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Description

Solution

Discuss (214)

Submissions

2482. Difference Between Ones and Zeros in Row and Column

Medium

108

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You are given a **0-indexed** $m \times n$ binary matrix `grid`.

A **0-indexed** $m \times n$ difference matrix `diff` is created with the following procedure:

- Let the number of ones in the i^{th} row be `onesRowi`.
- Let the number of ones in the j^{th} column be `onesColj`.
- Let the number of zeros in the i^{th} row be `zerosRowi`.
- Let the number of zeros in the j^{th} column be `zerosColj`.
- $\text{diff}[i][j] = \text{onesRow}_i + \text{onesCol}_j - \text{zerosRow}_i - \text{zerosCol}_j$

Return the difference matrix `diff`.

Example 1:

grid

0	1	1
1	0	1
0	0	1

diff

0	0	4
0	0	4
-2	-2	2

Input: `grid = [[0,1,1],[1,0,1],[0,0,1]]`
Output: `[[0,0,4],[0,0,4],[-2,-2,2]]`

Explanation:

- $\text{diff}[0][0] = \text{onesRow}_0 + \text{onesCol}_0 - \text{zerosRow}_0 - \text{zerosCol}_0 = 2 + 1 - 1 - 2 = 0$
- $\text{diff}[0][1] = \text{onesRow}_0 + \text{onesCol}_1 - \text{zerosRow}_0 - \text{zerosCol}_1 = 2 + 1 - 1 - 2 = 0$
- $\text{diff}[0][2] = \text{onesRow}_0 + \text{onesCol}_2 - \text{zerosRow}_0 - \text{zerosCol}_2 = 2 + 3 - 1 - 0 = 4$
- $\text{diff}[1][0] = \text{onesRow}_1 + \text{onesCol}_0 - \text{zerosRow}_1 - \text{zerosCol}_0 = 2 + 1 - 1 - 2 = 0$
- $\text{diff}[1][1] = \text{onesRow}_1 + \text{onesCol}_1 - \text{zerosRow}_1 - \text{zerosCol}_1 = 2 + 1 - 1 - 2 = 0$
- $\text{diff}[1][2] = \text{onesRow}_1 + \text{onesCol}_2 - \text{zerosRow}_1 - \text{zerosCol}_2 = 2 + 3 - 1 - 0 = 4$
- $\text{diff}[2][0] = \text{onesRow}_2 + \text{onesCol}_0 - \text{zerosRow}_2 - \text{zerosCol}_0 = 1 + 1 - 2 - 2 = -2$
- $\text{diff}[2][1] = \text{onesRow}_2 + \text{onesCol}_1 - \text{zerosRow}_2 - \text{zerosCol}_1 = 1 + 1 - 2 - 2 = -2$
- $\text{diff}[2][2] = \text{onesRow}_2 + \text{onesCol}_2 - \text{zerosRow}_2 - \text{zerosCol}_2 = 1 + 3 - 2 - 0 = 2$

Example 2:

grid

1	1	1
1	1	1

diff

5	5	5
5	5	5

Input: `grid = [[1,1,1],[1,1,1]]`
Output: `[[5,5,5],[5,5,5]]`

Explanation:

- $\text{diff}[0][0] = \text{onesRow}_0 + \text{onesCol}_0 - \text{zerosRow}_0 - \text{zerosCol}_0 = 3 + 2 - 0 - 0 = 5$
- $\text{diff}[0][1] = \text{onesRow}_0 + \text{onesCol}_1 - \text{zerosRow}_0 - \text{zerosCol}_1 = 3 + 2 - 0 - 0 = 5$
- $\text{diff}[0][2] = \text{onesRow}_0 + \text{onesCol}_2 - \text{zerosRow}_0 - \text{zerosCol}_2 = 3 + 2 - 0 - 0 = 5$
- $\text{diff}[1][0] = \text{onesRow}_1 + \text{onesCol}_0 - \text{zerosRow}_1 - \text{zerosCol}_0 = 3 + 2 - 0 - 0 = 5$
- $\text{diff}[1][1] = \text{onesRow}_1 + \text{onesCol}_1 - \text{zerosRow}_1 - \text{zerosCol}_1 = 3 + 2 - 0 - 0 = 5$
- $\text{diff}[1][2] = \text{onesRow}_1 + \text{onesCol}_2 - \text{zerosRow}_1 - \text{zerosCol}_2 = 3 + 2 - 0 - 0 = 5$

Constraints:

- $m == \text{grid.length}$
- $n == \text{grid}[i].\text{length}$
- $1 \leq m, n \leq 10^5$
- $1 \leq m * n \leq 10^5$
- `grid[i][j]` is either 0 or 1.

Accepted 10,120

Submissions 12,912

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Yes

No

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class Solution {

public int[][] onesMinusZeros(int[][] grid) {

}

}

Problems

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2482/2489

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