Problem 2024: Maximize the Confusion of an Exam

Problem Information

Difficulty: Medium
Acceptance Rate: 69.34%
Paid Only: No
Tags: String, Binary Search, Sliding Window, Prefix Sum

Problem Description

A teacher is writing a test with `n` true/false questions, with `'T'` denoting true and `'F'` denoting false. He wants to confuse the students by **maximizing** the number of **consecutive** questions with the **same** answer (multiple trues or multiple falses in a row).

You are given a string `answerKey`, where `answerKey[i]` is the original answer to the `ith` question. In addition, you are given an integer `k`, the maximum number of times you may perform the following operation:

* Change the answer key for any question to `'T'` or `'F'` (i.e., set `answerKey[i]` to `'T'` or `'F'`).

Return _the**maximum** number of consecutive_ `'T'`s or `'F'`s _in the answer key after performing the operation at most_ `k` _times_.

Example 1:

Input: answerKey = "TTFF", k = 2 **Output:** 4 **Explanation:** We can replace both the 'F's with 'T's to make answerKey = "_TTTT_ ". There are four consecutive 'T's.

Example 2:

Input: answerKey = "TFFT", k = 1 **Output:** 3 **Explanation:** We can replace the first 'T' with an 'F' to make answerKey = "_FFF_ T". Alternatively, we can replace the second 'T' with an 'F' to make answerKey = "T _FFF_ ". In both cases, there are three consecutive 'F's.

Example 3:

Input: answerKey = "TTFTTFTT", k = 1 **Output:** 5 **Explanation:** We can replace the first 'F' to make answerKey = "_TTTTT_ FTT" Alternatively, we can replace the second 'F' to make answerKey = "TTF _TTTTT_ ". In both cases, there are five consecutive 'T's.

Constraints:

* `n == answerKey.length` * `1 <= n <= 5 * 104` * `answerKey[i]` is either `'T'` or `'F'` * `1 <= k <= n`

Code Snippets

C++:

```
class Solution {
public:
int maxConsecutiveAnswers(string answerKey, int k) {

}
};
```

Java:

```
class Solution {
public int maxConsecutiveAnswers(String answerKey, int k) {

}
}
```

Python3:

```
class Solution:
def maxConsecutiveAnswers(self, answerKey: str, k: int) -> int:
```