Problem 1734: Decode XORed Permutation

Problem Information

Difficulty: Medium
Acceptance Rate: 66.47%
Paid Only: No
Tags: Array, Bit Manipulation

Problem Description

There is an integer array `perm` that is a permutation of the first `n` positive integers, where `n` is always **odd**.

It was encoded into another integer array `encoded` of length `n - 1`, such that `encoded[i] = perm[i] XOR perm[i + 1]`. For example, if `perm = [1,3,2]`, then `encoded = [2,1]`.

Given the `encoded` array, return _the original array_ `perm`. It is guaranteed that the answer exists and is unique.

Example 1:

Input: encoded = [3,1] **Output:** [1,2,3] **Explanation:** If perm = [1,2,3], then encoded = [1 XOR 2,2 XOR 3] = [3,1]

Example 2:

Input: encoded = [6,5,4,6] **Output:** [2,4,1,5,3]

Constraints:

* `3 <= n < 105` * `n` is odd. * `encoded.length == n - 1`

Code Snippets

C++:

```
class Solution {
public:
vector<int> decode(vector<int>& encoded) {

}
};
```

Java:

```
class Solution {
public int[] decode(int[] encoded) {

}
}
```

Python3:

```
class Solution:
def decode(self, encoded: List[int]) -> List[int]:
```