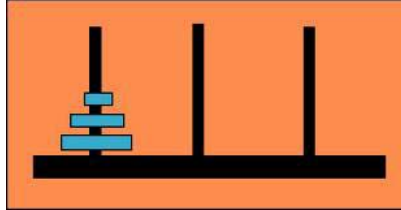


AI Classics presents The Towers of Hanoi!

The Towers of Hanoi problem is as follows. There are 3 pegs that can hold disks of 3 different sizes. You start with all disks being on the left peg, as shown below. The goal is to get all disks to the right peg, but you can only move one disk at a time, and you can never put a disk on top of a smaller disk.



- Show the first 4 levels of the state-tree as generated by breadth-first search. Don't expand any node that you expand elsewhere by putting an X under any node you already generated elsewhere. I have indicated the first 2 levels in the slides. Your task is to fill out the next 2 levels from there.
- Show the first 20 steps of a state-tree as generated by depth-first search, where you give priority to the actions as follows: when you can move multiple disks, move the larger one, and when you can move a disk to multiple pegs, move it to the rightmost one. I have indicated the first 6 steps. Your task is to indicate the next 14 steps from there.
- Compare and contrast the way this search algorithm solves the problem to the way humans would likely try and solve this problem. What similarities do you see? What differences do you see?
- Do you feel an AI search algorithm is intelligent? Why or why not?