Problem 1759: Count Number of Homogenous Substrings

Problem Information

Difficulty: Medium
Acceptance Rate: 0.00%
Paid Only: No

Problem Description

Given a string

s

, return

the number of

homogenous

substrings of

s

.

Since the answer may be too large, return it

modulo

10

9

+ 7

.

A string is

homogenous

if all the characters of the string are the same.

A

substring

is a contiguous sequence of characters within a string.

Example 1:

Input:

s = "abbcccaa"

Output:

13

Explanation:

The homogenous substrings are listed as below: "a" appears 3 times. "aa" appears 1 time. "b" appears 2 times. "bb" appears 1 time. "c" appears 3 times. "cc" appears 2 times. "ccc" appears 1 time. 3 + 1 + 2 + 1 + 3 + 2 + 1 = 13.

Example 2:

Input:

s = "xy"

Output:

2

Explanation:

The homogenous substrings are "x" and "y".

Example 3:

Input:

s = "zzzzz"

Output:

15

Constraints:

1 <= s.length <= 10

5

s

consists of lowercase letters.

Code Snippets

C++:

```
class Solution {
public:
int countHomogenous(string s) {

}
};
```

Java:

```
class Solution {
public int countHomogenous(String s) {
```

```
}
}
```

Python3:

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

Python:

```
class Solution(object):
def countHomogenous(self, s):
"""
:type s: str
:rtype: int
"""
```

JavaScript:

```
/**
* @param {string} s
* @return {number}
*/
var countHomogenous = function(s) {

};
```

TypeScript:

```
function countHomogenous(s: string): number {

};
```

C#:

```
public class Solution {
public int CountHomogenous(string s) {

}
}
```

C:

```
int countHomogenous(char* s) {

}
```

Go:

```
func countHomogenous(s string) int {

}
```

Kotlin:

```
class Solution {
fun countHomogenous(s: String): Int {

}
}
```

Swift:

```
class Solution {
func countHomogenous(_ s: String) -> Int {

}
}
```

Rust:

```
impl Solution {
pub fn count_homogenous(s: String) -> i32 {

}
}
```

Ruby:

```
# @param {String} s
# @return {Integer}
def count_homogenous(s)

end
```

PHP:

```
class Solution {

/**
* @param String $s
* @return Integer
*/
function countHomogenous($s) {

}
}
```

Dart:

```
class Solution {
int countHomogenous(String s) {

}
}
```

Scala:

```
object Solution {
def countHomogenous(s: String): Int = {

}
}
```

Elixir:

```
defmodule Solution do
@spec count_homogenous(s :: String.t) :: integer
def count_homogenous(s) do

end
end
```

Erlang:

```
-spec count_homogenous(S :: unicode:unicode_binary()) -> integer().
count_homogenous(S) ->
.
```

Racket:

```
(define/contract (count-homogenous s)
(-> string? exact-integer?)
)
```

Solutions

C++ Solution:

```
/*
* Problem: Count Number of Homogenous Substrings
* Difficulty: Medium
* Tags: string, tree, math
*
* Approach: String manipulation with hash map or two pointers
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(h) for recursion stack where h is height
*/

class Solution {
public:
int countHomogenous(string s) {

}
};
```

Java Solution:

```
/**
* Problem: Count Number of Homogenous Substrings
* Difficulty: Medium
* Tags: string, tree, math
*
* Approach: String manipulation with hash map or two pointers
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(h) for recursion stack where h is height
*/

class Solution {
public int countHomogenous(String s) {
```

```
}
}
```

Python3 Solution:

```
"""
Problem: Count Number of Homogenous Substrings
Difficulty: Medium
Tags: string, tree, math

Approach: String manipulation with hash map or two pointers
Time Complexity: O(n) or O(n log n)
Space Complexity: O(h) for recursion stack where h is height
"""

class Solution:
def countHomogenous(self, s: str) -> int:
# TODO: Implement optimized solution
pass
```

Python Solution:

```
class Solution(object):
def countHomogenous(self, s):
"""
:type s: str
:rtype: int
"""
```

JavaScript Solution:

```
/**
* Problem: Count Number of Homogenous Substrings
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* Tags: string, tree, math
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* Approach: String manipulation with hash map or two pointers
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*/
```

```
/**
* @param {string} s
* @return {number}
*/
var countHomogenous = function(s) {

};
```

TypeScript Solution:

```
/**
* Problem: Count Number of Homogenous Substrings
* Difficulty: Medium
* Tags: string, tree, math
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* Approach: String manipulation with hash map or two pointers
* Time Complexity: O(n) or O(n log n)
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*/

function countHomogenous(s: string): number {

};
```

C# Solution:

```
/*
* Problem: Count Number of Homogenous Substrings
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* Approach: String manipulation with hash map or two pointers
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(h) for recursion stack where h is height
*/

public class Solution {
public int CountHomogenous(string s) {

}
```

```
}
```

C Solution:

```
/*
* Problem: Count Number of Homogenous Substrings
* Difficulty: Medium
* Tags: string, tree, math
*
* Approach: String manipulation with hash map or two pointers
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(h) for recursion stack where h is height
*/

int countHomogenous(char* s) {

}
```

Go Solution:

```
// Problem: Count Number of Homogenous Substrings
// Difficulty: Medium
// Tags: string, tree, math
//
// Approach: String manipulation with hash map or two pointers
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(h) for recursion stack where h is height

func countHomogenous(s string) int {

}
```

Kotlin Solution:

```
class Solution {
fun countHomogenous(s: String): Int {

}
}
```

Swift Solution:

```
class Solution {
func countHomogenous(_ s: String) -> Int {

}
}
```

Rust Solution:

```
// Problem: Count Number of Homogenous Substrings
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// Tags: string, tree, math
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impl Solution {
pub fn count_homogenous(s: String) -> i32 {

}
}
```

Ruby Solution:

```
# @param {String} s
# @return {Integer}
def count_homogenous(s)

end
```

PHP Solution:

```
class Solution {

/**
* @param String $s
* @return Integer
*/
function countHomogenous($s) {

}
}
```

Dart Solution:

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Scala Solution:

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