A. Love Triangle

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

As you could know there are no male planes nor female planes. However, each plane on Earth likes some other plane. There are n planes on Earth, numbered from 1 to n, and the plane with number i likes the plane with number f_i, where $1 \le f_i \le n$ and $f_i \ne i$.

We call a love triangle a situation in which plane A likes plane B, plane B likes plane C and plane C likes plane A. Find out if there is any love triangle on Earth.

Input

The first line contains a single integer n ($2 \le n \le 5000$) — the number of planes.

The second line contains n integers $f_1, f_2, ..., f_n$ ($1 \le f_i \le n$, $f_i \ne i$), meaning that the i-th plane likes the f_i-th.

Output

Output «YES» if there is a love triangle consisting of planes on Earth. Otherwise, output «NO».

You can output any letter in lower case or in upper case.

Examples

input Copy

```
5
2 4 5 1 3
```

output Copy

```
YES
```

input Copy

```
5
5 5 5 5 1
```

output Copy

```
NO
```

Note

In first example plane 2 likes plane 4, plane 4 likes plane 1, plane 1 likes plane 2 and that is a love triangle.

In second example there are no love triangles.