Problem on Arrays – 3

Assignment Questions

Q1 - Given an integer array and two integers L and R. Find the sum of elements between the index L and index R.
Note: Both L and R inclusive. (Medium)

Input: [1,2,3,4,5] L=1 R=3
Output: 9
Explanation: 2+3+4=9

Input: [1,2,3,4,5] L=2 R=2
Output: 3
Explanation: 3

Q2 - There is a man going on a trek. The trek consists of n + 1 points at different altitudes. The man starts his trek on point 0 with altitude equal 0. You are given an integer array height of length n where height[i] is the net height in altitude between points i and i + 1 for all (0 <= i < n). Return the highest altitude of a point. (Easy)

Input: height=[-4,1,6,0,-8]
Output: 3
Explanation: The man starts at 0 and since then the altitudes covered will be [0,-4,-3,3,3,-5] so the greatest altitude will be 3

Input: height=[-5,-3,-2]
Output: 0
Explanation: The man starts at 0 and since then the altitudes will be[0,-5,-3,-2] so the greatest altitude will be 0.

Q3 - Given an integer array arr consisting of 0's and 1's only, return the max length of sequence which contains equal numbers of 0 and 1. (Medium)

Input: arr=[0,1,0,1]
Output: 4
Explanation: The longest sequence is 0,1,0,1

Input: arr=[0,1,1,0,1,1,1]
Output: 4
Explanation: The longest sequence is 0,1,1,0

Q4 - Given an integer array arr, return the number of consecutive sequences(subarrays) with odd sum. (Hard)

Input: [1,3,5]
Output: 4
Explanation: These sequences are [1],[3],[5] and [1,3,5]

Input: [0,2,4]
Output: 0

Q5 - Given an integer array arr, return an array ans such that ans[i] is equal to the product of all the elements of arr except arr[i]. (Hard)

Input: arr=[1,3,5,7]
Output: [105,35,21,15]
Explanation: ans=[3*5*7,1*5*7,1*3*7,1*3*5]

Input: [-5,-4,0,4,5]
Output: [0,0,400,0,0]

Q6 - Given an array of size 'n' (initially zero) and 'q' number of updates where in each update we can increase the value of all index from index l to index r with value x and in the end print all the numbers of the array. (Medium)

Input: q = 3, x = 5, n = 5
[l,r] = {{0,3}, {4,4}, {1,2}}
Output: [5 10 10 5 5]