I LOVE Kd-TREES

You've been invited to the "I-Love-Kd-trees" annual con, but first, you have to show them that you really know about great data structures, so they give you an easy task!

You are given a list of **N** numbers and **Q** queries, each query consist of three integers: ***k, i*** and ***l*** ;let **d** be the **k-th** smallest element until the index **i** (i.e. if the first i+1 elements were sorted in non-descending way, **d** would be the element at index **k - 1**). Then, the answer to each query is the index of the **l-th** occurrence of **d** in the array. If there's no such index, the answer is **-1.** You have to consider that all indexes are counted starting with **0**.

Input

Input consists of one test case.

The first line contains two integers, **N** ($1 \leq N \leq 10^5$) and **Q** ($1 \leq Q \leq 10^5$).

The next line contains **N** possibly distinct integers $\mathbf{a_i}$ ($-10^9 \leq a_i \leq 10^9$).

Then **Q** lines follow, each of those contains three integers ***k***, ***i*** and ***l***. ($0 < k \leq i < N$, $1 \leq l \leq N$).

Output

For each query (in the same order as the input) output a single line with the answer to that query.

Example

Input:

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

Output:

```
6
-1
3
5
9
9
```

Explanation of the first query:

The elements until index 4 are [2,6,7,1,8] so the 2nd smallest element is 2, and your asked for the index of it's 2nd ocurrency, so the answer is 6.