Task Zagi

Jakov and Toni, the two best players in the world, will face each other in the finals of the world championship in *krastoboj*.

Krastoboj is a game played by two players on a sequence of positive integers. The players take turns making moves, and the player who cannot make a move loses the game. At the very beginning, there is only one sequence of positive integers on the board - the initial sequence.

In one move, a player chooses **one** of the existing sequences and **one** number x that appears in that sequence. Then they delete **all** occurrences of x in the chosen sequence, thereby **splitting** the sequence into several new sequences separated at the positions where x appeared.

A sequence of numbers - the template for the final match - has been found. It is known that the initial sequence in the final will be some **contiguous** subsequence of this template sequence. You are given q scenarios. For each scenario, can you determine who the winner will be, assuming that both Toni and Jakov play optimally and that Toni makes the first move?

Input

The first line contains two positive integers n and q ($1 \leq n, q \leq 10^5$).

The second line contains a sequence of positive integers $a_1, a_2, \ldots, a_n$ ($1 \leq a_i \leq 32$ for each $i = 1, 2, \ldots, n$).

The following q lines each contain two integers l_i and r_i ($1 \leq l_i \leq r_i \leq n$), the boundaries of the contiguous subsequence considered in the i-th scenario.

Output

For each query, print on a separate line either `Toni` or `Jakov`, the name of the winner in the i-th scenario.

Scoring

Subtask	Points	Constraints
1	15	$n, q \leq 10$
2	11	$n, q \leq 1000, a_i \leq 2$
3	18	$n, q \leq 1000$
4	14	$a_i \leq 2$
5	23	$a_{l_i} = a_{r_i}$ for every $i = 1, \ldots, q$
6	29	No additional constraints.

Examples

input

```
6 4
1 3 2 3 1 2
1 1
2 3
2 4
1 3
```

output

```
Toni
Jakov
Toni
Toni
```

input

```
10 5
3 3 3 1 2 2 1 2 2 1
2 3
9 10
5 6
5 8
3 7
```

output

```
Toni
Jakov
Toni
Toni
Toni
```

Clarification of the first example: In the third scenario, Toni chooses $x = 2$, which splits the sequence into two sequences of length 1. Whichever sequence Jakov chooses next, Toni will choose the remaining one, after which Jakov will have no possible moves left.