

# 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 = "yyz", 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 <= s.length <= 16` \* `1 <= k <= 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:
```