# 2128. Remove All Ones With Row and Column Flips Premium

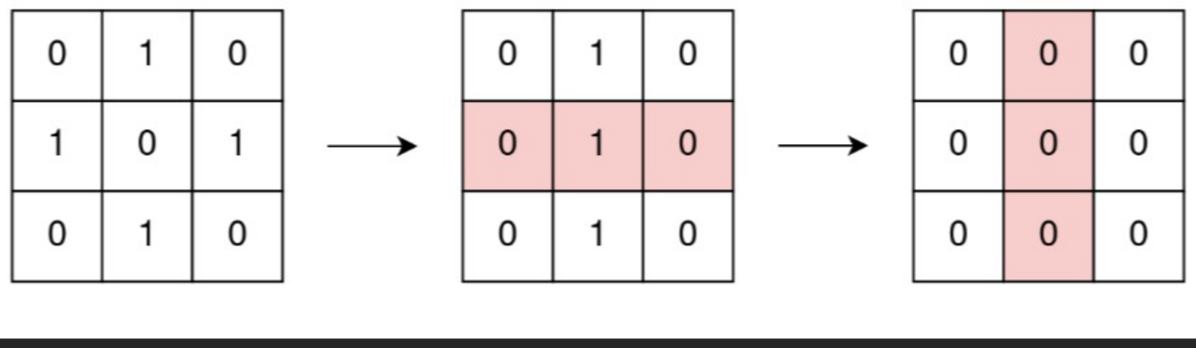
Medium | Topics | Companies | Hint

You are given an `m x n` binary matrix `grid`.

In one operation, you can choose **any** row or column and flip each value in that row or column (i.e., changing all `0`'s to `1`'s, and all `1`'s to `0`'s).

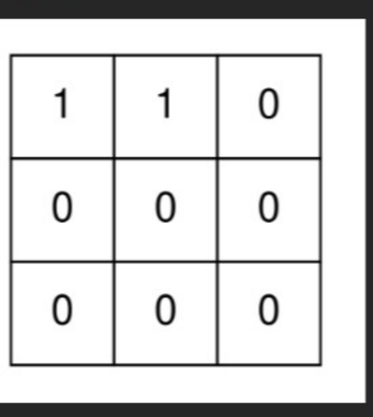
Return `true` *if it is possible to remove all* `1`*'s from* `grid` using **any** number of operations or `false` otherwise.

**Example 1:**



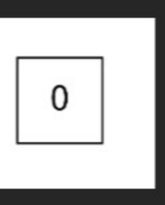

```
Input: grid = [[0,1,0],[1,0,1],[0,1,0]]
Output: true
Explanation: One possible way to remove all 1's from grid is to:
- Flip the middle row
- Flip the middle column
```

**Example 2:**




```
Input: grid = [[1,1,0],[0,0,0],[0,0,0]]
Output: false
Explanation: It is impossible to remove all 1's from grid.
```

**Example 3:**




```
Input: grid = [[0]]
Output: true
Explanation: There are no 1's in grid.
```

**Constraints:**

- `m == grid.length`
- `n == grid[i].length`
- `1 <= m, n <= 300`
- `grid[i][j]` is either `0` or `1`.

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

Yes No

Accepted 33.6K | Submissions 44.1K | Acceptance Rate 76.2%

Topics

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Hint 1

Does the order, in which you do the operations, matter?

Hint 2

No, it does not. An element will keep its original value if the number of operations done on it is even and vice versa. This also means that doing more than 1 operation on the same row or column is unproductive.

Hint 3

Try working backward, start with a matrix of all zeros and try to construct grid using operations.

Hint 4

Start with operations on columns, after doing them what do you notice about each row?

Hint 5

Each row is the exact same. If we then flip some rows, that leaves only two possible arrangements for each row: the same as the original or the opposite.

Similar Questions

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| Minimum Operations to Remove Adjacent Ones in Matrix | Hard |
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| Difference Between Ones and Zeros in Row and Column | Medium |

Discussion (3)