* Set matrix zeroes :-

→ For any m x n matrix , if the element is 0 , set its entire row as 0 & col as 0.

* Examples :-

1	1	1
1	0	1
1	1	1

→

1	0	1
0	0	0
1	0	1

matrix = $[[1,1,1],[1,0,1],[1,1,1]]$

output = $[[1,0,1],[0,0,0],[1,0,1]]$

0	1	2	0
3	4	5	2
1	3	1	5

→

0	0	0	0
0	4	5	0
0	3	1	0

matrix = $[[0,1,2,0],[3,4,5,2],[1,3,1,5]]$

output = $[[0,0,0,0],[0,4,5,0],[0,3,1,0]]$

* Constraint :-

→ Required space complexity = $O(1)$

* Solution :-

→ Determine if the first row or the first column has any 0.

→ Store that info somewhere.

0	1	2	0
3	④	⑤	②
1	③	①	⑤

Here , the first row & the first column contains a 0. So, the entire row & columns will be marked as 0. Hence, we need to start looking for 0 from [1,1].

→ Set matrix to 0 as per the markers .

→ If matrix [i][0] == 0 || matrix [0][j] == 0 , then matrix [i][j] = 0.

→ In the end, handle the first row & first col seperately.

	0	1	2	3
0	0	1	2	0
1	3	4	5	2
2	1	3	1	5

isFirstRowZero = ~~false~~ . true

isFirstColZero = ~~false~~ true

totalRows = 3   totalCols = 4

row = ~~+~~   2

col = ~~+ 2 3~~   +2 3

$[2,0]$

$[0,3]$

	0	1	2	3
0	0	1	2	0
1	3	4	5	0
2	1	3	1	5

$[2,3] = 0$

	0	1	2	3
0	0	1	2	0
1	3	4	5	0
2	1	3	1	0

Since , isFirstRowZero = true ,   col = 2 + ~~2 3~~ 4   totalCols = 4

	0	1	2	3
0	0	0	0	0
1	3	4	5	0
2	1	3	1	0

$[0,0] = 0$ $[0,3] = 0$

$[0,1] = 0$

$[0,2] = 0$

Since , isFirstColZero = true , row = 2 + ~~2 3~~   totalRows = 3

	0	1	2	3
0	0	0	0	0
1	0	4	5	0
2	0	3	1	0

$[0,0] = 0$

$[1,0] = 0$

$[2,0] = 0$

Time complexity :- $O(n) + O(m) + O(m \times n) + O(m \times n) + O(n) + O(m)$

$= O(m \times n)$

Space complexity $= O(1)$