

2433. Find The Original Array of Prefix Xor

Description

You are given an integer array `pref` of size `n`. Find and return *the array* `arr` *of size* `n` *that satisfies*:

- $\text{pref}[i] = \text{arr}[0] \oplus \text{arr}[1] \oplus \dots \oplus \text{arr}[i]$.

Note that \oplus 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 \oplus 7 = 2.`
- `pref[2] = 5 \oplus 7 \oplus 2 = 0.`
- `pref[3] = 5 \oplus 7 \oplus 2 \oplus 3 = 3.`
- `pref[4] = 5 \oplus 7 \oplus 2 \oplus 3 \oplus 2 = 1.`

Example 2:

Input: `pref = [13]`

Output: `[13]`

Explanation: We have `pref[0] = arr[0] = 13.`

Constraints:

- $1 \leq \text{pref.length} \leq 10^5$
- $0 \leq \text{pref}[i] \leq 10^6$

