# Minimum Distances

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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
-----        --------
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 $\boldsymbol{min(3,5) = 3}$.

Change Theme Language C++14

```
6   string rtrim(const string &);
7   vector<string> split(const string &);
8
9   /*
10   * Complete the 'minimumDistances' function below.
11   *
12   * The function is expected to return an INTEGER.
13   * The function accepts INTEGER_ARRAY a as parameter.
14   */
15
16  int minimumDistances(vector<int> a) {
17      unordered_map<int,int> counter;
18      int min_distance = 10000 ;
19
20      for(int i = 0 ; i < a.size() ; i++) {
21          if(counter[a[i]]) {
22              min_distance = min(min_distance , abs(i + 1 - counter[a[i]]));
23          }
24
25          else {
26              counter[a[i]] = i + 1;
27          }
28      }
29
30      return min_distance == 10000 ? -1 : min_distance ;
31  }
32
33  int main()
34  {
35      ofstream fout(getenv("OUTPUT_PATH"));
36
```

Line: 22 Col: 56

Upload Code as File  Test against custom input  Run Code  Submit Code

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46% 646/850


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Compiler Message

Success

Test case 5

Test case 6

Test case 7

Test case 8

Test case 9

Input (stdin) Download

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

Expected Output Download

```
3
```