

G. Divisible Subarrays

time limit per test: 7 seconds
memory limit per test: 1024 megabytes

Technically, this is an interactive problem.

An array a of m numbers is called *divisible* if at least one of the following conditions holds:

- There exists an index i ($1 \leq i < m$) and an integer x such that for all indices j ($j \leq i$), it holds that $a_j \leq x$ and for all indices k ($k > i$), it holds that $a_k > x$.
- There exists an index i ($1 \leq i < m$) and an integer x such that for all indices j ($j \leq i$), it holds that $a_j > x$ and for all indices k ($k > i$), it holds that $a_k \leq x$.

You are given a permutation p of integers $1, 2, \dots, n$. Your task is to answer queries of the following form fast: if we take only the segment $[l, r]$ from the permutation, that is, the numbers p_l, p_{l+1}, \dots, p_r , is this subarray of numbers *divisible*?

Queries will be submitted in interactive mode in groups of 10, meaning you will not receive the next group of queries until you output all answers for the current group.

Input

The first line contains one integer n ($2 \leq n \leq 2 \cdot 10^5$) — the size of the permutation.

The second line contains n integers p_i ($1 \leq p_i \leq n$) — the permutation of natural numbers itself.

The third line contains one integer q ($10 \leq q \leq 10^6, q \bmod 10 = 0$) — the number of queries.

The following q lines contain two integers l and r ($1 \leq l < r \leq n$) — the parameters of the query.

Output

For each query, output the string "YES" if the subarray from this query is *divisible* and "NO" otherwise.

After printing the answers to a group of queries, do not forget to output the end of line and flush the output buffer. Otherwise, you may get the `Idleness Limit Exceeded` verdict. To flush the buffer, use:

- `fflush(stdout)` or `cout.flush()` in C++;
- `System.out.flush()` in Java;
- `flush(output)` in Pascal;
- `stdout.flush()` in Python;
- refer to the documentation for other languages.

You have to flush the output buffer after the 10-th, 20-th, 30-th query (and so on), i. e. after each query with index divisible by 10. After that, you can read the next group of queries.

Example

input Copy

```
7
4 2 3 6 1 5 7
20
1 2
1 3
1 4
1 5
1 6
2 3
2 4
2 5
2 6
3 4
3 5
3 6
```

Educational Codeforces Round 179 (Rated for Div. 2)

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++23 14.2 (64 bit, ms)

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
322867204	Jun/04/2025 16:42	Accepted
322866633	Jun/04/2025 16:38	Idleness limit exceeded on test 1
322866193	Jun/04/2025 16:34	Idleness limit exceeded on test 1

→ Problem tags

binary search brute force data structures interactive

No tag edit access

→ Contest materials

- Announcement

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

output
YES
YES
YES
YES
NO
YES
YES
YES
YES
NO
YES
YES
NO
YES
YES
YES
YES
YES
YES
YES
YES
YES
YES
```

Supported by

