CSE-404: Artificial Intelligence Sessional

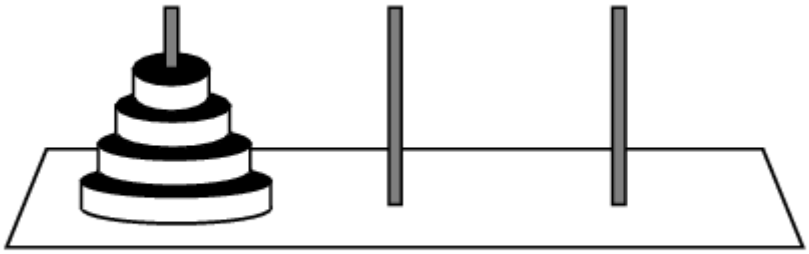
Task – 0: Tower of Hanoi

(State Representation and Mapping)

Problem Statement:

Quote from Wikipedia,

> *"The Tower of Hanoi is a mathematical game or puzzle. It consists of three rods and a number of disks of different sizes, which can slide onto any rod. The puzzle starts with the disks in a neat stack in ascending order of size on one rod, the smallest at the top, thus making a conical shape.*
>
> *The objective of the puzzle is to move the entire stack to another rod, obeying the following simple rules:*
>
> 1. *Only one disk can be moved at a time.*
> 2. *Each move consists of taking the upper disk from one of the stacks and placing it on top of another stack.*
> 3. *No disk may be placed on top of a smaller disk."*



Source: http://mathworld.wolfram.com/TowerofHanoi.html

You are required to write a program that is able to solve the puzzle **for three disks and three towers** and show the necessary steps to reach the solution. **Use the outline provided in the sessional class.**

Marks Distribution:

Submission	State class design	generateNextState()	isIllegalState()	BFS	+ UI (Bonus)	**Total**
10	20	25	25	20	20	**(100+20)**

Submission:

1. Put all necessary file in a single Folder. Name it: cse404<SectionA1/B1/A2/B2>_task0_<Your Roll Number>
2. Put the folder in a zip file. Name it the same as that of folder.
3. Email the zip file in this email: **submission.cse.mist@gmail.com** **. The subject of the email must be same as the name of your folder.**
4. **Deadline: 28 February, 2018 11:59PM.**

* Please note: State representation will be more complex than simply keeping the position of the disks (as shown in the class). You'll have to find a way to keep the ordering of the disks as well.