

The name of this problem makes no sense.

## Problem

Given a positive integer  $N$ , consider an array  $a$  of size  $N$ . Determine the size of the largest subarray<sup>1</sup> of  $a$  that has at least two values with maximum frequency.

## Implementation Details

You need to implement the function `Doblemente_Aficionados()`. This function receives an integer  $N$  and a vector  $a$ , with  $N$  elements. This function should return an integer, the maximum size of a subarray of  $a$  that has at least two values with maximum frequency. The function would look like this:

```
#include <bits/stdc++.h>
using namespace std;

int Doblemente_Aficionados(int N, vector<int> a) {
    // Implement this function.
}
```

The grader will run the function **multiple** times on each test case.

## Examples

*Example 1:*

- The grader calls the function

$$\text{Doblemente\_Aficionados}(6, \{1, 1, 2, 2, 1, 5\})$$

- In this case, returning 5 would give a verdict of accepted, because the subarray  $a[1, 6] = \{1, 2, 2, 1, 5\}$  has a maximum frequency of 2, and the values 2 and 1 each appear exactly 2 times. The array  $a$  does not meet the condition, as the value 1 appears 3 times, 2 appears 2 times, and 5 appears once; there are not two values with maximum frequency.

*Example 2:*

- The grader calls the function

$$\text{Doblemente\_Aficionados}(10, \{2, 2, 2, 5, 4, 1, 3, 1, 2, 2\})$$

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<sup>1</sup>A subarray is an array obtained by removing some prefix or suffix from the original array.

- In this case, returning 7 would give a verdict of accepted.

*Example 3:*

- The grader calls the function

$$\text{Doblemente\_Aficionados}(10, \{2, 2, 2, 7, 8, 2, 5, 2, 6, 6\})$$

- In this case, returning 7 would give a verdict of accepted.

*Example 4:*

- The grader calls the function

$$\text{Doblemente\_Aficionados}(10, \{1, 1, 1, 4, 4, 4, 5, 5, 5, 5\})$$

- In this case, returning 9 would give a verdict of accepted.

*Example 5:*

- The grader calls the function

$$\text{Doblemente\_Aficionados}(1, \{1\})$$

- In this case, returning 0 would give a verdict of accepted.

## Considerations

- $1 \leq N \leq 2 \times 10^5$ .
- For all  $0 \leq i \leq N - 1$ , it holds that  $1 \leq a[i] \leq N$ .
- Let  $S_N$  be the sum of the values of  $N$  over all calls to the function in a case. It holds that  $S_N \leq 2 \times 10^5$ .

## Subtasks

- (10 points)  $N \leq 2000$ .
- (20 points) It holds that there exists a subarray of the size of the answer, whose maximum frequency values are 1 and 2.
- (30 points) For all  $0 \leq i \leq N - 1$ , it holds that  $1 \leq a[i] \leq \min(N, 100)$ .
- (40 points) Without additional restrictions.