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5156. Rank Transform of a Matrix

My Submissions (/contest/weekly-contest-212/problems/rank-transform-of-a-matrix/submissions/) Back to Contest (/contest/weekly-contest-212/) Given an m x n matrix, return a new matrix answer where answer[row][col] is the rank of matrix[row] [col].

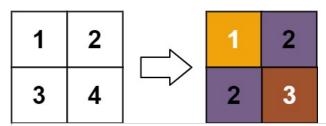
The rank is an integer that represents how large an element is compared to other elements. It is calculated using the following rules:

- If an element is the smallest element in its row and column, then its rank is 1.
- If two elements p and q are in the same row or column, then:
 - o If p < q then rank(p) < rank(q)</pre>
 - o If p == q then rank(p) == rank(q)
 - \circ If p > q then rank(p) > rank(q)
- The rank should be as small as possible.

It is guaranteed that answer is unique under the given rules.

User Accepted: 0 User Tried: 0 **Total Accepted:** 0 **Total Submissions:** 0 Difficulty: (Hard)

Example 1:



Input: matrix = [[1,2],[3,4]]

Output: [[1,2],[2,3]]

Explanation:

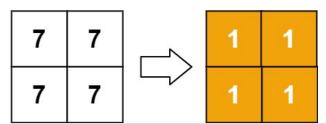
The rank of matrix[0][0] is 1 because it is the smallest integer in its row and column.

The rank of matrix[0][1] is 2 because matrix[0][1] > matrix[0][0] and matrix[0][0] is rank 1.

The rank of matrix[1][0] is 2 because matrix[1][0] > matrix[0][0] and matrix[0][0] is rank 1.

The rank of matrix[1][1] is 3 because matrix[1][1] > matrix[0][1], matrix[1][1] > matrix[1][0], and both matrix[0][1] and

Example 2:



Input: matrix = [[7,7],[7,7]]

Output: [[1,1],[1,1]]

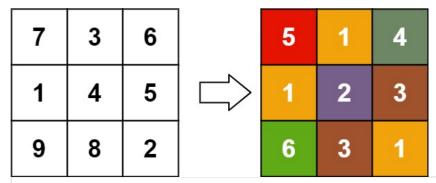
Example 3:

20	-21	14		4	2	3
-19	4	19		1	3	4
22	-47	24		5	1	6
-19	4	19		1	3	4

Input: matrix = [[20,-21,14],[-19,4,19],[22,-47,24],[-19,4,19]]

Output: [[4,2,3],[1,3,4],[5,1,6],[1,3,4]]

Example 4:



Input: matrix = [[7,3,6],[1,4,5],[9,8,2]]

Output: [[5,1,4],[1,2,3],[6,3,1]]

Constraints:

- m == matrix.length
- n == matrix[i].length
- 1 <= m, n <= 500
- $-10^9 \le \text{matrix[row][col]} \le 10^9$