

# 2697. Minimum Number of Visited Cells in a Grid

## Difficulty : Hard

<https://leetcode.com/problems/minimum-number-of-visited-cells-in-a-grid>

You are given a **0-indexed**  $m \times n$  integer matrix `grid`. Your initial position is at the **top-left** cell  $(0, 0)$ .

Starting from the cell  $(i, j)$ , you can move to one of the following cells:

- Cells  $(i, k)$  with  $j < k \leq \text{grid}[i][j] + j$  (rightward movement), or
- Cells  $(k, j)$  with  $i < k \leq \text{grid}[i][j] + i$  (downward movement).

Return *the minimum number of cells you need to visit to reach the **bottom-right** cell*  $(m - 1, n - 1)$ . If there is no valid path, return -1.

### Example 1:

3	4	2	1
4	2	3	1
2	1	0	0
2	4	0	0

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

**Output:** 4

**Explanation:** The image above shows one of the paths that visits exactly 4 cells.

### Example 2:

3	4	2	1
4	2	1	1
2	1	1	0
3	4	1	0

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

**Output:** 3

**Explanation:** The image above shows one of the paths that visits exactly 3 cells.

### Example 3:

2	1	0
1	0	0

**Input:** `grid = [[2,1,0],[1,0,0]]`

**Output:** -1

**Explanation:** It can be proven that no path exists.

### Constraints:

- $m == \text{grid.length}$
- $n == \text{grid}[i].\text{length}$
- $1 \leq m, n \leq 10^5$
- $1 \leq m * n \leq 10^5$
- $0 \leq \text{grid}[i][j] < m * n$
- $\text{grid}[m - 1][n - 1] == 0$

