Check Mapping

Consider a function $f : A \rightarrow A$ which map a member of set A to itself. For simplicity, we let A be a set of integers from 1 to **N.** The function f can be described easily by a sequence **S** of **N** integers <**d1**, **d2**, **d3**, ..., **dn**> which indicates that f[1] is d1 and f[2] is d2, ..., f[n] is dn.

We would like to know if the given sequence **S** makes f be a 1-1 and on-to function. That is, each number from 1..**N** appears exactly once in **S**

Input

- The first line contains the one integers **N** which describes the set A
- The second line contains **N** integers, **d1 d2 d3** ... **dn**, which describe the sequence **S**

Output

The output is one line and must be "YES" only if the function described by **D** is 1-1 and on-to and be "NO" otherwise.

Example

Input	**Output**
4 1 2 3 4	YES
7 -1 -2 3 0 2 3 4	NO
5 5 4 3 1 3	NO