2409. Number of Increasing Paths in a Grid

Difficulty : Hard

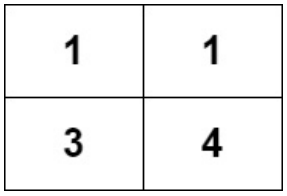
https://leetcode.com/problems/number-of-increasing-paths-in-a-grid

You are given an `m x n` integer matrix `grid`, where you can move from a cell to any adjacent cell in all `4` directions.

Return *the number of **strictly increasing** paths in the grid such that you can start from **any** cell and end at **any** cell.* Since the answer may be very large, return it **modulo** $10^9 + 7$.

Two paths are considered different if they do not have exactly the same sequence of visited cells.

Example 1:




```
Input: grid = [[1,1],[3,4]]
Output: 8
Explanation: The strictly increasing paths are:
- Paths with length 1: [1], [1], [3], [4].
- Paths with length 2: [1 -> 3], [1 -> 4], [3 -> 4].
- Paths with length 3: [1 -> 3 -> 4].
The total number of paths is 4 + 3 + 1 = 8.
```

Example 2:

```
Input: grid = [[1],[2]]
Output: 3
Explanation: The strictly increasing paths are:
- Paths with length 1: [1], [2].
- Paths with length 2: [1 -> 2].
The total number of paths is 2 + 1 = 3.
```

Constraints:

- `m == grid.length`
- `n == grid[i].length`
- `1 <= m, n <= 1000`
- `1 <= m * n <= 10^5`
- `1 <= grid[i][j] <= 10^5`