

MCS – 253P ADVANCED PROGRAMMING AND PROBLEM SOLVING

LAB 1 PROGRAM (Generate Parenthesis)





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Question:

22. Generate Parentheses

Medium  19.7K  807  

 Companies

Given n pairs of parentheses, write a function to *generate all combinations of well-formed parentheses*.

Example 1:

Input: $n = 3$
Output: ["((()))", "(()())", "(())()", "()(())", "()()()"]

Example 2:

Input: $n = 1$
Output: ["()"]

Constraints:

- $1 \leq n \leq 8$

Code:

```

1  class Solution {
2  public:
3      vector<string> generateParenthesis(int n) {
4          vector<string>ans;
5          int left = n ,right =n;
6          string exp = "";
7          func(ans,exp,left,right);
8          return ans;
9      }
10
11     void func(vector<string> &ans,string exp,int left,int right){
12         if(left ==0 && right==0){
13             ans.push_back(exp);
14         }
15
16         if(left>0){
17             func(ans,exp+ "(",left-1,right);
18         }
19
20         if(right>0 && right>left){
21             func(ans,exp + ")",left,right-1);
22         }
23     }
24 };

```

Output:

Problem List

Description
Editorial
Solutions (8K)
Submissions

Accepted
Editorial
+ Solution

Runtime
Details

0 ms

Beats 100.00% of users with C++

Memory
Details

15.32 MB

Beats 36.82% of users with C++

More challenges

- 17. Letter Combinations of a Phone Number
- 2116. Check if a Parentheses String Can Be Valid

Status	Language	Runtime	Memory	Notes
Accepted	C++	0 ms	15.3 MB	a few seconds ago
Accepted	C++	4 ms	15.4 MB	Oct 04, 2023