1826. Faulty Sensor

Easy · Topics · ◫ Companies · ○ Hint

An experiment is being conducted in a lab. To ensure accuracy, there are **two** sensors collecting data simultaneously. You are given two arrays `sensor1` and `sensor2`, where `sensor1[i]` and `sensor2[i]` are the ith data points collected by the two sensors.

However, this type of sensor has a chance of being defective, which causes **exactly one** data point to be dropped. After the data is dropped, all the data points to the **right** of the dropped data are **shifted** one place to the left, and the last data point is replaced with some **random value**. It is guaranteed that this random value will **not** be equal to the dropped value.

- For example, if the correct data is `[1,2,3,4,5]` and `3` is dropped, the sensor could return `[1,2,4,5,7]` (the last position can be **any** value, not just `7`).

We know that there is a defect in **at most one** of the sensors. Return *the sensor number (`1` or `2`) with the defect. If there is **no defect** in either sensor or if it is **impossible** to determine the defective sensor, return `-1`.*

Example 1:

```
Input: sensor1 = [2,3,4,5], sensor2 = [2,1,3,4]
Output: 1
Explanation: Sensor 2 has the correct values.
The second data point from sensor 2 is dropped, and the last value of sensor 1 is replaced by a 5.
```

Example 2:

```
Input: sensor1 = [2,2,2,2,2], sensor2 = [2,2,2,2,5]
Output: -1
Explanation: It is impossible to determine which sensor has a defect.
Dropping the last value for either sensor could produce the output for the other sensor.
```

Example 3:

```
Input: sensor1 = [2,3,2,2,3,2], sensor2 = [2,3,2,3,2,7]
Output: 2
Explanation: Sensor 1 has the correct values.
The fourth data point from sensor 1 is dropped, and the last value of sensor 1 is replaced by a 7.
```

Constraints:

- `sensor1.length == sensor2.length`
- `1 <= sensor1.length <= 100`
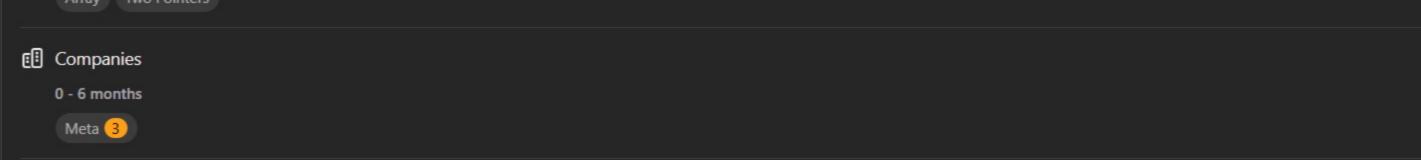- `1 <= sensor1[i], sensor2[i] <= 100`

Seen this question in a real interview before? 1/5

Yes   No

Accepted **5.9K** | Submissions **11.8K** | Acceptance Rate **50.3%**

◇ Topics   ⌃

Array   Two Pointers

◫ Companies   ⌃

0 - 6 months

Meta ③

○ Hint 1   ⌃

Check for a common prefix of the two arrays.

○ Hint 2   ⌃

After this common prefix, there should be one array similar to the other but shifted by one.

○ Hint 3   ⌃

If both arrays can be shifted, return -1.

○ Discussion (4)   ⌃