Problem 2083: Substrings That Begin and End With the Same Letter

Problem Information

Difficulty: Medium
Acceptance Rate: 74.37%
Paid Only: Yes
Tags: Hash Table, Math, String, Counting, Prefix Sum

Problem Description

You are given a **0-indexed** string `s` consisting of only lowercase English letters. Return _the number of**substrings** in _`s` _that begin and end with the**same** character._

A **substring** is a contiguous non-empty sequence of characters within a string.

Example 1:

Input: s = "abcba" **Output:** 7 **Explanation:** The substrings of length 1 that start and end with the same letter are: "a", "b", "c", "b", and "a". The substring of length 3 that starts and ends with the same letter is: "bcb". The substring of length 5 that starts and ends with the same letter is: "abcba".

Example 2:

Input: s = "abacad" **Output:** 9 **Explanation:** The substrings of length 1 that start and end with the same letter are: "a", "b", "a", "c", "a", and "d". The substrings of length 3 that start and end with the same letter are: "aba" and "aca". The substring of length 5 that starts and ends with the same letter is: "abaca".

Example 3:

Input: s = "a" **Output:** 1 **Explanation:** The substring of length 1 that starts and ends with the same letter is: "a".

Constraints:

* `1 <= s.length <= 105` * `s` consists only of lowercase English letters.

Code Snippets

C++:

```cpp
class Solution {
public:
long long numberOfSubstrings(string s) {


}
};
```

Java:

```java
class Solution {
public long numberOfSubstrings(String s) {


}
}
```

Python3:

```python
class Solution:
def numberOfSubstrings(self, s: str) -> int:
```