75 Days of Code

Day15 Problem no: 1456. Maximum Number of Vowels in a Substring of Given Length (leetcode)

Given a string s and an integer k, return the maximum number of vowel letters in any substring of s with length k.

Vowel letters in English are 'a', 'e', 'i', 'o', and 'u'.

Example 1:

Input: s = "abciiidef", k = 3
Output: 3
Explanation: The substring "iii" contains 3 vowel letters.
Example 2:

Input: s = "aeiou", k = 2
Output: 2
Explanation: Any substring of length 2 contains 2 vowels.

For this problem , we are gonna use sliding window approach

Key terms to know problem can be solved by sliding window :

Question includes : **Array ,SubArray , SubString , Largest , Smallest ,Maximum and Minimum with window size may or may not present**

Solution of the above problem using sliding window

Shubham Agrahari

1. Calculate the initial count of letters in string up to k for initial window (Initialization nad process with initial calculation)
2. Initialize a variable as maxsum before starting sliding through the loop
3. Slide the initialCount var (intial window) starting with k upto total number.length -k (Sliding the window , update and repeat)
4. Return the ans as maxCountOfVowel

```typescript
17   function maxVowels(s: string, k: number): number {
18     if (s.length < k) return -1;
19
20     let vowels = ["a", "e", "i", "o", "u", "A", "E", "I", "O", "U"];
21     let initialCountOfVowel = 0;
22     for (let stringIndex = 0; stringIndex < k; stringIndex++) {
23       if (vowels.includes(s[stringIndex])) {
24         initialCountOfVowel++;
25       }
26     }
27
28     let maxVowelCount = initialCountOfVowel;
29     let startIndex = 0;
30     for (let endIndex = k; endIndex < s.length; endIndex++) {
31       if (vowels.includes(s[startIndex])) {
32         initialCountOfVowel--;
33       }
34
35       if (vowels.includes(s[endIndex])) {
36         initialCountOfVowel++;
37       }
38
39       maxVowelCount = Math.max(maxVowelCount, initialCountOfVowel);
40       startIndex++;
41     }
42
43     return maxVowelCount;
44   }
45
46   let answer = maxVowels("aeiou", 2);
47   console.log("Answer :", answer);
48
```

```
[Running] node "c:\Users\Shubham\Desktop\75daysOfCode\75DaysOfCode\day15.js"
Answer : 2
```

Shubham Agrahari

Shubham Agrahari