

# Problem 1358: Number of Substrings Containing All Three Characters

## Problem Information

**Difficulty:** Medium

**Acceptance Rate:** 73.36%

**Paid Only:** No

**Tags:** Hash Table, String, Sliding Window

## Problem Description

Given a string `s` consisting only of characters `_a_`, `_b_` and `_c_`.

Return the number of substrings containing **at least** one occurrence of all these characters `_a_`, `_b_` and `_c_`.

**Example 1:**

**Input:** `s = "abcabc"` **Output:** 10 **Explanation:** The substrings containing at least one occurrence of the characters `_a_`, `_b_` and `_c_` are `"_abc_"`, `"_abca_"`, `"_abcab_"`, `"_abcabc_"`, `"_bca_"`, `"_bcab_"`, `"_bcabc_"`, `"_cab_"`, `"_cab_"` and `"_abc_"` (**again**)`_. _`

**Example 2:**

**Input:** `s = "aaacb"` **Output:** 3 **Explanation:** The substrings containing at least one occurrence of the characters `_a_`, `_b_` and `_c_` are `"_aaacb_"`, `"_aacb_"` and `"_acb_"`.

**Example 3:**

**Input:** `s = "abc"` **Output:** 1

**Constraints:**

`3 <= s.length <= 5 x 10^4` `s` only consists of `_a_`, `_b_` or `_c_` characters.

## Code Snippets

### C++:

```
class Solution {  
public:  
    int numberOfSubstrings(string s) {  
  
    }  
};
```

### Java:

```
class Solution {  
    public int numberOfSubstrings(String s) {  
  
    }  
}
```

### Python3:

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