2510. Check if There is a Path With Equal Number of 0's And 1's Premium

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You are given a **0-indexed** m x n **binary** matrix grid. You can move from a cell (row, col) to any of the cells (row + 1, col) or (row, col + 1).

Return true if there is a path from (0, 0) to (m - 1, n - 1) that visits an **equal** number of 0's and 1's. Otherwise return false.

Example 1:

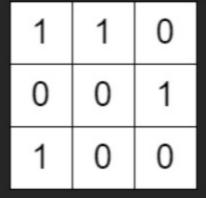
| 0 | 1 | 0 | 0 |
|---|---|---|---|
| 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 0 |

Input: grid = [[0,1,0,0],[0,1,0,0],[1,0,1,0]]

Output: true

Explanation: The path colored in blue in the above diagram is a valid path because we have 3 cells with a value of 1 and 3 with a value of 0. Since there is a valid path, we return true.

Example 2:



Input: grid = [[1,1,0],[0,0,1],[1,0,0]]

Output: false

Explanation: There is no path in this grid with an equal number of 0's and 1's.

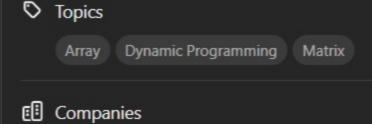
Constraints:

- m == grid.length
- n == grid[i].length
- 2 <= m, n <= 100
- grid[i][j] is either 0 or 1.

Seen this question in a real interview before? 1/5



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Q Hint 1 Can you use dynamic programming to solve the problem?

O Hint 2

Let dp[i][j][diff] be true if there is a path from the cell (i, j) to (m - 1, n - 1) such that the difference between the number of 0's and the number of 1's that we visited so far is diff, or false otherwise. The answer to the problem will be dp[0] [0][0]. How do you compute this dp?

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