

# Minimum Distances

Consider an array of  $n$  integers,  $A = [a_0, a_1, \dots, a_{n-1}]$ . The distance between two indices,  $i$  and  $j$ , is denoted by  $d_{i,j} = |i - j|$ .

Given  $A$ , find the *minimum*  $d_{i,j}$  such that  $a_i = a_j$  and  $i \neq j$ . In other words, find the minimum distance between any pair of equal elements in the array. If no such value exists, print  $-1$ .

**Note:**  $|a|$  denotes the absolute value of  $a$ .

## Input Format

The first line contains an integer,  $n$ , denoting the size of array  $A$ .

The second line contains  $n$  space-separated integers describing the respective elements in array  $A$ .

## Constraints

- $1 \leq n \leq 10^3$
- $1 \leq a_i \leq 10^5$

## Output Format

Print a single integer denoting the minimum  $d_{i,j}$  in  $A$ ; if no such value exists, print  $-1$ .

## Sample Input

```
6
7 1 3 4 1 7
```

## Sample Output

```
3
```

## Explanation

Here, we have two options:

- $a_1$  and  $a_4$  are both  $1$ , so  $d_{1,4} = |1 - 4| = 3$ .
- $a_0$  and  $a_5$  are both  $7$ , so  $d_{0,5} = |0 - 5| = 5$ .

The answer is  $\min(3, 5) = 3$ .