

2395. Longest Binary Subsequence Less Than or Equal to K

Difficulty : Medium

<https://leetcode.com/problems/longest-binary-subsequence-less-than-or-equal-to-k>

You are given a binary string s and a positive integer k .

Return *the length of the **longest** subsequence of s that makes up a **binary** number less than or equal to k .*

Note:

- The subsequence can contain **leading zeroes**.
- The empty string is considered to be equal to 0.
- A **subsequence** is a string that can be derived from another string by deleting some or no characters without changing the order of the remaining characters.

Example 1:

Input: $s = "1001010"$, $k = 5$

Output: 5

Explanation: The longest subsequence of s that makes up a binary number less than or equal to 5 is "00010", as this number is equal to 2 in decimal. Note that "00100" and "00101" are also possible, which are equal to 4 and 5 in decimal, respectively. The length of this subsequence is 5, so 5 is returned.

Example 2:

Input: $s = "00101001"$, $k = 1$

Output: 6

Explanation: "000001" is the longest subsequence of s that makes up a binary number less than or equal to 1, as this number is equal to 1 in decimal. The length of this subsequence is 6, so 6 is returned.

Constraints:

- $1 \leq s.length \leq 1000$
- $s[i]$ is either '0' or '1'.
- $1 \leq k \leq 10^9$