

Moves for exercise 1:

- 1) Disk 0 to tower 1
- 2) Disk 1 to tower 2
- 3) Disk 0 to tower 2
- 4) Disk 2 to tower 1
- 5) Disk 0 to tower 0
- 6) Disk 1 to tower 1
- 7) Disk 0 to tower 1

4)  $2^n - 1$  moves are required where  $n$  is the number of disks. This is an exponential algorithm.

7) Tower of Hanoi is tail recursive with elements of backtracking. There is one distinct answer, but there are times when the same moves will need to be repeated.

9) There is no way to produce a path of length 25 if there are any walls in the maze. MazeMaker also creates a maze that does not reach the bottom right coordinate, so this will never happen.

10) MazeMaker2 creates a maze where there exists a path of length 25 and 36. However, the path is not displayed and the program states there is no solution.

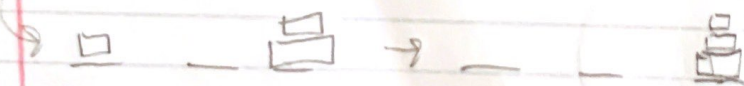
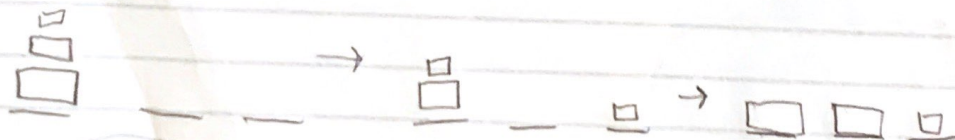
12) It does not find a solution because it is, again, looking for a solution of length 25, which will not be possible without backtracking.

13) It finds and displays a solution but prints "no solution path" due to a statement in the Maze.java class.

14) 3 Queens cannot be placed on a 3x3 board. They can, however, be placed on a 4x4 board.

Exercise 6 is on the next page

6.



Counting the beginning, there are 8 total snapshots