

Problem 2290: Minimum Obstacle Removal to Reach Corner

Problem Information

Difficulty: Hard

Acceptance Rate: 70.30%

Paid Only: No

Tags: Array, Breadth-First Search, Graph, Heap (Priority Queue), Matrix, Shortest Path

Problem Description

You are given a **0-indexed** 2D integer array `grid` of size `m x n`. Each cell has one of two values:

* `0` represents an **empty** cell, * `1` represents an **obstacle** that may be removed.

You can move up, down, left, or right from and to an empty cell.

Return _the**minimum** number of **obstacles** to **remove** so you can move from the upper left corner `(0, 0)` to the lower right corner `(m - 1, n - 1)`.

Example 1:

Input: grid = [[0,1,1],[1,1,0],[1,1,0]] **Output:** 2 **Explanation:** We can remove the obstacles at (0, 1) and (0, 2) to create a path from (0, 0) to (2, 2). It can be shown that we need to remove at least 2 obstacles, so we return 2. Note that there may be other ways to remove 2 obstacles to create a path.

Example 2:

Input: grid = [[0,1,0,0,0],[0,1,0,1,0],[0,0,0,1,0]] **Output:** 0 **Explanation:** We can move from (0, 0) to (2, 4) without removing any obstacles, so we return 0.

Constraints:

* `m == grid.length` * `n == grid[i].length` * `1 <= m, n <= 105` * `2 <= m * n <= 105` * `grid[i][j]` is either `0` **or** `1`. * `grid[0][0] == grid[m - 1][n - 1] == 0`

Code Snippets

C++:

```
class Solution {
public:
    int minimumObstacles(vector<vector<int>>& grid) {
        }
};
```

Java:

```
class Solution {
    public int minimumObstacles(int[][] grid) {
        }
}
```

Python3:

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