Array-3

Assignment Questions

PW SKILLS

Q1 - Given two vectors arr1[] and arr2[] of size m and n sorted in increasing order. Merge the two arrays into a single sorted array of size m+n. (Easy)

Input: arr1=[1,2,3] arr2=[4,5,6]
Output: arr=[1,2,3,4,5,6]

Input: arr1=[1,3,5] arr2=[2,4,6]
Output: arr=[1,2,3,4,5,6]

Q2 - Given a vector arr[] sorted in increasing order of n size and an integer x, find if there exists a pair in the array whose sum is exactly x. (Easy)

Given: n>0
Input: [-1,0,1,2,3] x=2
Output: Yes

Input: [1,2,3,4] x=9
Output: No

Q3 - Given a vector arr[] sorted in increasing order of n size and an integer x, find if there exists a pair in the array whose absolute difference is exactly x. (Medium)

Given: n>0
Input: [5,10,15,20,26] x= 10
Output: Yes

Input: [5,6,7,8,9] x=4
Output: Yes

Input: [9,23,45,69,78] x=56
Output: No

Q4 - Given a vector arr[] sorted in increasing order. Return an array of squares of each number sorted in increasing order. Where size of vector 1<size<101. (Medium)

Input: [0,1,2,3]
Output: [0,1,4,9]

Input: [-5,-4,-3,-2,-1]
Output: [1,4,9,16,25]

Input: [-4,-3,-1,0,2,10]
Output: [0,2,4,9,16,100]

Q5 - Given a vector arr[] sorted in increasing order of n size and an integer x, find the number of unique pairs that exist in the array whose absolute sum is exactly x. (Hard)

Input: [1,2,3,4,6] x=7
Output: 2
Explanation: 1,6 and 3,4 sum to 7

Input: [3,1,3,5,3] x=6
Output: 2
Explanation: The unique pairs are 3,3 and 1,5

Input: [2,2,2] x=4
Output: 1
Explanation: The only unique pair is 2,2

Q6 - Given a vector array nums, print the count of triplets [nums[i], nums[j], nums[k]] such that i != j, i != k, and j != k, and nums[i] + nums[j] + nums[k] == x. Where k is an integer given by the user. (Hard)

Note: The solution set must not contain duplicate triplets and should not have 3 loops.

Input: [-1,0,1,2,-1,-4] x=0
Output: 2
Explanation: The two triplets are: -1,0,1 and 1,2,-1

Input: [1,2,3] x=5
Output: 0