

Palindrome array

Summer quarter will end soon, EIU Programming Club started preparing for the upcoming OLP. The first problem to warm up is checking if the array is palindrome . The array is palindrome if the elements read from the beginning to the end are same as when reading from the end to the beginning.

Input

The first line contains an integer n that is the length of the array ($n \leq 10^5$).

The second line contains n integers that are the elements in the array. Each element is represented by a signed 32-bit integer.

Output

If the given array is a palindrome , output "YES" otherwise output "NO".

Example

Input:

5
6 5 4 5 6

Output:

YES

Input:

6
6 5 4 3 5 6

Output:

NO