

Problem 3437: Permutations III

Problem Information

Difficulty: Medium

Acceptance Rate: 86.63%

Paid Only: Yes

Tags: Array, Backtracking

Problem Description

Given an integer n , an **alternating permutation** is a permutation of the first n positive integers such that no **two** adjacent elements are **both** odd or **both** even.

Return **_all such_ alternating permutations** sorted in lexicographical order.

Example 1:

Input: $n = 4$

Output: $[[1,2,3,4],[1,4,3,2],[2,1,4,3],[2,3,4,1],[3,2,1,4],[3,4,1,2],[4,1,2,3],[4,3,2,1]]$

Example 2:

Input: $n = 2$

Output: $[[1,2],[2,1]]$

Example 3:

Input: $n = 3$

Output: $[[1,2,3],[3,2,1]]$

Constraints:

*`1 <= n <= 10`

Code Snippets

C++:

```
class Solution {  
public:  
    vector<vector<int>> permute(int n) {  
  
    }  
};
```

Java:

```
class Solution {  
    public int[][] permute(int n) {  
  
    }  
}
```

Python3:

```
class Solution:  
    def permute(self, n: int) -> List[List[int]]:
```