

1021. Remove Outermost Parentheses

Solved

Easy

Topics

Companies

Hint

A valid parentheses string is either empty `""`, `"(" + A + ")"`, or `A + B`, where `A` and `B` are valid parentheses strings, and `+` represents string concatenation.

- For example, `""`, `"()"`, `"(()())"`, and `"(()(()))"` are all valid parentheses strings.

A valid parentheses string `s` is primitive if it is nonempty, and there does not exist a way to split it into `s = A + B`, with `A` and `B` nonempty valid parentheses strings.

Given a valid parentheses string `s`, consider its primitive decomposition: `s = P1 + P2 + ... + Pk`, where `Pi` are primitive valid parentheses strings.

Return `s` after removing the outermost parentheses of every primitive string in the primitive decomposition of `s`.

Example 1:

Input: `s = "(()())(())"`

Output: `"()()()"`

Explanation:

The input string is `"(()())(())"`, with primitive decomposition `"(()())" + "(())"`. After removing outer parentheses of each part, this is `"()()" + "()" = "()()()"`.

Example 2:

Input: `s = "(()())(())(()())"`

Output: `"()()()()()"`

The screenshot shows a code editor interface. On the left, the problem description for '1021. Remove Outermost Parentheses' is visible, including the definition of valid parentheses strings, primitive strings, and the task to remove the outermost parentheses from the primitive decomposition. Examples 1 and 2 are also shown. On the right, the 'Code' editor shows a C# solution. The solution uses a depth counter to track the nesting level of parentheses. When the depth is greater than 0, the current character is added to the result. When the depth reaches 0, it means an outermost pair of parentheses has been reached, and the next character (which will be an opening parenthesis) is skipped. The test case section shows the input `s = "(()())(())"` and the expected output `"()()()"`.

```

1 public class Solution {
2     public string RemoveOuterParentheses(string s) {
3         StringBuilder result = new StringBuilder();
4         int depth = 0;
5
6         foreach (char c in s) {
7             if (c == '(') {
8                 if (depth > 0) {
9                     result.Append(c);
10                }
11                depth++;
12            }
13            else if (c == ')') {
14                depth--;
15                if (depth > 0) {
16                    result.Append(c);
17                }
18            }
19        }
20        return result.ToString();
21    }
22 }

```

Код:

```

public class Solution
{
    public string RemoveOuterParentheses(string s)
    {
        StringBuilder result = new StringBuilder();
    }
}

```

```
int depth = 0;

foreach (char c in s)
{
    if (c == '(')
    {
        if (depth > 0)
        {
            result.Append(c);
        }
        depth++;
    }
    else
    {
        depth--;
        if (depth > 0)
        {
            result.Append(c);
        }
    }
}

return result.ToString();
}
```