Problem 1391: Check if There is a Valid Path in a Grid

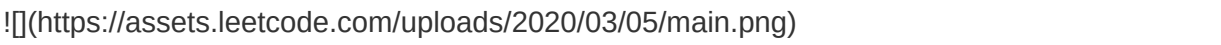
Problem Information

Difficulty: Medium
Acceptance Rate: 49.66%
Paid Only: No
Tags: Array, Depth-First Search, Breadth-First Search, Union Find, Matrix

Problem Description

You are given an `m x n` `grid`. Each cell of `grid` represents a street. The street of `grid[i][j]` can be:

* `1` which means a street connecting the left cell and the right cell. * `2` which means a street connecting the upper cell and the lower cell. * `3` which means a street connecting the left cell and the lower cell. * `4` which means a street connecting the right cell and the lower cell. * `5` which means a street connecting the left cell and the upper cell. * `6` which means a street connecting the right cell and the upper cell.

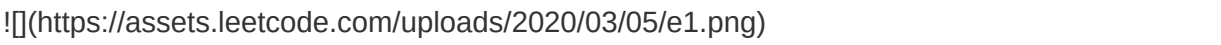


You will initially start at the street of the upper-left cell `(0, 0)`. A valid path in the grid is a path that starts from the upper left cell `(0, 0)` and ends at the bottom-right cell `(m - 1, n - 1)`. **The path should only follow the streets**.

Notice that you are **not allowed** to change any street.

Return `true` _if there is a valid path in the grid or_`false` _otherwise_.

Example 1:



Input: grid = [[2,4,3],[6,5,2]] **Output:** true **Explanation:** As shown you can start at cell (0, 0) and visit all the cells of the grid to reach (m - 1, n - 1).

Example 2:

Input: grid = [[1,2,1],[1,2,1]] **Output:** false **Explanation:** As shown you the street at cell (0, 0) is not connected with any street of any other cell and you will get stuck at cell (0, 0)

Example 3:

Input: grid = [[1,1,2]] **Output:** false **Explanation:** You will get stuck at cell (0, 1) and you cannot reach cell (0, 2).

Constraints:

* `m == grid.length` * `n == grid[i].length` * `1 <= m, n <= 300` * `1 <= grid[i][j] <= 6`

Code Snippets

C++:

```
class Solution {
public:
bool hasValidPath(vector<vector<int>>& grid) {

}
};
```

Java:

```
class Solution {
public boolean hasValidPath(int[][] grid) {

}
}
```

Python3:

```
class Solution:
def hasValidPath(self, grid: List[List[int]]) -> bool:
```