Find "rururutata"

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3.5 seconds
Memory limit:	1024 megabytes

A **rururutata type sequence** is defined as a sequence that can be written as $r+r+r+t+t$ (+ means concatenation) using **non-empty** sequences r and t.

You are given an integer sequence $S = (S_1, S_2, \ldots, S_N)$ of length N. There are Q queries, which you must process in order.

In each query, integers L and R are given. Determine whether there exists a **rururutata type sequence** as a contiguous subarray of $(S_L, S_{L+1}, \ldots, S_R)$.

Input

The input is given in the following format:

N
$S_1\ S_2\ \ldots\ S_N$
Q
query_1
query_2
$\vdots$
query_Q

Each query is given in the following format:

$L\ R$

- $1 \leq N \leq 5 \times 10^5$
- $1 \leq S_i \leq N\ (1 \leq i \leq N)$
- $1 \leq Q \leq 5 \times 10^5$
- $1 \leq L \leq R \leq N$
- All input values are integers.

Output

Print Q lines.

On the i-th line, print `Yes` if a **rururutata type sequence** exists for the i-th query, and `No` otherwise.

Example

standard input	standard output
17 3 3 3 2 2 2 4 3 4 3 4 3 2 2 2 2 2 5 1 5 4 12 2 6 8 15 13 17	Yes Yes No No Yes

Note

For the first query, $(S_1, S_2, S_3, S_4, S_5) = (3, 3, 3, 2, 2)$ is a **rururutata type sequence**. The condition is satisfied by taking $r = (3)$ and $t = (2)$.

For the second query, among $(S_4, S_5, \ldots, S_{12})$, the contiguous subarray $(S_4, S_5, \ldots, S_{10}) = (2, 2, 2, 4, 3, 4, 3)$ is a **rururutata type sequence**. The condition is satisfied by taking $r = (2)$ and $t = (4, 3)$.

For the third query, $(3, 3, 2, 2, 2)$ is not a **rururutata type sequence**, and it clearly does not contain any shorter **rururutata type sequence** either.

For the fourth query, note that $(3, 3, 3, 2, 2)$ is not the contiguous subarray.

For the fifth query, note that it is allowed for r and t to be the same.