Cracking the Code: Data Structures and Algorithms (DSA) in JavaScript - I

Marks - 100

Note: Attempt this assignment after studying pre-recorded content and after attending Live lectures of this course.
Create your Leetcode Profiles and solve these questions there. Share your solved questions link along with the Time complexity and Space Complexity of your solution in a doc when you submit your assignment.
Submit the optimised solution for all the questions.

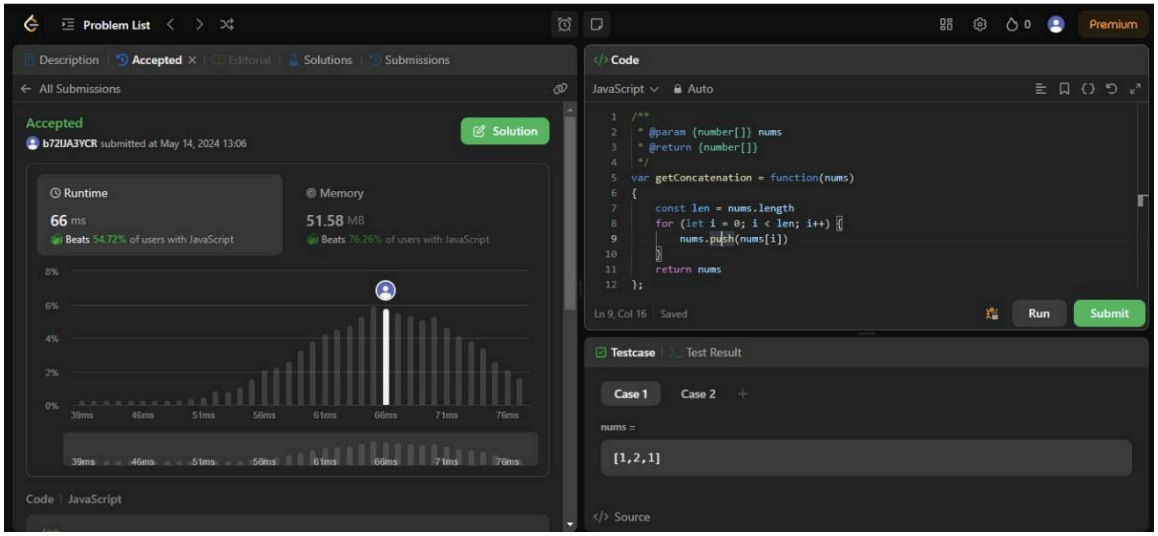
WARNING !! Don't try to copy from somewhere else. We can call any student randomly to explain their solutions, and if we find a discrepancy, you will be provided with 0.

Example Question with Solution
(Please note that you need to submit your answers in exact same format, including the description)

Question: https://leetcode.com/problems/concatenation-of-array/description/

Solution Link -
https://leetcode.com/problems/concatenation-of-array/submissions/1257621340/

Add screenshot:



Description:

Time Complexity: O(n)

Iterating to the entire n-sized array and for each array element performing O(1) operation of push.

Space complexity: O(1)

No Extra space required for the Program Execution

Note: Write about the approach and algorithm used in each solution in detail in the description section.
A short description may lead to a reduction in marks.

1. Given an array of integer ‘nums’ and an integer ‘target’, return the indices of the two numbers such that they add up to the ‘target’. Leetcode 1

(10 marks)

2. Given an integer array nums and an integer k, return the number of pairs (i, j) where i < j such that |nums[i] -

nums[j]| == k Leetcode 2006

(20 marks)

3. Given an array of integers nums, return the number of good pairs. A pair (i, j) is called good if nums[i] == nums[j] and i < j. Leetcode 1512

(20 marks)

4. Given the array nums consisting of 2n elements in the form [x1,x2,...,xn,y1,y2,...,yn]. Return the array in the form [x1,y1,x2,y2,...,xn,yn]. Leetcode 1470

(20 marks)

5. Given an integer array nums, find the subarray with the largest sum, and return its sum. Leetcode 53

(20 marks)

6. Given an array of integers nums, which is sorted in ascending order, and an integer target, write a function to search target in nums. If the target exists, then return its index. Otherwise, return -1.
Leetcode 704

(10 marks)