

Minimum Distances

The distance between two array values is the number of indices between them. Given a , find the minimum distance between any pair of equal elements in the array. If no such value exists, return -1 .

Example

$a = [3, 2, 1, 2, 3]$

There are two matching pairs of values: 3 and 2 . The indices of the 3 's are $i = 0$ and $j = 4$, so their distance is $d[i, j] = |j - i| = 4$. The indices of the 2 's are $i = 1$ and $j = 3$, so their distance is $d[i, j] = |j - i| = 2$. The minimum distance is 2 .

Function Description

Complete the *minimumDistances* function in the editor below.

minimumDistances has the following parameter(s):

- *int a[n]*: an array of integers

Returns

- *int*: the minimum distance found or -1 if there are no matching elements

Input Format

The first line contains an integer n , the size of array a .

The second line contains n space-separated integers $a[i]$.

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

STDIN	Function
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6	arr[] size n = 6
7 1 3 4 1 7	arr = [7, 1, 3, 4, 1, 7]

Sample Output

3

Explanation

There are two pairs to consider:

- $a[1]$ 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 $\min(3, 5) = 3$.