

2577. Minimum Time to Visit a Cell In a Grid

Solved ●

Hard Topics Companies Hint

You are given a $m \times n$ matrix `grid` consisting of **non-negative** integers where `grid[row][col]` represents the **minimum** time required to be able to visit the cell `(row, col)`, which means you can visit the cell `(row, col)` only when the time you visit it is greater than or equal to `grid[row][col]`.

You are standing in the **top-left** cell of the matrix in the 0^{th} second, and you must move to **any** adjacent cell in the four directions: up, down, left, and right. Each move you make takes 1 second.

Return the **minimum** time required in which you can visit the bottom-right cell of the matrix. If you cannot visit the bottom-right cell, then return `-1`.

Example 1:

0	1	3	2
5	1	2	5
4	3	8	6

Input: `grid = [[0,1,3,2],[5,1,2,5],[4,3,8,6]]`

Output: 7

Explanation: One of the paths that we can take is the following:

- at $t = 0$, we are on the cell `(0,0)`.
- at $t = 1$, we move to the cell `(0,1)`. It is possible because `grid[0][1] <= 1`.
- at $t = 2$, we move to the cell `(1,1)`. It is possible because `grid[1][1] <= 2`.
- at $t = 3$, we move to the cell `(1,2)`. It is possible because `grid[1][2] <= 3`.
- at $t = 4$, we move to the cell `(1,1)`. It is possible because `grid[1][1] <= 4`.
- at $t = 5$, we move to the cell `(1,2)`. It is possible because `grid[1][2] <= 5`.
- at $t = 6$, we move to the cell `(1,3)`. It is possible because `grid[1][3] <= 6`.
- at $t = 7$, we move to the cell `(2,3)`. It is possible because `grid[2][3] <= 7`.

The final time is 7. It can be shown that it is the minimum time possible.

Example 2:

0	2	4
3	2	1
1	0	4

Input: `grid = [[0,2,4],[3,2,1],[1,0,4]]`

Output: -1

Explanation: There is no path from the top left to the bottom-right cell.

Constraints:

- `m == grid.length`
- `n == grid[i].length`

- `2 <= m, n <= 1000`
- `4 <= m * n <= 105`
- `0 <= grid[i][j] <= 105`
- `grid[0][0] == 0`

Seen this question in a real interview before? 1/4

Yes No

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