Problem 471: Encode String with Shortest Length

Problem Information

Difficulty: Hard
Acceptance Rate: 50.51%
Paid Only: Yes
Tags: String, Dynamic Programming

Problem Description

Given a string `s`, encode the string such that its encoded length is the shortest.

The encoding rule is: `k[encoded_string]`, where the `encoded_string` inside the square brackets is being repeated exactly `k` times. `k` should be a positive integer.

If an encoding process does not make the string shorter, then do not encode it. If there are several solutions, return **any of them**.

Example 1:

Input: s = "aaa" **Output:** "aaa" **Explanation:** There is no way to encode it such that it is shorter than the input string, so we do not encode it.

Example 2:

Input: s = "aaaaa" **Output:** "5[a]" **Explanation:** "5[a]" is shorter than "aaaaa" by 1 character.

Example 3:

Input: s = "aaaaaaaaaa" **Output:** "10[a]" **Explanation:** "a9[a]" or "9[a]a" are also valid solutions, both of them have the same length = 5, which is the same as "10[a]".

Constraints:

* `1 <= s.length <= 150` * `s` consists of only lowercase English letters.

Code Snippets

C++:

```
class Solution {
public:
string encode(string s) {

}
};
```

Java:

```
class Solution {
public String encode(String s) {

}
}
```

Python3:

```
class Solution:
def encode(self, s: str) -> str:
```