Problem 1416: Restore The Array

Problem Information

Difficulty: Hard
Acceptance Rate: 46.79%
Paid Only: No
Tags: String, Dynamic Programming

Problem Description

A program was supposed to print an array of integers. The program forgot to print whitespaces and the array is printed as a string of digits `s` and all we know is that all integers in the array were in the range `[1, k]` and there are no leading zeros in the array.

Given the string `s` and the integer `k`, return _the number of the possible arrays that can be printed as_`s` _using the mentioned program_. Since the answer may be very large, return it **modulo** `109 + 7`.

Example 1:

Input: s = "1000", k = 10000 **Output:** 1 **Explanation:** The only possible array is [1000]

Example 2:

Input: s = "1000", k = 10 **Output:** 0 **Explanation:** There cannot be an array that was printed this way and has all integer >= 1 and <= 10.

Example 3:

Input: s = "1317", k = 2000 **Output:** 8 **Explanation:** Possible arrays are [1317],[131,7],[13,17],[1,317],[13,1,7],[1,31,7],[1,3,17],[1,3,1,7]

Constraints:

* `1 <= s.length <= 105` * `s` consists of only digits and does not contain leading zeros. * `1 <= k <= 109`

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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