

Description

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2007. Find Original Array From Doubled Array

Medium

2181

109

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An integer array `original` is transformed into a **doubled** array `changed` by appending **twice the value** of every element in `original`, and then randomly **shuffling** the resulting array.

Given an array `changed`, return `original` if `changed` is a **doubled array**. If `changed` is not a **doubled array**, return an empty array. The elements in `original` may be returned in **any** order.

Example 1:

Input: `changed = [1,3,4,2,6,8]`

Output: `[1,3,4]`

Explanation: One possible original array could be `[1,3,4]`:

- Twice the value of 1 is $1 * 2 = 2$.
- Twice the value of 3 is $3 * 2 = 6$.
- Twice the value of 4 is $4 * 2 = 8$.

Other original arrays could be `[4,3,1]` or `[3,1,4]`.

Example 2:

Input: `changed = [6,3,0,1]`

Output: `[]`

Explanation: `changed` is not a doubled array.

Example 3:

Input: `changed = [1]`

Output: `[]`

Explanation: `changed` is not a doubled array.

Constraints:

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

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```
1 class Solution {
2 public:
3     vector<int> findOriginalArray(vector<int>
  changed) {
4
5     }
6 };
```