

# Kth Number



## Problem Statement

You are given an array of  $N$  positive integers,  $A_1, A_2, \dots, A_n$ . You have answer  $Q$  queries. Each query consists of two integers  $L$  and  $K$ .

For each query, you have to consider all the elements of array greater than or equal to  $L$ , in *original order of occurrence* in array  $A$  and then find the  $K^{th}$  element from the selected elements. It is guaranteed that the  $K^{th}$  number will exist.

## Input Format

The first line contains two integers  $N$  and  $Q$ . The next line contains  $N$  space separated integers, representing the array,  $A_1, A_2, \dots, A_n$ .

Each of the next  $Q$  lines contain two space separated integers  $L$  and  $K$ .

## Constraints:

$$1 \leq N \leq 10^5$$

$$1 \leq Q \leq 10^5$$

$$1 \leq A_i \leq 10^5$$

$$1 \leq L \leq 10^5$$

$$1 \leq K \leq 10^5$$

**Note on TL** C/Cpp 1sec, Java 3sec

## Output Format

Output  $Q$  lines, the answer for each query.

## Sample Input

```
10 4
1 9 2 8 3 7 4 6 5 10
4 4
3 2
1 6
8 1
```

## Sample Output

```
4
8
7
9
```

## Explanation

$$L = 4, K = 4$$

Select all the elements greather than or equal to 4, preserving the order of elements.

Elements are  $[9, 8, 7, 4, 6, 5, 10]$ . Thus  $4^{th}$  element is 4.

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$$L = 3, K = 2$$

Select all the elements greather than or equal to 3, preserving the order of elements.

Elements are  $[9, 8, 3, 7, 4, 6, 5, 10]$ . Thus  $2^{nd}$  element is 8.

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$$L = 1, K = 7$$

Select all the elements greather than or equal to 1, preserving the order of elements.

Elements are  $[1, 9, 2, 8, 3, 7, 4, 6, 5, 10]$ . Thus  $6^{th}$  element is 7.

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$$L = 8, K = 1$$

Select all the elements greather than or equal to 4, preserving the order of elements.

Elements are  $[9, 8, 10]$ . Thus  $1^{st}$  element is 9.