73. Set Matrix Zeroes

Medium

Given a *m* x *n* matrix, if an element is 0, set its entire row and column to 0. Do it [**in-place**](https://en.wikipedia.org/wiki/In-place_algorithm).

**Example 1:**

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

**Example 2:**

**Input:**   
[  
 [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]  
]  
Space complexity: O(M+N)

class Solution {

public:

bool has(vector<int> vec, int x){

if(std::find(vec.begin(),vec.end(),x)!=vec.end()) return true;

return false;

}

void setZeroes(vector<vector<int>>& matrix) {

vector<int> rows;

vector<int> cols;

for(int i=0;i<matrix.size();i++){

for(int j=0;j<matrix[0].size();j++){

if(matrix[i][j]==0){

rows.push\_back(i);

cols.push\_back(j);

}

}

}

//put zeros in rows

for(int i=0;i<rows.size();i++){

int row=rows[i];

for(int j=0;j<matrix[0].size();j++){

matrix[row][j]=0;

}

}

//put zeros in cols

for(int i=0;i<cols.size();i++){

int col=cols[i];

for(int j=0;j<matrix.size();j++){

matrix[j][col]=0;

}

}

}

};

Success

[Details](https://leetcode.com/submissions/detail/209869831/)

Runtime: 48 ms, faster than 100.00% of C++ online submissions for Set Matrix Zeroes.

Memory Usage: 11.6 MB, less than 34.69% of C++ online submissions for Set Matrix Zeroes.

Solution 2: space O(1)

class Solution {

public:

void setZeroes(vector<vector<int>>& matrix) {

bool colZero=false;

for(int i=0;i<matrix.size();i++){

if(matrix[i][0]==0) colZero=true;

for(int j=1;j<matrix[0].size();j++){

if(matrix[i][j]==0){

matrix[i][0]=0;

matrix[0][j]=0;

}

}

}

//setting zeros in cols

for(int i=1;i<matrix[0].size();i++){

if(matrix[0][i]==0){

for(int j=1;j<matrix.size();j++){

matrix[j][i]=0;

}

}

}

//setting zeros in rows

for(int i=1;i<matrix.size();i++){

if(matrix[i][0]==0){

for(int j=1;j<matrix[0].size();j++){

matrix[i][j]=0;

}

}

}

if(matrix[0][0]==0){

for(int i=0;i<matrix[0].size();i++) matrix[0][i]=0;

}

if(colZero){

for(int i=0;i<matrix.size();i++) matrix[i][0]=0;

}

}

};

Success

[Details](https://leetcode.com/submissions/detail/209878434/)

Runtime: 48 ms, faster than 100.00% of C++ online submissions for Set Matrix Zeroes.

Memory Usage: 11.5 MB, less than 60.89% of C++ online submissions for Set Matrix Zeroes.