

Problem 3545: Minimum Deletions for At Most K Distinct Characters

Problem Information

Difficulty: [Easy](#)

Acceptance Rate: 72.74%

Paid Only: No

Tags: Hash Table, String, Greedy, Sorting, Counting

Problem Description

You are given a string `s` consisting of lowercase English letters, and an integer `k`.

Your task is to delete some (possibly none) of the characters in the string so that the number of **distinct** characters in the resulting string is **at most** `k`.

Return the **minimum** number of deletions required to achieve this.

Example 1:

Input: `s = "abc", k = 2`

Output: 1

Explanation:

`s` has three distinct characters: `'a'`, `'b'` and `'c'`, each with a frequency of 1. * Since we can have at most `k = 2` distinct characters, remove all occurrences of any one character from the string. * For example, removing all occurrences of `'c'` results in at most `k` distinct characters. Thus, the answer is 1.

Example 2:

Input: `s = "aabb", k = 2`

****Output:**** 0

****Explanation:****

* `s` has two distinct characters (`a` and `b`) with frequencies of 2 and 2, respectively. * Since we can have at most `k = 2` distinct characters, no deletions are required. Thus, the answer is 0.

****Example 3:****

****Input:**** s = "yyzz", k = 1

****Output:**** 2

****Explanation:****

* `s` has two distinct characters (`y` and `z`) with frequencies of 3 and 2, respectively. * Since we can have at most `k = 1` distinct character, remove all occurrences of any one character from the string. * Removing all `z` results in at most `k` distinct characters. Thus, the answer is 2.

****Constraints:****

* $1 \leq s.length \leq 16$ * $1 \leq k \leq 16$ * `s` consists only of lowercase English letters.

Code Snippets

C++:

```
class Solution {
public:
    int minDeletion(string s, int k) {

    }
};
```

Java:

```
class Solution {  
    public int minDeletion(String s, int k) {  
  
    }  
}
```

Python3:

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