

# Problem 3341: Find Minimum Time to Reach Last Room I

## Problem Information

**Difficulty:** Medium

**Acceptance Rate:** 55.53%

**Paid Only:** No

**Tags:** Array, Graph, Heap (Priority Queue), Matrix, Shortest Path

## Problem Description

There is a dungeon with `n x m` rooms arranged as a grid.

You are given a 2D array `moveTime` of size `n x m`, where `moveTime[i][j]` represents the \*\*minimum\*\* time in seconds \*\*after\*\* which the room opens and can be moved to. You start from the room `(0, 0)` at time `t = 0` and can move to an \*\*adjacent\*\* room. Moving between adjacent rooms takes \_exactly\_ one second.

Return the \*\*minimum\*\* time to reach the room `(n - 1, m - 1)`.

Two rooms are \*\*adjacent\*\* if they share a common wall, either \_horizontally\_ or \_vertically\_.

**Example 1:**

**Input:** moveTime = [[0,4],[4,4]]

**Output:** 6

**Explanation:**

The minimum time required is 6 seconds.

\* At time `t == 4`, move from room `(0, 0)` to room `(1, 0)` in one second. \* At time `t == 5`, move from room `(1, 0)` to room `(1, 1)` in one second.

**\*\*Example 2:\*\***

**\*\*Input:\*\*** moveTime = [[0,0,0],[0,0,0]]

**\*\*Output:\*\*** 3

**\*\*Explanation:\*\***

The minimum time required is 3 seconds.

\* At time `t == 0`, move from room `(0, 0)` to room `(1, 0)` in one second.  
\* At time `t == 1`, move from room `(1, 0)` to room `(1, 1)` in one second.  
\* At time `t == 2`, move from room `(1, 1)` to room `(1, 2)` in one second.

**\*\*Example 3:\*\***

**\*\*Input:\*\*** moveTime = [[0,1],[1,2]]

**\*\*Output:\*\*** 3

**\*\*Constraints:\*\***

\* `2 <= n == moveTime.length <= 50` \* `2 <= m == moveTime[i].length <= 50` \* `0 <= moveTime[i][j] <= 109`

## Code Snippets

**C++:**

```
class Solution {
public:
    int minTimeToReach(vector<vector<int>>& moveTime) {
        }
};
```

**Java:**

```
class Solution {  
public int minTimeToReach(int[][] moveTime) {  
}  
}  
}
```

**Python3:**

```
class Solution:  
    def minTimeToReach(self, moveTime: List[List[int]]) -> int:
```