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Experiment-4

Student Name: Vanshika **UID: 22BET10032**

Branch: IT **Section/Group: 22BET_IOT-701/B**

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Subject Name: AP Lab - 2 **Subject Code: 22ITP-351**

Problem-1

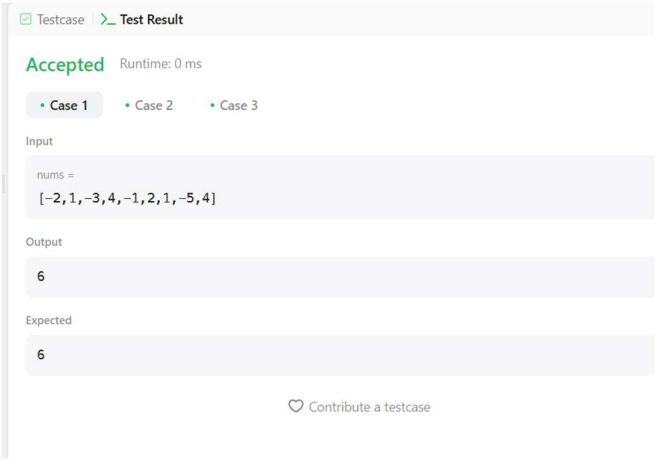
1. **Aim:** Given an integer array nums, find the subarray with the largest sum, and return *its sum*.

2. **Code:**

```
class Solution {
    public int maxSubArray(int[] nums) {
        int maxSum = nums[0];  // Initialize maxSum with the first element
        int currentSum = nums[0];  // Initialize current running sum

        for (int i = 1; i < nums.length; i++) {
            // Either add the current element to the previous sum or start a
new subarray
            currentSum = Math.max(nums[i], currentSum + nums[i]);
            // Update the maximum sum found so far
            maxSum = Math.max(maxSum, currentSum);
        }
        return maxSum;
    }
}
```

Output:



Problem-2

1. **Aim:** Given a string s, return *the longest **substring** of s that is **nice**. If there are multiple, return the substring of the **earliest** occurrence. If there are none, return an empty string*.

2. **Code:**

```
class Solution {
    public String longestNiceSubstring(String s) {
        if (s.length() < 2) return ""; // Base case: A single character cannot be nice.

        // Convert the string to a character array for checking presence
        for (int i = 0; i < s.length(); i++) {
            char ch = s.charAt(i);
            // If the character does not have its uppercase/lowercase counterpart, split here
            if (s.indexOf(Character.toUpperCase(ch)) == -1 ||
s.indexOf(Character.toLowerCase(ch)) == -1) {
                String left = longestNiceSubstring(s.substring(0, i));
                String right = longestNiceSubstring(s.substring(i + 1));
                return left.length() >= right.length() ? left : right;
            }
        }

        return s; // If we didn't split, the entire string is nice.
    }
}
```

3. **Output:**


Testcase
Test Result
Accepted
Runtime: 0 ms
Case 1
Case 2
Case 3
Input
s =
"YazaAay"
Output
"aAa"
Expected
"aAa"