2D Array Problems -1

Assignment Questions

PW SKILLS

Q1 - Given two integer matrices, multiply the matrices, if possible, else return "Invalid Input". (Medium)

Input1:

n1 = 2
m1 = 3
arr1 = {{2,4,1}, {3,5,6}}
n2 = 3
m2 = 2
arr2 = {{1,2}, {3,4}, {5,7}}

Output1:

19 27
48 68

Input1:

n1 = 3
m1 = 2
n2 = 3
m2 = 2
mat1 = {{1, 2}, {3, 4}, {1, 2}}
mat2 = {{2, 3}, {4, 5}, {6, 7}}

Output2:

-1

Q2 - Given a square matrix, rotate it by 90 degrees in anti clockwise direction. (Medium)

Input1:

n = 3
m = 3
matrix = [[1,2,3],[4,5,6],[7,8,9]]

Output1:

3 6 9
2 5 8
1 4 7

Input2:

n = 2
m = 2
matrix = [[1,2],[4,5]]

Output2:

[[1, 4], [2, 5]]

Q3 - Given a n*m matrix, return true if the matrix is a Toeplitz matrix. A matrix is called Toeplitz if every diagonal from top-left to bottom-right has the same elements. (Medium)

Input1:

n = 3

m = 4

arr[]=[[1, 2, 3, 4],[5, 1, 2, 3],[9, 5, 1, 2]]

1	2	3	4
5	1	2	3
9	5	1	2

Output1:

true

Input2:

n = 2

m = 2

Arr[] = [[1,2], [1, 2]]

Output2:

false

Q4 - Given a n*m matrix, return an array of elements containing diagonal traversal of the matrix. (Medium)

Input1:

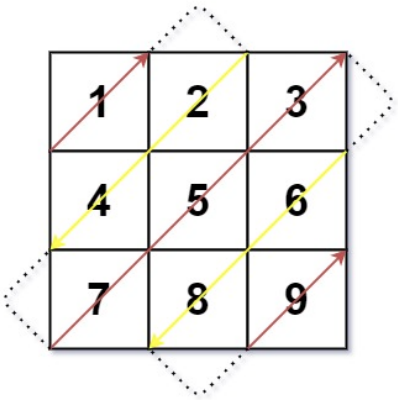
n = 3

m = 3

arr[]=[[1, 2, 3],[4, 5, 6],[7, 8, 9]]

Output1:

[1, 4, 2, 7, 5, 3, 8, 6, 9]



Input2:

n = 1

m = 3

arr[]=[[1,2,3]]

Output2:

[1,2,3]

Q5 - Given an array of intervals where intervals[i] = [start, end], merge all overlapping intervals, and return the count of the non-overlapping intervals that cover all the intervals in the input. (Medium)

Input1:

n = 4

m = 2

arr[]=[[1,4],[2,3],[5,8],[6,9]]

Output1:

2

Input2:

n = 2

m = 2

arr[]=[[1,5],[3,9]]

Output2:

1