

Induction Step: $n = c + 1$. ('from' = 1, 'to' = 3, 'aux' = 2 initially) $\times \times$

In ~~recurs~~ line 7, we call recursive ~~tower of Hanoi~~ ^{correctly compute} $\text{tower of Hanoi}(c, \text{from}, \text{aux}, \text{to})$.

• By induction hypothesis, we ^{correctly compute} move the c ~~smallest~~ disks arranged in ascending order of diameter over the $(c+1)$ th disk ~~to~~ from the 'from' tower to the 'aux' tower via the 'to' tower, which acts as the auxiliary tower here. ~~for in other words, from tower~~ (All conds. are maintained)

• We aptly print the move of the $(c+1)$ th disk in line 8 \Rightarrow from 'from' to 'to' tower.

• In line 9, we call recursive $\text{tower of Hanoi}(c, \text{aux}, \text{to}, \text{from})$

By induction hypothesis, we ^{correctly compute} move the c smallest disks arranged in ascending order of diameter from the 'aux' tower to the 'to' tower via the 'from' tower, which acts as the auxiliary tower here. (All conds. are maintained)

\therefore Since we haven't violated the fact that no larger disk can be over a smaller disk, we see we have correctly moved the $c+1$ disks from the 'from' tower to the 'to' tower via the 'aux' tower. \square