2174. Remove All Ones With Row and Column Flips II Premium

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You are given a **0-indexed** `m x n` **binary** matrix `grid`.

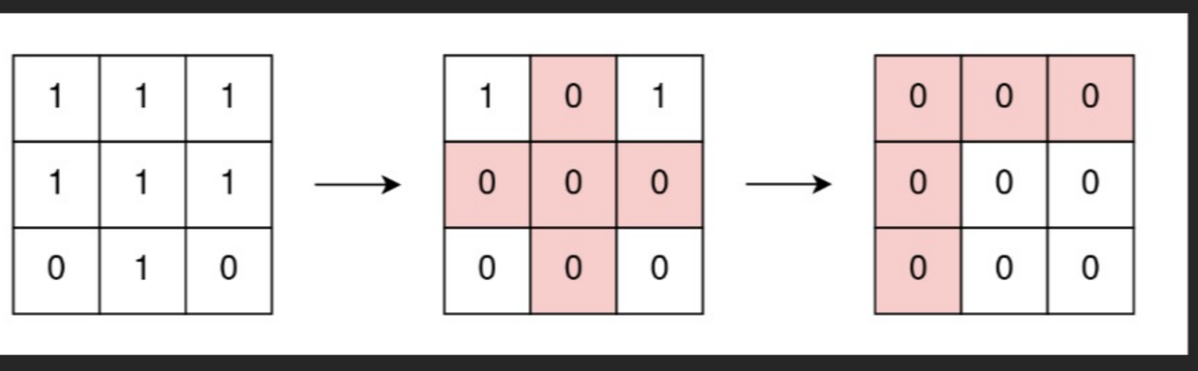
In one operation, you can choose any `i` and `j` that meet the following conditions:

- `0 <= i < m`
- `0 <= j < n`
- `grid[i][j] == 1`

and change the values of **all** cells in row `i` and column `j` to zero.

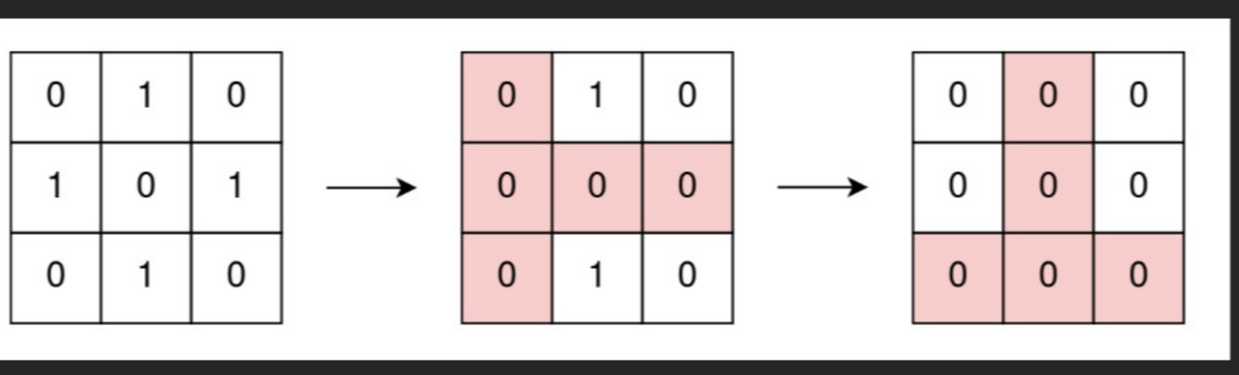
Return *the **minimum** number of operations needed to remove all* `1`*'s from* `grid`.

Example 1:



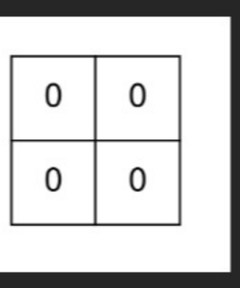

```
Input: grid = [[1,1,1],[1,1,1],[0,1,0]]
Output: 2
Explanation:
In the first operation, change all cell values of row 1 and column 1 to zero.
In the second operation, change all cell values of row 0 and column 0 to zero.
```

Example 2:




```
Input: grid = [[0,1,0],[1,0,1],[0,1,0]]
Output: 2
Explanation:
In the first operation, change all cell values of row 1 and column 0 to zero.
In the second operation, change all cell values of row 2 and column 1 to zero.
Note that we cannot perform an operation using row 1 and column 1 because grid[1][1] != 1.
```

Example 3:




```
Input: grid = [[0,0],[0,0]]
Output: 0
Explanation:
There are no 1's to remove so return 0.
```

Constraints:

- `m == grid.length`
- `n == grid[i].length`
- `1 <= m, n <= 15`
- `1 <= m * n <= 15`
- `grid[i][j]` is either `0` or `1`.

Seen this question in a real interview before? 1/5

Yes No

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Hint 1

With the given constraints, could a brute force solution pass?

Hint 2

What would a brute force solution look like?

Hint 3

We can try every single possibility of choosing to do an operation on a cell with a 1 or choosing to ignore it.

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