

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 $1 \leq f_i \leq n$ and $f_i \neq i$.

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 ($2 \leq n \leq 5000$) — the number of planes.

The second line contains n integers f_1, f_2, \dots, f_n ($1 \leq f_i \leq n$, $f_i \neq i$), 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.

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graphs

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