2711. Difference of Number of Distinct Values on Diagonals

Description

Given a **0-indexed** 2D `grid` of size `m x n`, you should find the matrix `answer` of size `m x n`.

The value of each cell `(r, c)` of the matrix `answer` is calculated in the following way:

- Let `topLeft[r][c]` be the number of **distinct** values in the top-left diagonal of the cell `(r, c)` in the matrix `grid`.
- Let `bottomRight[r][c]` be the number of **distinct** values in the bottom-right diagonal of the cell `(r, c)` in the matrix `grid`.

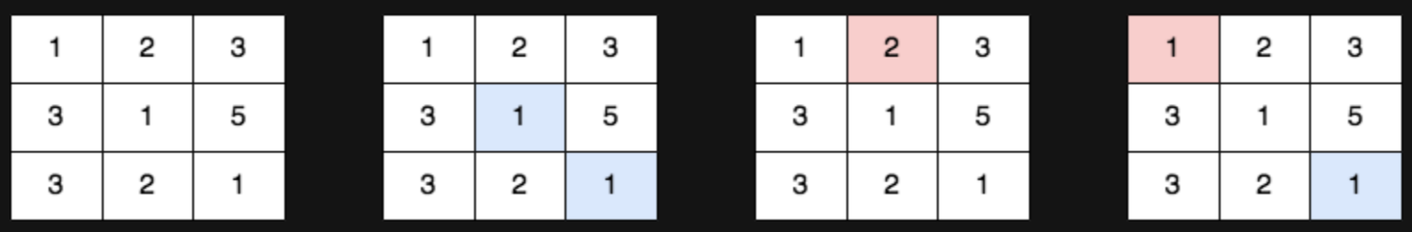
Then `answer[r][c] = |topLeft[r][c] - bottomRight[r][c]|`.

Return *the matrix* `answer`.

A **matrix diagonal** is a diagonal line of cells starting from some cell in either the topmost row or leftmost column and going in the bottom-right direction until reaching the matrix's end.

A cell (r_1, c_1) belongs to the top-left diagonal of the cell (r, c), if both belong to the same diagonal and $r_1 < r$. Similarly is defined bottom-right diagonal.

Example 1:




```
Input: grid = [[1,2,3],[3,1,5],[3,2,1]]
 Output: [[1,1,0],[1,0,1],[0,1,1]]
 Explanation: The 1st diagram denotes the initial grid.
The 2nd diagram denotes a grid for cell (0,0), where blue-colored cells are cells on its bottom-right diagonal.
The 3rd diagram denotes a grid for cell (1,2), where red-colored cells are cells on its top-left diagonal.
The 4th diagram denotes a grid for cell (1,1), where blue-colored cells are cells on its bottom-right diagonal and red-colored cells are cells on its top-left diagonal.
- The cell (0,0) contains [1,1] on its bottom-right diagonal and [] on its top-left diagonal. The answer is |1 - 0| = 1.
- The cell (1,2) contains [] on its bottom-right diagonal and [2] on its top-left diagonal. The answer is |0 - 1| = 1.
- The cell (1,1) contains [1] on its bottom-right diagonal and [1] on its top-left diagonal. The answer is |1 - 1| = 0.
The answers of other cells are similarly calculated.
```

Example 2:

```
Input: grid = [[1]]
Output: [[0]]
Explanation: - The cell (0,0) contains [] on its bottom-right diagonal and [] on its top-left diagonal. The answer is |0 - 0| = 0.
```

Constraints:

- `m == grid.length`
- `n == grid[i].length`
- `1 <= m, n, grid[i][j] <= 50`