Problem 2128: Remove All Ones With Row and Column Flips

Problem Information

Difficulty: Medium
Acceptance Rate: 76.21%
Paid Only: Yes
Tags: Array, Math, Bit Manipulation, Matrix

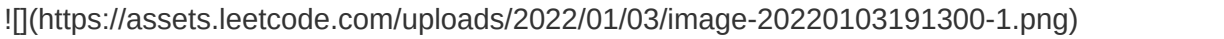
Problem Description

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).

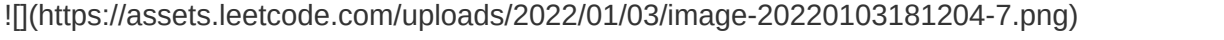
Return `true` _if it is possible to remove all_`1` _' s from _`grid` using **any** number of operations or `false` otherwise.

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`.

Code Snippets

C++:

```
class Solution {
public:
bool removeOnes(vector<vector<int>>& grid) {

}
};
```

Java:

```
class Solution {
public boolean removeOnes(int[][] grid) {

}
}
```

Python3:

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