

Check Mapping

Time limit: 1 sec

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 ($1 \leq N \leq 100,000$) 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 S 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