Lost Pencil

Time Limit: 3.0s **Memory Limit:** 64M

KODTÜ6 Question C

Lost Pencil

Execution time limit is 3 seconds.
Runtime memory usage limit is 64 megabytes.

Ramiz Uncle's collection has n pencils, each of which is of a different color. The colors of these pencils are expressed by integers from 1 to n.
Tired of playing with her toys, Mujgan decided to play with these pencils. After playing for a while, she lost one of the pencils, but to avoid her uncle noticing, she put one of her own pencils into the collection.

The pencil she put in is either of the same color as the lost pencil or another pencil from this collection. If it's a pencil of the same color as the lost one, her uncle won't notice that the pencil is missing, otherwise, he won't fail to notice the loss. But can you find the lost pencil?

You are given the number of pencils in the uncle's collection and the state of the pencils after Mujgan added a pencil to replace the lost one, that is, the colors of the pencils in the collection. Find the color of the pencil that Mujgan lost. If it's impossible to find it precisely, output −1.

Input

The first line contains a single integer n (2≤n≤2*10^6).

Each of the next n lines contains an integer c[i], (1≤c[i]≤n) — the colors of the pencils.

Output

If it's possible to find the pencil that Mujgan lost, output the color of this pencil, otherwise output −1.

Examples

Input 1:

```
3
2
3
2
```

Output 1:

```
1
```

Input 2:

```
2
2
1
```

Output 2:

```
-1
```

Explanation

Test Case 1.

The color of the lost pencil is 1 and Mujgan replaced it with a pencil of color 2.

Test Case 2.

Mujgan did a very good job replacing the lost pencil :).