Problem 2433: Find The Original Array of Prefix Xor

Problem Information

Difficulty: Medium
Acceptance Rate: 88.21%
Paid Only: No
Tags: Array, Bit Manipulation

Problem Description

You are given an **integer** array `pref` of size `n`. Find and return _the array_`arr` _of size_`n` _that satisfies_ :

* `pref[i] = arr[0] ^ arr[1] ^ ... ^ arr[i]`.

Note that `^` denotes the **bitwise-xor** operation.

It can be proven that the answer is **unique**.

Example 1:

Input: pref = [5,2,0,3,1] **Output:** [5,7,2,3,2] **Explanation:** From the array [5,7,2,3,2] we have the following: - pref[0] = 5. - pref[1] = 5 ^ 7 = 2. - pref[2] = 5 ^ 7 ^ 2 = 0. - pref[3] = 5 ^ 7 ^ 2 ^ 3 = 3. - pref[4] = 5 ^ 7 ^ 2 ^ 3 ^ 2 = 1.

Example 2:

Input: pref = [13] **Output:** [13] **Explanation:** We have pref[0] = arr[0] = 13.

Constraints:

* `1 <= pref.length <= 105` * `0 <= pref[i] <= 106`

Code Snippets

C++:

```
class Solution {
public:
vector<int> findArray(vector<int>& pref) {

}
};
```

Java:

```
class Solution {
public int[] findArray(int[] pref) {

}
}
```

Python3:

```
class Solution:
def findArray(self, pref: List[int]) -> List[int]:
```