

La tarea

Today Pispirito was a kind of logic for the first time, the teacher left a task he can not complete without your help. A Pispirito give a vector of non-negative integers a_1, a_2, \dots, a_n . What you should do is, first, choose an integer then x add some elements of the vector (not more than once), subtract x from some other elements (also, no more than once) and not change other items, so that all vector elements are equal. Pispirito wonders if such can be selected integer x and change some elements of the array using this x to make all elements are equal.

TODO LOS ALGORITMOS EN ESPAÑOL [AQUI](#)

Input

The first line of input contains an integer n ($1 \leq n \leq 100\,000$) - the number of integers in the vector Pispirito. The second line contains n integers a_1, a_2, \dots, a_n ($0 \leq a_i \leq 10^9$) - vector elements.

Output

If it is impossible for all elements of the vector are equal by the procedure specified in the problem statement, then print "NO" (without quotation marks) in the only line of output. Otherwise print "YES" (without quotation marks).

Example

Input:

```
5
1 3 3 2 1
```

Output:

```
Si
```

Input:

```
5
1 3 3 2 1
```

Output:

```
Si
```

NOTE In the first example Pispirito must select $x = 1$, and then add it to the first and last element of the vector and subtracting the second and third elements.