



CTU Open Contest 2026

Milky way

`milkyway.(c|cpp|py), Milkyway.(java|kt)`

Míša hasn't lived in the real world for a long time. Instead, he sits in a dark room with heavy studio headphones clamped tightly to his ears, listening to nothing but static clicks and high-pitched cosmic squeals. Míša is capturing signals from deep space. Every second, exactly one tone arrives at a specific frequency.

The universe is a malicious entity, and Míša suffers from a highly specific form of intergalactic OCD. He cannot tolerate chaos. The moment he puts his headphones on, his brain demands absolute, predictable harmony. Hence, Míša is looking for satisfactory sequences of tones.

A contiguous sequence of tones is *satisfactory* for Míša if the frequencies of the tones are non-decreasing. More formally, the sequence $a_\ell, a_{\ell+1}, \dots, a_{r-1}, a_r$ is satisfactory if $a_\ell \leq a_{\ell+1} \leq \dots \leq a_{r-1} \leq a_r$.

Míša would like to answer q queries. Each query is given by a pair of endpoints ℓ, r , and he wants to determine whether the sequence $a_\ell, a_{\ell+1}, \dots, a_{r-1}, a_r$ is satisfactory or not.

Input Specification

The input starts with two lines. The first line contains two integers n ($1 \leq n \leq 10^6$) and q ($1 \leq q \leq 10^5$) separated by spaces, giving the number of frequencies and number of queries respectively.

The second line contains n space-separated integers $a_1, a_2, \dots, a_n$ ($-10^6 \leq a_i \leq 10^6$) representing the frequencies Míša has captured.

Then q lines follow, each with two space-separated integers ℓ and r ($1 \leq \ell \leq r \leq n$) indicating the start and end of the query interval $a_\ell, a_{\ell+1}, \dots, a_{r-1}, a_r$.

Output Specification

For each query, output YES if the query interval is satisfactory for Míša, and NO otherwise.

Sample Input 1

```
7 5
1 2 3 2 4 -1 -1
1 2
3 4
1 7
1 1
6 7
```

Output for Sample Input 1

```
YES
NO
NO
YES
YES
```