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Wildfire

Question 255 of 1028

Medium

You are given a two-dimensional integer `matrix` representing a forest where a cell is:

- `0` if it's empty
- `1` if it's a tree
- `2` if it's a tree on fire

Every day, a tree catches fire if there is an adjacent (top, down, left, right) tree that's also on fire. Return the number of days it would take for every tree to be on fire. If it's not possible, return `-1`.

Constraints

- `0 ≤ n * m ≤ 200,000` where `n` and `m` are the number of rows and columns in `matrix`

Example 1

Input

```
matrix = [
    [1, 1, 1],
    [1, 2, 1],
    [1, 1, 1]
]
```

Output

```
2
```

Explanation

On the first day fire will spread to everywhere except the corner trees and then the next day they will spread to the corner trees.

Example 2

Input

Lachezar

```java
import java.util.*;

class Solution {
    public int solve(int[][] matrix)

    }
}
```

```
    [0, 0, 0],

    [1, 2, 1]
]
```

Output