Minimum Distances

by Shafaet

Consider an array of n integers, $A = [a_0, a_1, \ldots, a_{n-1}]$. 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 $min(3, 5) = 3$.

Submissions: 9010

Max Score: 20

Difficulty: Easy

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```
using System;
using System.Collections.Generic;
using System.IO;
using System.Linq;
class Solution {

    static void Main(String[] args) {
        int n = Convert.ToInt32(Console.ReadLine());
        string[] A_temp = Console.ReadLine().Split(' ');
        int[] A = Array.ConvertAll(A_temp,Int32.Parse);
    }
}

```

Line: 1 Col: 1

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