

Consider a function $f : X \rightarrow X$ where X is any set, and f is a bijection.

Now, if $f = f^{-1}$ then f is called an *involution*. In other words, a function f is called an involution if $f(f(x)) = x$

In this task you're given a permutation $f : \{1, 2, 3, \dots, n\} \rightarrow \{1, 2, 3, \dots, n\}$.

Determine whether f is an involution or not.

Constraints

$$1 \leq n \leq 20$$

Input Format

There are **2** lines in the input.
The first line contains a single positive integer n .
The second line contains n space separated integers, the values of $f(1), f(2), f(3), \dots, f(n)$, respectively.

Output Format

Output "YES" if f is an involution. Otherwise, output "NO".

Sample Input

```
2
2 1
```

Sample Output

```
YES
```

Explanation

Since, $f(1) = 2$ and $f(2) = 1$, $f^{-1}(1) = 2$ and $f^{-1}(2) = 1$.
Hence, f is an involution.