Interval Query (Easy Version)

Time Limit: 5 Second
Memory Limit: 256 MB

You are asked to solve a classic problem: given an array $a_1, \ldots, a_n$ of n elements and m intervals $(l_1, r_1), \ldots, (l_m, r_m)$ $(\forall i \in \{1, \ldots, m\}, l_i \leq r_i)$. For each interval (l_i, r_i), find the maximum element of $a_{l_i}, \ldots, a_{r_i}$.

This problem can be trivially solved using some advanced data structures that you will learn later in this course. However, this is not the type of problem we want you to solve in the first week of the semester (or everyone will drop this course!). Therefore, we apply an additional constraint: $\forall i \in \{2, \ldots, m\}, l_{i-1} \leq l_i$ and $r_{i-1} \leq r_i$. Try to solve this problem with the given constraint.

Input

The first line contains two integers n and m $(1 \leq n, m \leq 10^6)$ - the number of elements in the array and the number of intervals.

The second line contains n integers $a_1, \ldots a_n$ $(1 \leq a_i \leq 10^9)$ - the elements in the array.

The last m lines describe the intervals. The i-th line contains two integers l_i and r_i $(1 \leq l_i \leq r_i \leq n, \forall i > 1, l_i \geq l_{i-1}, r_i \geq r_{i-1})$, denoting the boundary of the i-th interval.

Output

For each interval, output a single integer denoting the value of the maximum element in the interval.

Sample Inputs

```
5 3
3 2 1 5 4
1 3
2 3
4 5
```

Sample Outputs

```
3
2
5
```