

## Problem D. The Jump from Height of Self-importance to Height of IQ Level

Input file: *standard input*  
Output file: *standard output*  
Time limit: 7 seconds  
Memory limit: 512 mebibytes

There are  $n$  skyscrapers arranged in a row, the height of the  $i$ -th of them is  $h_i$ . The numbers  $h_i$  form a permutation of integers from 1 to  $n$ .

Alexey wants to make a jump using his grappling hook. In order to perform a jump, he needs exactly three skyscrapers:  $i, j, k$ , such that  $i < j < k$  and  $h_i < h_j < h_k$ .

In addition, skyscrapers sometimes change their positions. You have to handle  $q$  queries:

In the  $i$ -th query you are given  $l_i, r_i, k_i$ . Skyscraper from every position  $j$  such that  $l_i \leq j \leq r_i - k_i$  moves to position  $j + k_i$ , and skyscraper from every position  $j$  such that  $r_i - k_i + 1 \leq j \leq r_i$  moves to position  $j + k_i - (r_i - l_i + 1)$ . In other words, you need to shift the segment  $l_i, \dots, r_i$  of the skyscrapers cyclically to the right  $k_i$  times.

After each query, help Alexey to determine whether he can perform a jump or not.

### Input

The first line contains one integer  $n$  ( $1 \leq n \leq 120\,000$ ), the number of skyscrapers.

The second line contains  $n$  integers  $h_i$  ( $1 \leq h_i \leq n$ ), the heights of the skyscrapers. The numbers  $h_i$  are pairwise distinct.

The third line contains one integer  $q$  ( $1 \leq q \leq 120\,000$ ), the number of queries.

Next  $q$  lines contain descriptions of queries: the  $i$ -th of them contains three positive integers  $l_i, r_i, k_i$  ( $1 \leq l_i \leq r_i \leq n, 0 \leq k_i \leq r_i - l_i + 1$ ).

### Output

For each query, print a single word on a separate line: "YES" if there are suitable skyscrapers to perform a jump, and "NO" otherwise.

### Examples

standard input	standard output
6 2 5 6 1 3 4 1 1 6 5	YES
8 5 1 2 8 7 6 3 4 4 2 4 2 4 5 1 1 3 2 3 8 2	YES YES YES YES
5 4 3 2 5 1 2 3 4 1 1 2 1	NO YES
6 6 5 4 3 2 1 3 1 1 0 1 3 1 2 5 3	NO NO YES

## Note

