

# Problem 3261: Count Substrings That Satisfy K-Constraint II

## Problem Information

Difficulty: **Hard**

Acceptance Rate: 22.56%

Paid Only: No

Tags: Array, String, Binary Search, Sliding Window, Prefix Sum

## Problem Description

You are given a **binary** string `s` and an integer `k`.

You are also given a 2D integer array `queries`, where `queries[i] = [li, ri]`.

A **binary string** satisfies the **k-constraint** if **either** of the following conditions holds:

\* The number of `0`'s in the string is at most `k`. \* The number of `1`'s in the string is at most `k`.

Return an integer array `answer`, where `answer[i]` is the number of substrings of `s[li..ri]` that satisfy the **k-constraint**.

**Example 1:**

**Input:** `s = "0001111"`, `k = 2`, `queries = [[0,6]]`

**Output:** `[26]`

**Explanation:**

For the query `[0, 6]`, all substrings of `s[0..6] = "0001111"` satisfy the k-constraint except for the substrings `s[0..5] = "000111"` and `s[0..6] = "0001111"`.

**Example 2:**

**\*\*Input:\*\*** s = "010101", k = 1, queries = [[0,5],[1,4],[2,3]]

**\*\*Output:\*\*** [15,9,3]

**\*\*Explanation:\*\***

The substrings of `s` with a length greater than 3 do not satisfy the k-constraint.

**\*\*Constraints:\*\***

\* `1 <= s.length <= 105` \* `s[i]` is either `0` or `1`. \* `1 <= k <= s.length` \* `1 <= queries.length <= 105` \* `queries[i] == [li, ri]` \* `0 <= li <= ri < s.length` \* All queries are distinct.

## Code Snippets

### C++:

```
class Solution {
public:
    vector<long long> countKConstraintSubstrings(string s, int k,
    vector<vector<int>>& queries) {

    }
};
```

### Java:

```
class Solution {
    public long[] countKConstraintSubstrings(String s, int k, int[][] queries) {

    }
}
```

### Python3:

```
class Solution:
    def countKConstraintSubstrings(self, s: str, k: int, queries:
    List[List[int]]) -> List[int]:
```