

Problem 2232: Minimize Result by Adding Parentheses to Expression

Problem Information

Difficulty: Medium

Acceptance Rate: 68.14%

Paid Only: No

Tags: String, Enumeration

Problem Description

You are given a **0-indexed** string `expression` of the form `"+<num2>"` where `<num1>` and `<num2>` represent positive integers.

Add a pair of parentheses to `expression` such that after the addition of parentheses, `expression` is a **valid** mathematical expression and evaluates to the **smallest** possible value. The left parenthesis **must** be added to the left of `'+` and the right parenthesis **must** be added to the right of `'+`.

Return `expression` _after adding a pair of parentheses such that_ `expression` _evaluates to the**smallest** possible value._ If there are multiple answers that yield the same result, return any of them.

The input has been generated such that the original value of `expression`, and the value of `expression` after adding any pair of parentheses that meets the requirements fits within a signed 32-bit integer.

Example 1:

Input: expression = "247+38" **Output:** "2(47+38)" **Explanation:** The expression evaluates to $2 * (47 + 38) = 2 * 85 = 170$. Note that "2(4)7+38" is invalid because the right parenthesis must be to the right of the '+'. It can be shown that 170 is the smallest possible value.

Example 2:

****Input:**** expression = "12+34" ****Output:**** "1(2+3)4" ****Explanation:**** The expression evaluates to $1 * (2 + 3) * 4 = 1 * 5 * 4 = 20$.

****Example 3:****

****Input:**** expression = "999+999" ****Output:**** "(999+999)" ****Explanation:**** The expression evaluates to $999 + 999 = 1998$.

****Constraints:****

* `3 <= expression.length <= 10` * `expression` consists of digits from '1' to '9' and '+'. * `expression` starts and ends with digits. * `expression` contains exactly one '+'. * The original value of `expression`, and the value of `expression` after adding any pair of parentheses that meets the requirements fits within a signed 32-bit integer.

Code Snippets

C++:

```
class Solution {  
public:  
    string minimizeResult(string expression) {  
  
    }  
};
```

Java:

```
class Solution {  
public String minimizeResult(String expression) {  
  
}  
}
```

Python3:

```
class Solution:  
    def minimizeResult(self, expression: str) -> str:
```