

1102. Path With Maximum Minimum Value

Medium 817 89 Add to List Share

Given an $m \times n$ integer matrix `grid`, return the *maximum score* of a path starting at $(0, 0)$ and ending at $(m - 1, n - 1)$ moving in the 4 cardinal directions.

The **score** of a path is the minimum value in that path.

- For example, the score of the path $8 \rightarrow 4 \rightarrow 5 \rightarrow 9$ is 4.

Example 1:

5	4	5
1	2	6
7	4	6

Input: `grid = [[5,4,5],[1,2,6],[7,4,6]]`
Output: 4
Explanation: The path with the maximum score is highlighted in yellow.

Example 2:

2	2	1	2	2	2
1	2	2	2	1	2

Input: `grid = [[2,2,1,2,2,2],[1,2,2,2,1,2]]`
Output: 2

Example 3:

3	4	6	3	4
0	2	1	1	7
8	8	3	2	7
3	2	4	9	8
4	1	2	0	0
4	6	5	4	3

Input: `grid = [[3,4,6,3,4],[0,2,1,1,7],[8,8,3,2,7],[3,2,4,9,8],[4,1,2,0,0],[4,6,5,4,3]]`
Output: 3

Constraints:

- $m == \text{grid.length}$
- $n == \text{grid}[i].\text{length}$
- $1 \leq m, n \leq 100$
- $0 \leq \text{grid}[i][j] \leq 10^9$

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What if we sort each cell of the matrix by the value?

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Don't include small values in your path if you can only include large values.

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Let's keep adding a possible cell to use in the path incrementally with decreasing values.

Hide Hint 4 ^

If the start and end cells are connected then we don't need to add more cells.

Hide Hint 5 ^

Use union-find data structure to check connectivity and return as answer the value of the given cell that makes start and end cells connected.

```
1 class Solution {
2     public int maximumMinimumPath(int[][] grid) {
3
4     }
5 }
```