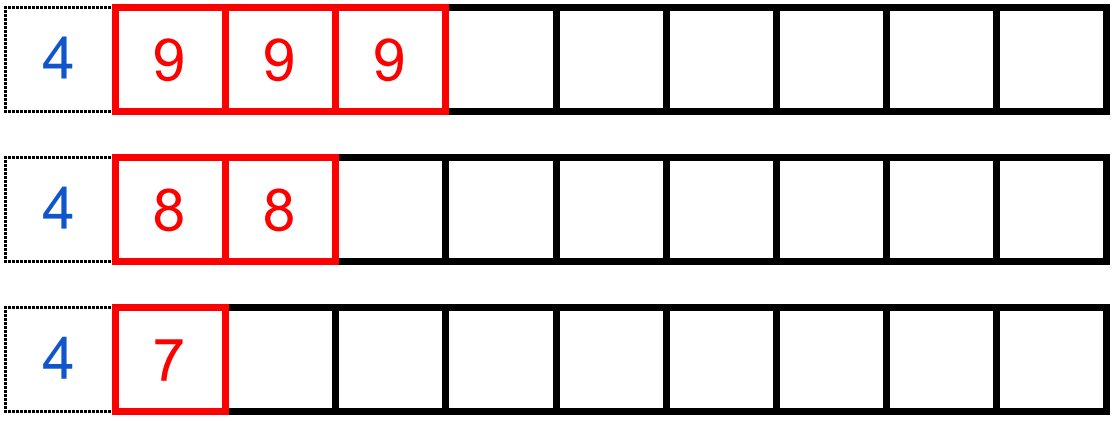
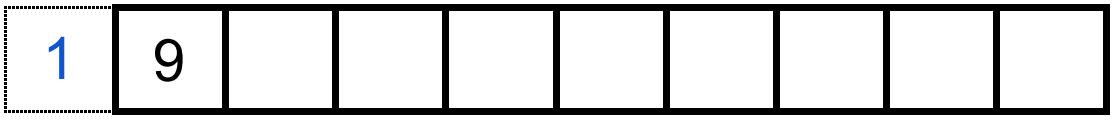
Towers Solver

Easy Steps

- Tallest tower cannot occur in the first (clue-1) positions, the second tallest tower cannot occur in the first (clue-2) positions, ect.

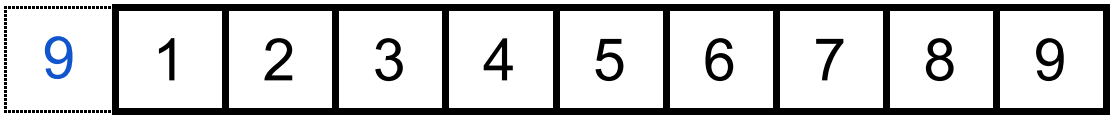


- Only one tower can be visible, so the first tower must be the tallest tower

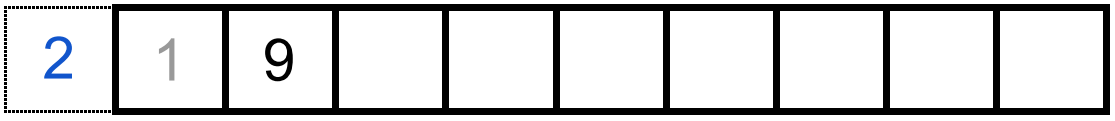


- For clues of 2, second tallest tower cannot be the second tallest one

- If clue = dim[1], all towers are visible in ascending order



- For clue of 2, if first tower is smallest one, second tower must be tallest one

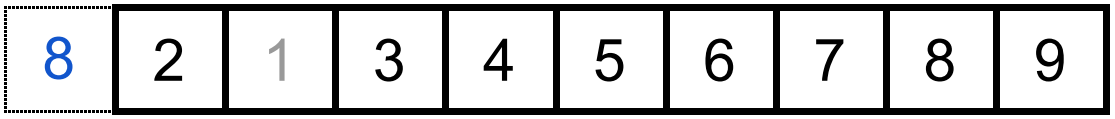


[1] Dim = Dimension

- Tallest tower at clue-th position and all clue highest towers (in any order) filled in after the tallest one, means the leftover ones should form an upcounting sequence

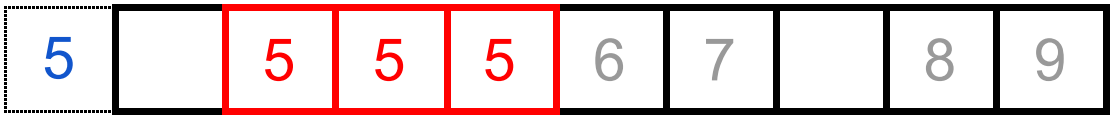
- If the first clue-1 towers have ascending values starting with 1, then the next tower must be the tallest tower

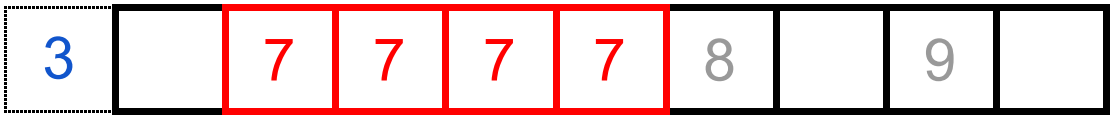
- If clue is 1 smaller than dim and second cell is a one, then there is only one possible solution for that line (up-counting)



- If first cell empty and filledPackedFromBack[2] = clue-1, first tower must be the highest remaining tower

- If filledFromBack[3] = clue-1 and the towers before the clue-1-th highest tower are empty, then those towers (except the closest one to the clue) can't have height dim-clue+1



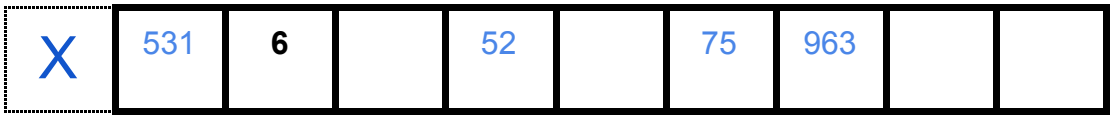


[2] Highest towers in descending order (step 1) next to one another, starting from the back
[3] Highest towers in descending order (step 1) not necessarily next to one another, starting from the back

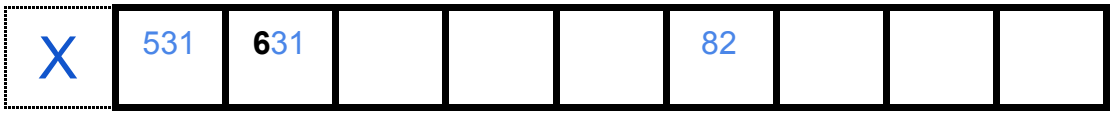
- If first cell is zero, second cell and tallest tower are filled in, and there is a visible sequence of clue number of towers, then the first tower must have a higher value than the second one

- If the clue-1 highest towers are present, not in ascending order, then the first tower cannot be the clue-th highest tower

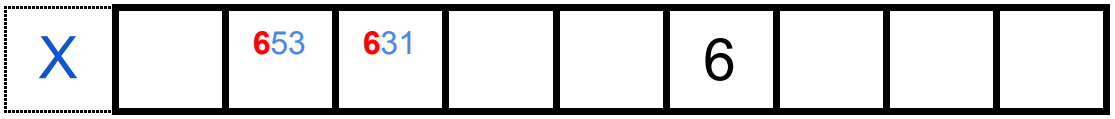
- Only one Pencil-Mark left, so this tower must have this height



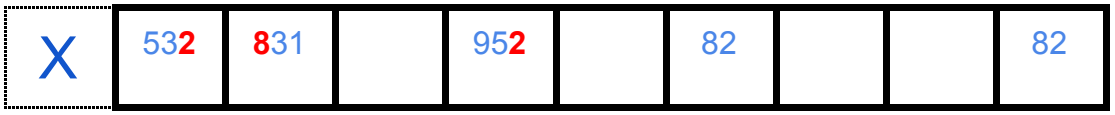
- Only tower in this line with a certain Pencil-Mark, must have this value



- Removing Pencil-Marks of each cell in this line with the value of a filled in cell on that line

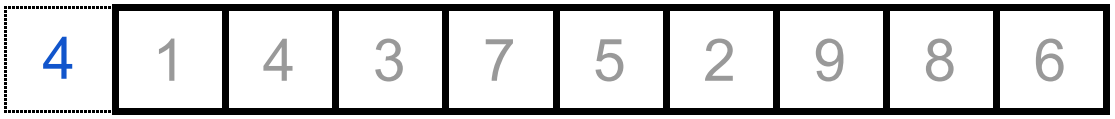


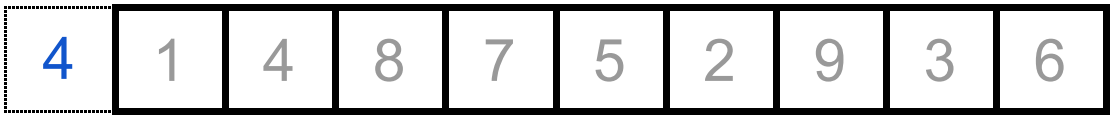
- When two cells in the line have matching Pencil-Marks (and two of them), those values can be excluded in Pencil-Marks of the other cells in that line

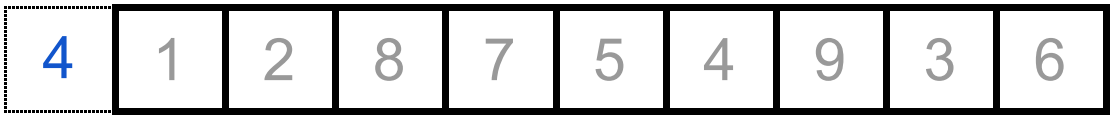


Complex Steps

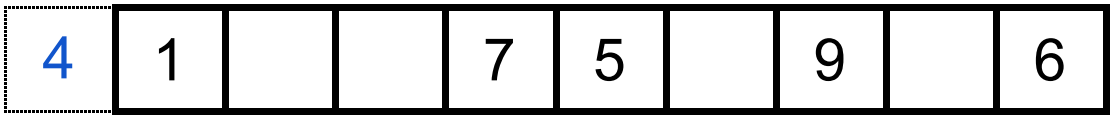
- Only possible cell value in all permutations of this line, means this is the correct value



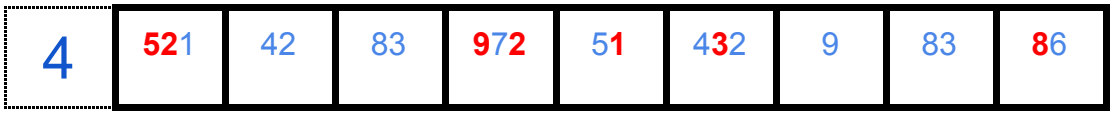




Then



- Removing Pencil-Marks that never occur in any permutation of this line



Guessing and Backtracking