MATRIX

Problem - 73. Set Matrix Zeroes





leetcode.com/problems/set-matrix-zeroes

Problem

- You are given a matrix m x n
- When an element in the matrix is **0**, set the whole column and row to **zero**

Solution - 73. Set Matrix Zeroes





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Solution

- Iterate through the matrix top-down
- For each column (from col = 1 to n 1), when you find 0, set:
 matrix[row][0] = 0 → marks that the row should be zeroed
 matrix[0][col] = 0 → marks that the col should be zeroed
- If matrix[row][0] == 0, set a variable col0 = true to remember if column 0 must be zeroed later
- Iterate bottom-top, right-left
- For each cell, if matrix[row][0] == 0 or matrix[0][col] == 0 set matrix[row][col] = 0
- It must be bottom-top, right-left to not set the first row to zero first
- Also check if col0 is true. If true, set the first column to zero:
 matrix[row][0] = 0

Code - 73. Set Matrix Zeroes

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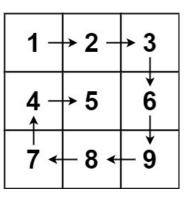
```
Time: O(m \times n) Space: O(1) where m is the number of rows and n the number of columns. As this is an in-place implementation, there is no additional space being
allocated, therefore space complexity is O(1)
void setZeroes(vector<vector<int>>& matrix) {
    int m = matrix.size();
    int n = matrix[0].size();
    bool col0 = false;
    for (int row = 0; row < m; ++row) {
        if (matrix[row][0] == 0) col0 = true;
        for (int col = 1; col < n; ++col) {
             if (matrix[row][col] == 0) {
                 matrix[row][0] = 0;
                 matrix[0][col] = 0;
    for (int row = m - 1; row >= 0; --row) {
         for (int col = n - 1; col >= 1; --col) {
             if (matrix[row][0] == 0 || matrix[0][col] == 0) {
                 matrix[row][col] = 0;
        if (col0) {
             matrix[row][0] = 0;
```



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Problem Statement / Solution / Code Time: O(-) Space: O(-)

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Problem – 48. Rotate Image



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Problem Statement / Solution / Code Time: O(-) Space: O(-)

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