

Back to School '24 P5 - Snitching

Time limit: 3.0s **Memory limit:** 512M

Despite your best efforts, Mr. Purple has discovered that cheating has occurred in your class. There are N students, numbered from 1 to N , and each student has chosen someone to scapegoat — the i -th student will blame student A_i .

The principal, putting full faith in random sampling, plans to interview only the students numbered within some range $[l, r]$, in increasing order of student number. To expedite the process, the principal will also set a threshold value k . The first student blamed at least k times will be expelled, concluding the investigation.

You want to anticipate various scenarios and determine the outcome for Q different sets of values for l , r , and k . For each scenario, if a student would be expelled, output their number; otherwise, output `-1`.

Constraints

$$1 \leq N, Q \leq 5 \times 10^5$$

$$1 \leq A_i \leq N$$

$$1 \leq l \leq r \leq N$$

$$1 \leq k \leq N$$

Subtask 1 [25%]

$$1 \leq k \leq 50$$

Subtask 2 [75%]

No additional constraints.

Input Specification

The first line of input contains two integers N and Q , the number of students and the number of scenarios respectively.

The second line of input contains N integers A_1, A_2, \dots, A_N , the student that the i -th student blames.

The next Q lines each contain 3 integers l, r, k , the starting number, the ending number, and the threshold value picked by the principal in this scenario.

Output Specification

Output Q lines. The i -th line should contain the answer to the i -th scenario: the number of the student who would be expelled, or `-1` if no such student exists.

Sample Input

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

Sample Output

```
3
-1
1
-1
3
7
```

Explanation for Sample

In the second scenario:

By the end of the principal's investigation, student 7 would be blamed twice, and students 2, 9, and 10, would all be blamed once.

Since no one would be blamed at least 3 times, no one would be expelled.

In the sixth scenario:

The principal would first interview student 5, who would blame student 1.

Next, the principal would interview student 6, who would blame student 7.

After, the principal would interview student 7, who would blame themselves.

At this point, student 7 would be blamed twice, thus the investigation would conclude with student 7 being expelled.