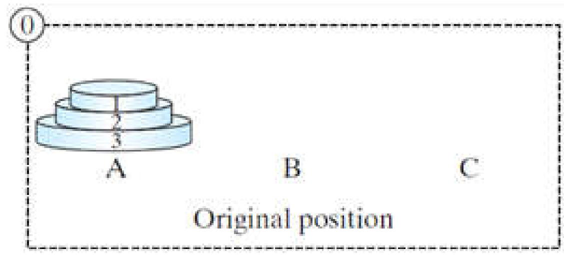
Tower of Hanoi

Simple Solution to a Difficult Problem:

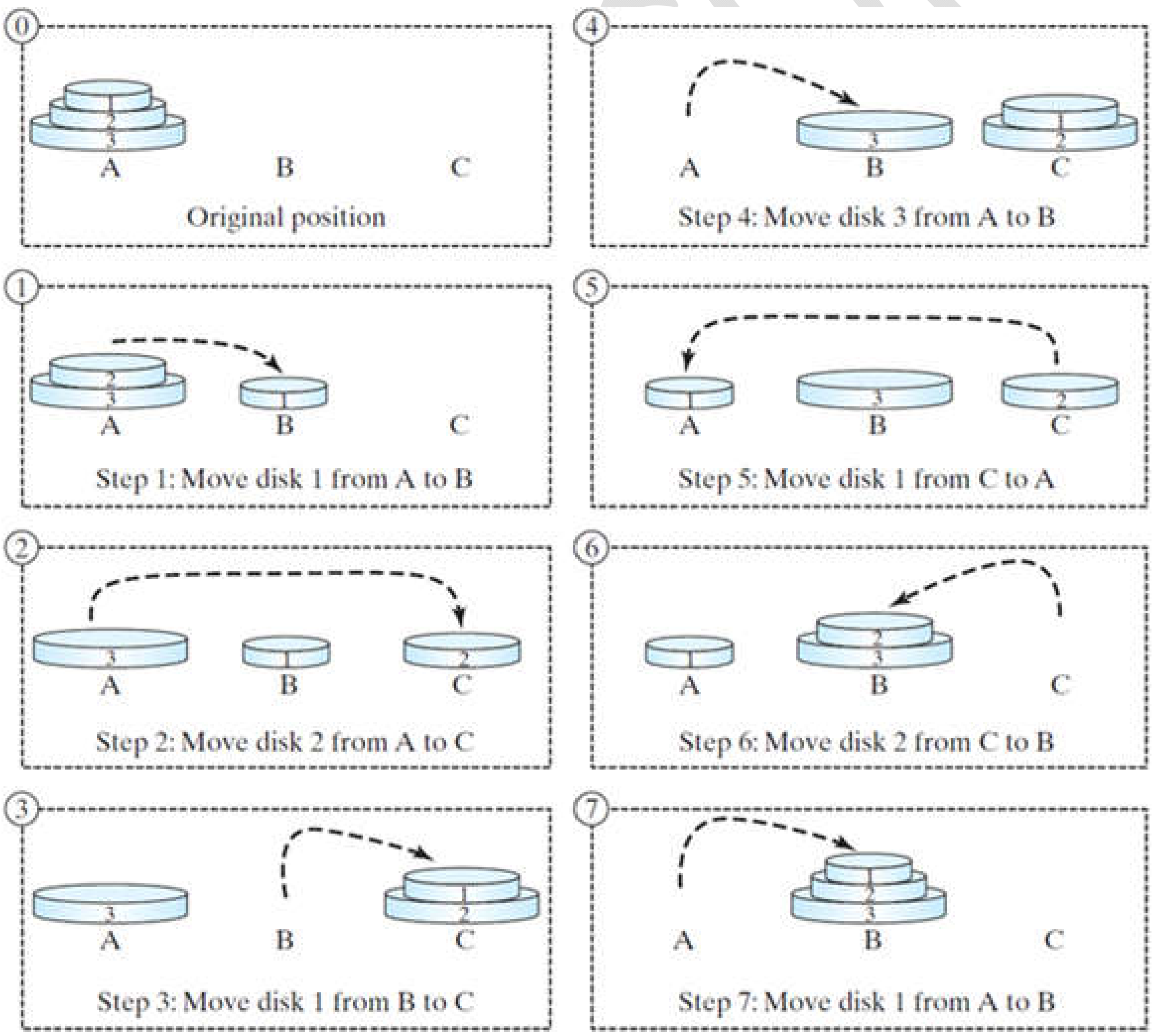


Rules:

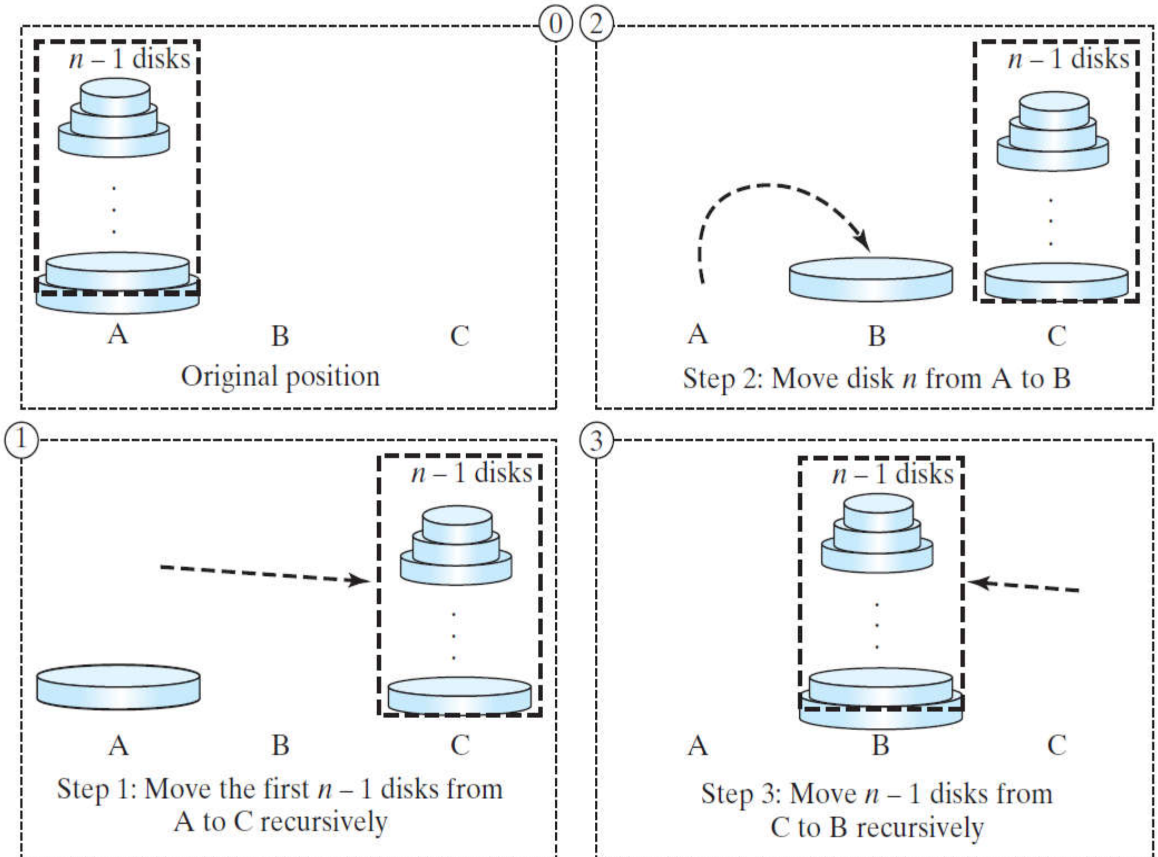
- Move one disk at a time. Each disk moved must be topmost disk.
- No disk may rest on top of a disk smaller than itself.
- You can store disks on the 2nd pole temporarily, as long as you observe the previous two rules.

Tower of Hanoi flash @ **https://www.mathsisfun.com/games/towerofhanoi.html**

Sequence of moves for solving the Towers of Hanoi problem with three disks:



The Tower of Hanoi problem can be decomposed into three sub-problems.



- Move the first **n-1** disks from **A** to **C** with the assistance of tower **B**.
- Move disk **n** from **A** to **B**.
- Move **n-1** disks from **C** to **B** with the assistance of tower **A**.

Solutions:

```
Algorithm solveTowers(numberOfDisks, startPole, tempPole, endPole)
if (numberOfDisks == 1)
    Move disk from startPole to endPole
else
{
    solveTowers(numberOfDisks - 1, startPole, endPole, tempPole)
    Move disk from startPole to endPole
    solveTowers(numberOfDisks - 1, tempPole, startPole, endPole)
}
```