**Football**

Buggy is playing a weird football match. Her team has players, each player has a number of **0, 1, 2, ...,** . Buggy has number . According to their coach, when player with number has the ball, she will only pass the ball to player with number . It is guaranteed that she will not pass the ball to herself (i.e . Note that it is possible for some player to never get the ball.

For example, for and . We have , then whenever player has the ball, she will pass it to player . We also have **.** Although player **3** never gets the ball (no one passes the ball to her), she must keep in mind that whenever she has the ball, she will pass it to player .

Initially, Buggy has the ball. She really wants to play with the ball as much as possible, so she wonders if she can have the ball again after a finite number of passes. Please help Buggy!

## Input

The first line contains an integer – the number of players, including Buggy.

The second line contains positive integers **(**

## Output

If after a finite number of passes, Buggy can have the ball again, print “YES”. Otherwise, print “NO”

## Examples

|  |  |
| --- | --- |
| **Input (football1.in)** | **Output (football1.out)** |
| 5  2 4 1 0 3 | YES |

## 

|  |  |
| --- | --- |
| **Input (football2.in)** | **Output (football2.out)** |
| 3  1 2 1 | NO |

## 

**Explanation:**

**For the 1st example:**

We have . As **,** player 0 will only pass the ball to player 2. Next, , then player 2 passes the ball to player 1. Then **,** the ball will be passed to player 4. We have , the ball then will be passed to player 3. And finally**,** , so Buggy will receive the ball from player 3. Therefore, the answer is YES.

**For the 2nd example:**

## After Buggy passes the ball, player numbered 1 and 2 will alternatively pass the ball to each other. Therefore, the answer is NO.

## Note:

1. A skeleton file has been given to help you. You should not create a new file or rename the file provided. You should develop your program using this skeleton file.
2. You are free to define your own helper methods and classes (or remove existing ones) if it is suitable but you must put all the new classes, if any, in the same skeleton file provided

## Skeleton File

You are given the skeleton file Football.java. You should see the following contents when you open the file:

|  |
| --- |
| /\*\*  \* Name :  \* Matric. No :  \*/  import java.util.\*;  public class Football {  private void run() {  }  public static void main(String args[]) {  Football football = new Football();  football.run();  }  } |