

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]]:
```