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STRINGS

Video-29

Leetcode -2949

Hard

Count Beautiful Substring - II

(Leetcode Contest - 373)

O(n-4)

Asked By :- will update soon...

2947. Count Beautiful Substrings II

Hint

Medium 30 1

Companies

You are given a string `s` and a positive integer `k`.

Let `vowels` and `consonants` be the number of vowels and consonants in a string.

A string is **beautiful** if:

- `vowels == consonants`.
- `(vowels * consonants) % k == 0`, in other terms the multiplication of `vowels` and `consonants` is divisible by `k`.

Return *the number of **non-empty beautiful substrings** in the given string* `s`.

A **substring** is a contiguous sequence of characters in a string.

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

Consonant letters in English are every letter except vowels.

Constraints:

- `1 <= s.length <= 5 * 10^4`
- `1 <= k <= 1000`
- `s` consists of only English lowercase letters.

Example :- s = "baeyh", k = 2

Output = 2

Approach-1 → Brute Force

Done...

↳ Video - 28 ("Strings Playlist")

Approach-2...

⇒ optimal

Intuition...

nums = { 1, 1, -2, -3, 5, -2 }

(0 1 2 3 4 5)

Prefixsum = 0{ 1, 2, 0, -3, 2, 0 }

sum	map count
0	3
1	1
2	2
-3	1

result = 1+1+2

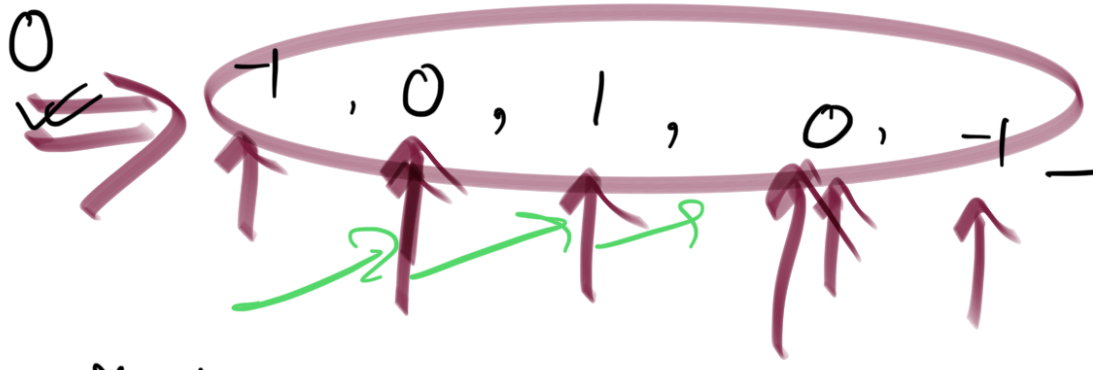
Consonant = -1
Vowel = 1

"baeyh"

V=0
C=0
V-C=0

V=0 C=1 V-C=-1
V=1 C=1 V-C=0
V=2 C=1 V-C=1
V=2 C=2 V-C=0
V=2 C=3 V-C=-1

"-1, 1, 1, -1, -1"



Psum	count
0	3
-1	2
1	1

result = 1+2+1

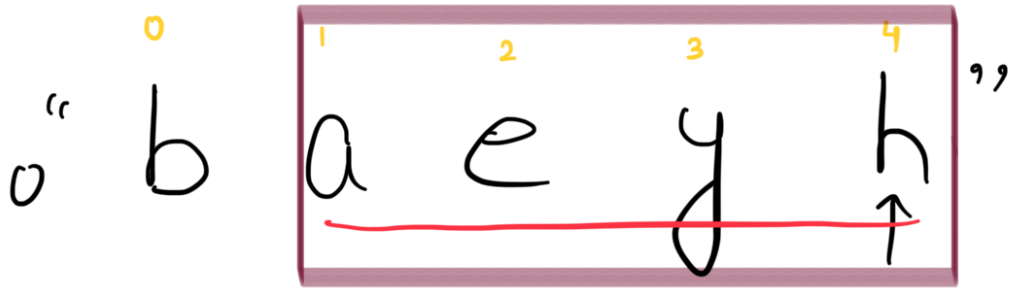
(*) How to find substrings in which

① # vowels == # consonants

(2) Logic: → (#vowels * #con) % K == 0

(#Vowels * #vowels) % K = 0

K = 2



map

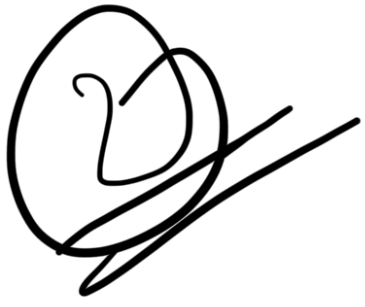
(V-c) PSum	value (map)
0	0 → 1 1 → 1 2 → 1
-1	0 → 1 2 → 1
1	2 → 1

V=0 V=0 V=1 V=2 V=2 V=2

C=0 C=1 C=1 C=1 C=2 C=3

V-C=0 V-C=-1 V-C=0 V-C=1 V-C=0 V-C=-1

V-0 : 2-0 = 2




Video
Discuss Section