

# Problems on 2D Array – 2

## Assignment Questions



**Q1. Given a  $m \times n$  matrix, Write a function which returns true if the matrix is a perfect matrix. A matrix is called perfect if every diagonal from top-left to bottom-right has the same elements.** (Easy)

Sample Input: `arr=[[9,8,7,6],[5,9,8,7],[1,5,9,8]]`

9	8	7	6
5	9	8	7
1	5	9	8

Sample Output: true

**Q2. Given an array of intervals where `intervals[i] = [start, end]`, merge all overlapping intervals, and create a function which returns a vector of the non-overlapping intervals that cover all the intervals in the input.** (Hard)

Sample Input: `arr=[[1,4],[2,3],[5,8],[6,9]]`

Sample Output: `[[1,4],[5,9]]`

Sample Input: `arr=[[1,5],[3,9]]`

Sample Output: `[1,9]`

**Q3. Given an array of intervals where `arr[i] = [start, end]`, return the minimum number of intervals you need to remove to make the rest of the intervals non-overlapping.** (Hard)

Sample Input: `arr=[[1,4],[2,3],[4,5],[6,7]]`

Sample Output: 1

**Explanation:** The interval 1,4 and 2,3 are overlapping so removing any one of them will make the intervals non overlapping.

Sample Input: `arr=[[1,2],[2,3],[3,4],[4,5]]`

Sample Output: 0