



Longest valid Parentheses

Difficulty: **Hard** Accuracy: **26.13%** Submissions: **115K+** Points: **8**

Given a string **str** consisting of opening and closing parenthesis '(' and ')'. Find length of the longest valid parenthesis substring.

A parenthesis string is valid if:

- For every opening parenthesis, there is a closing parenthesis.
- Opening parenthesis must be closed in the correct order.

Examples :

Input: str = (()

Output: 2

Explanation: The longest valid parenthesis substring is "()".

Input: str =)()())

Output: 4

Explanation: The longest valid parenthesis substring is "()()".

Expected Time Complexity: $O(|str|)$

Expected Auxiliary Space: $O(|str|)$

Constraints:

$1 \leq |str| \leq 10^5$

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Java (1.8) Average Time: 20m

Start Timer

```
1- //{ Driver Code Starts
2- //Initial Template for Java
3-
4- import java.io.*;
5- import java.util.*;
6-
7- class GFG{
8-     public static void main(String args[])throws IOException
9-     {
10-         BufferedReader in = new BufferedReader(new InputStreamReader(System.in))
11-         int t = Integer.parseInt(in.readLine());
12-         while(t-- > 0){
13-             String S = in.readLine();
14-
15-             Solution ob = new Solution();
16-             System.out.println(ob.maxLength(S));
17-         }
18-     }
19- } // } Driver Code Ends
20-
21- //User function Template for Java
22-
23- class Solution{
24-     static int maxLength(String S){
25-         // Stack to store the indices of parentheses
26-         Stack<Integer> stack = new Stack<>();
27-         // Push -1 as an initial index to handle edge cases
28-         stack.push(-1);
29-         int maxLength = 0;
30-
31-     }
```

Custom Input

Compile & Run

Submit