

5649. Decode XORed Array

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There is a **hidden** integer array `arr` that consists of `n` non-negative integers.

It was encoded into another integer array `encoded` of length `n - 1`, such that `encoded[i] = arr[i] XOR arr[i + 1]`. For example, if `arr = [1,0,2,1]`, then `encoded = [1,2,3]`.

You are given the `encoded` array. You are also given an integer `first`, that is the first element of `arr`, i.e. `arr[0]`.

Return *the original array* `arr`. It can be proved that the answer exists and is unique.

User Accepted:	0
User Tried:	1
Total Accepted:	0
Total Submissions:	1
Difficulty:	Easy

Example 1:

Input: `encoded = [1,2,3]`, `first = 1`

Output: `[1,0,2,1]`

Explanation: If `arr = [1,0,2,1]`, then `first = 1` and `encoded = [1 XOR 0, 0 XOR 2, 2 XOR 1] = [1,2,3]`

Example 2:

Input: `encoded = [6,2,7,3]`, `first = 4`

Output: `[4,2,0,7,4]`

Constraints:


- $2 \leq n \leq 10^4$
- `encoded.length == n - 1`
- $0 \leq encoded[i] \leq 10^5$
- $0 \leq first \leq 10^5$

JavaScript



```
1 /**
2  * @param {number[]} encoded
3  * @param {number} first
4  * @return {number[]}
5  */
6 const decode = (encoded, first) => {
7   let res = [first];
8   let n = encoded.length;
9   for (let i = 0; i < n; i++) {
10    let tmp = res[res.length - 1] ^ encoded[i];
11    res.push(tmp);
12   }
13   return res;
14 };
```

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