = C, dest = B, ip = 11
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 6
- main: ip = 15

Output 3: Move disk from C to B
- hanoi: disks = 1, source = C, spare = A, dest = B, ip = 11
- hanoi: disks = 2, source = A, spare = C, dest = B, ip = 11
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 6
- main: ip = 15

Stack of activation records:
- hanoi: disks = 2, source = A, spare = C, dest = B, ip = 11
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 6
- main: ip = 15

Stack of activation records:
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 6
- main: ip = 15

Output 4: Move disk from A to C

Stack of activation records:
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 7
- main: ip = 15

Stack of activation records:
- hanoi: disks = 2, source = B, spare = A, dest = C, ip = 3
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 11
- main: ip = 15

Stack of activation records:
- hanoi: disks = 1, source = B, spare = C, dest = A, ip = 3
- hanoi: disks = 2, source = B, spare = A, dest = C, ip = 6
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 11
- main: ip = 15

Output 5: Move disk from B to A

Stack of activation records:
- hanoi: disks = 1, source = B, spare = C, dest = A, ip = 11
- hanoi: disks = 2, source = B, spare = A, dest = C, ip = 6
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 11
- main: ip = 15

Stack of activation records:
- hanoi: disks = 2, source = B, spare = A, dest = C, ip = 6
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 11
- main: ip = 15

Output 6: Move disk from B to C
Stack of activation records:
- hanoi: disks = 2, source = B, spare = A, dest = C, ip = 7
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 11
- main: ip = 15

Stack of activation records:
- hanoi: disks = 1, source = A, spare = B, dest = C, ip = 3
- hanoi: disks = 2, source = B, spare = A, dest = C, ip = 11
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 11
- main: ip = 15

Output 7: Move disk from A to C
- hanoi: disks = 1, source = A, spare = B, dest = C, ip = 11
- hanoi: disks = 2, source = B, spare = A, dest = C, ip = 11
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 11
- main: ip = 15

Stack of activation records:
- hanoi: disks = 2, source = B, spare = A, dest = C, ip = 11
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 11
- main: ip = 15

Stack of activation records:
- hanoi: disks = 3, source = A, spare = B, dest = C, ip = 11
- main: ip = 15

Stack of activation records:
- main: ip = 15

Stack of activation records: