

22. Generate Parentheses

[Add to List ▾](#)[Question](#)[Editorial Solution](#)[My Submissions \(/problems/generate-parentheses/submissions/\)](/problems/generate-parentheses/submissions/)

Total Accepted: **126285** Total Submissions: **300005** Difficulty: **Medium** Contributors: **Admin**

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

For example, given $n = 3$, a solution set is:

```
[
  "((()))",
  "(()())",
  "(())()",
  "()()()",
  "()(())"
]
```

[Hide Company Tags](#)[Google \(/company/google/\)](/company/google/)[Uber \(/company/uber/\)](/company/uber/)[Zenefits \(/company/zenefits/\)](/company/zenefits/)[Hide Tags](#)[Backtracking \(/tag/backtracking/\)](/tag/backtracking/)[String \(/tag/string/\)](/tag/string/)[Hide Similar Problems](#)[\(M\) Letter Combinations of a Phone Number \(/problems/letter-combinations-of-a-phone-number/\)](/problems/letter-combinations-of-a-phone-number/)[\(E\) Valid Parentheses \(/problems/valid-parentheses/\)](/problems/valid-parentheses/)

Have you met this question in a real interview?

[Discuss \(https://discuss.leetcode.com/category/30\)](https://discuss.leetcode.com/category/30)[Top Solutions](#)[Pick One \(/problems/random-one-question/\)](/problems/random-one-question/)[Notes](#)

C++ ▾





```
1 class Solution {
2 public:
3     vector<string> generateParenthesis(int n) {
4         vector<string> res;
5         helper(res,"",n,0);
6         return res;
7     }
8
9     void helper(vector<string>& res, string path, int left, int right){
10         if(left==0&&right==0) res.push_back(path);
11         if(left>0){
12             helper(res,path+"(",left-1,right+1);
13         }
14         if(right>0){
15             helper(res,path+")",left,right-1);
16         }
17     }
18 };
```

Custom Testcase ☐

Contribute Testcase 

[Run Code](#)[Submit Solution](#)

[Frequently Asked Questions \(/faq/\)](/faq/) | [Terms of Service \(/tos/\)](/tos/)

[Privacy](#)

Copyright © 2017 LeetCode