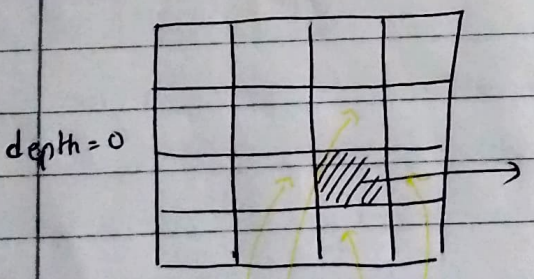
576: Out of Boundary Paths

maxMove :- Is given to end the recursion.
(Since we can come to the same position again in the grid)

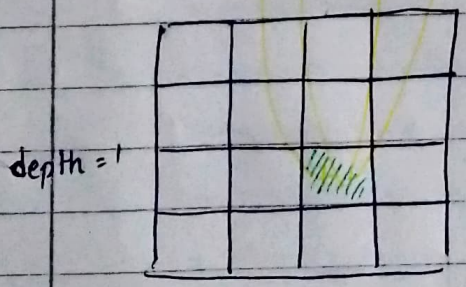
① Recursive solution with memorization is straightforward approach to solve this problem.
time - $O(mn \times maxMove)$ space - $O(mn \times maxMove)$

② Hard part is converting above memorization solution to tabulation.
No. of state variables involved :- 3 (row, col, depth)
↳ moves
∴ 3 for loops required

This also means that we would need 3 dimensional matrix to store the information.



This would store no. of ways we can go out of boundary for a particular depth.



To calculate the ~~depth~~ values of matrix at depth 1, we would need the previous values (at depth 0)

And since we are only dependent on previous depth we don't need 3 dimensional matrix.
(It's like using last 2 variables to get 3rd variable)
we need only last ~~two~~ matrix to create a new one.

space: $O(mn)$