

Another Contest 10 Problem 3 - Wesley's Anger Contest 7 Problem 3 - The Obligatory Rage Tree Problem

Time limit: 5.0s **Memory limit:** 1G

You are given an array of N elements. Support the following two operations:

- `UPDATE i v` - Set the element at index `i` to `v`.
- `QUERY l r` - Output the maximum element of the subarray bounded by `l` and `r`.

Constraints

$1 \leq N, Q \leq 10^6$

$1 \leq i, l, r \leq N$

The array will only contain positive integers between 1 and 10^9 inclusive.

There will be at least one `QUERY` operation.

Input Specification

The first line contains two integers, N and Q .

The next line contains N integers, the elements of the array in order.

The next Q lines contain one of the lines as formatted above.

Output Specification

For each `QUERY`, output the maximum such element.

Sample Input

```
3 3
1 2 3
QUERY 1 3
UPDATE 2 4
QUERY 1 3
```

Sample Output

3

4