

## Introductory Contest

### Question 4: Spanning Subarray

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A spanning subarray is a subarray containing all the elements in the original array. For example, let an initial array,  $A = [1, 2, 3, 3, 2, 4, 1, 2, 2]$ . The subarray  $A' = [3, 2, 4, 1, 2]$  is spanning because it contains all the elements of  $A$ . However, the subarray  $B = [1, 2, 3]$  is not spanning because it missing the element 4 present in  $A$ . Given an initial array  $A$  of length  $N$ , output the length of the shortest spanning subarray.

#### Input Format

The first line contains an integer  $N$ . The following line contains  $N$  space-separated integers representing the elements of  $A$ .

#### Output Format

In a single line, output a single integer representing the length of the shortest spanning array.

#### Sample Input

```
10
1 2 3 3 2 3 4 1 2 2
```

#### Sample Output

```
4
```

#### Constraints

Subtask 1: [46 Marks]  $N \leq 100$

Subtask 2: [27 Marks]  $N \leq 10^5$

Subtask 4: [27 Marks]  $N \leq 10^6$