Problem 2716: Minimize String Length

Problem Information

Difficulty: Easy
Acceptance Rate: 78.28%
Paid Only: No
Tags: Hash Table, String

Problem Description

Given a string `s`, you have two types of operation:

1. Choose an index `i` in the string, and let `c` be the character in position `i`. **Delete** the **closest occurrence** of `c` to the **left** of `i` (if exists). 2. Choose an index `i` in the string, and let `c` be the character in position `i`. **Delete** the **closest occurrence** of `c` to the **right** of `i` (if exists).

Your task is to **minimize** the length of `s` by performing the above operations zero or more times.

Return an integer denoting the length of the **minimized** string.

Example 1:

Input: s = "aaabc"

Output: 3

Explanation:

1. Operation 2: we choose `i = 1` so `c` is 'a', then we remove `s[2]` as it is closest 'a' character to the right of `s[1]`. `s` becomes "aabc" after this.

2. Operation 1: we choose `i = 1` so `c` is 'a', then we remove `s[0]` as it is closest 'a' character to the left of `s[1]`. `s` becomes "abc" after this.

Example 2:

Input: s = "cbbd"

Output: 3

Explanation:

1. Operation 1: we choose `i = 2` so `c` is 'b', then we remove `s[1]` as it is closest 'b' character to the left of `s[1]`. `s` becomes "cbd" after this.

Example 3:

Input: s = "baadccab"

Output: 4

Explanation:

1. Operation 1: we choose `i = 6` so `c` is 'a', then we remove `s[2]` as it is closest 'a' character to the left of `s[6]`. `s` becomes "badccab" after this.

2. Operation 2: we choose `i = 0` so `c` is 'b', then we remove `s[6]` as it is closest 'b' character to the right of `s[0]`. `s` becomes "badcca" fter this.

3. Operation 2: we choose `i = 3` so `c` is 'c', then we remove `s[4]` as it is closest 'c' character to the right of `s[3]`. `s` becomes "badca" after this.

4. Operation 1: we choose `i = 4` so `c` is 'a', then we remove `s[1]` as it is closest 'a' character to the left of `s[4]`. `s` becomes "bdca" after this.

Constraints:

* `1 <= s.length <= 100` * `s` contains only lowercase English letters

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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