

Problem 73: Set Matrix Zeroes

Problem Information

Difficulty: Medium

Acceptance Rate: 61.87%

Paid Only: No

Tags: Array, Hash Table, Matrix

Problem Description

Given an $m \times n$ integer matrix `matrix`, if an element is `0`, set its entire row and column to `0`'s.

You must do it [in place](https://en.wikipedia.org/wiki/In-place_algorithm).

Example 1:

Input: matrix = [[1,1,1],[1,0,1],[1,1,1]] **Output:** [[1,0,1],[0,0,0],[1,0,1]]

Example 2:

Input: matrix = [[0,1,2,0],[3,4,5,2],[1,3,1,5]] **Output:** [[0,0,0,0],[0,4,5,0],[0,3,1,0]]

Constraints:

$m == \text{matrix.length}$ * $n == \text{matrix[0].length}$ * $1 \leq m, n \leq 200$ * $-231 \leq \text{matrix}[i][j] \leq 231 - 1$

Follow up:

* A straightforward solution using `O(mn)` space is probably a bad idea.
* A simple improvement uses `O(m + n)` space, but still not the best solution.
* Could you devise a constant space solution?

Code Snippets

C++:

```
class Solution {  
public:  
    void setZeroes(vector<vector<int>>& matrix) {  
  
    }  
};
```

Java:

```
class Solution {  
public void setZeroes(int[][] matrix) {  
  
}  
}
```

Python3:

```
class Solution:  
    def setZeroes(self, matrix: List[List[int]]) -> None:  
        """  
        Do not return anything, modify matrix in-place instead.  
        """
```