Problem 880: Decoded String at Index

Problem Information

Difficulty: Medium
Acceptance Rate: 37.17%
Paid Only: No
Tags: String, Stack

Problem Description

You are given an encoded string `s`. To decode the string to a tape, the encoded string is read one character at a time and the following steps are taken:

* If the character read is a letter, that letter is written onto the tape. * If the character read is a digit `d`, the entire current tape is repeatedly written `d - 1` more times in total.

Given an integer `k`, return _the_`kth` _letter (**1-indexed)** in the decoded string_.

Example 1:

Input: s = "leet2code3", k = 10 **Output:** "o" **Explanation:** The decoded string is "leetleetcodeleetleetcodeleetleetcode". The 10th letter in the string is "o".

Example 2:

Input: s = "ha22", k = 5 **Output:** "h" **Explanation:** The decoded string is "hahahaha". The 5th letter is "h".

Example 3:

Input: s = "a2345678999999999999999", k = 1 **Output:** "a" **Explanation:** The decoded string is "a" repeated 8301530446056247680 times. The 1st letter is "a".

Constraints:

* `2 <= s.length <= 100` * `s` consists of lowercase English letters and digits `2` through `9`. * `s` starts with a letter. * `1 <= k <= 109` * It is guaranteed that `k` is less than or equal to the length of the decoded string. * The decoded string is guaranteed to have less than `263` letters.

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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