

Nominating Group Leaders



HackerLand University's t teachers choose *study group leaders* according to the following rules:

- Each teacher teaches a class of n students who have unique ID numbers from 0 to $n - 1$. Each student i in the class casts a single vote, v_i , to nominate student v_i to be a group leader.
- Each class has g study groups. Each group consists of students with IDs in the inclusive interval $[l, r]$, and the student who gets *exactly* x votes from the group is nominated. If more than one student receives x votes, the teacher selects the student with the smallest ID.

For example, consider the following class with $g = 2$ groups:

$l = 2, r = 4, x = 2$					
Student ID	0	1	2	3	4
Vote	0	1	0	2	1
Nominee: none (no student received 2 votes)					

$l = 1, r = 3, x = 1$					
Student ID	0	1	2	3	4
Vote	0	1	4	0	3
Nominee: 0 (the smallest ID to receive 1 vote)					

Given the class details for t teachers, print the ID for each study group's nominee on a new line. If no student in some $[l, r]$ interval receives exactly x votes, print -1 instead.

Input Format

The first line contains an integer, t , denoting the number of teachers and classes. The subsequent lines describe each class in the following format:

- The first line contains an integer, n , denoting the number of students in the class.
- The second line contains n space-separated integers describing the respective values of v_0, v_1, \dots, v_{n-1} , where each v_i is the student ID that student i voted for.
- The third line contains an integer, g , denoting the number of groups in the class.
- Each of the g subsequent lines contains three space-separated integers describing the respective values of l , r , and x for a group.

Constraints

- $1 \leq t \leq 5$
- $1 \leq n, g \leq 10^5$
- $0 \leq l \leq r \leq n - 1$
- $0 \leq v_i \leq n - 1$
- $1 \leq x \leq n$
- The sum of n and the sum of g over all test cases won't exceed 3×10^5 .

Scoring

- For 20% of the maximum score, $1 \leq n, g \leq 2 \times 10^4$
- For 100% of the maximum score, $1 \leq n, g \leq 10^5$

Output Format

For each $[l, r]$ group, print the nominee ID (i.e., the student who receives exactly x votes from the group); if more than one such student exists, choose the smallest ID. If no student receives x votes, print -1 instead.

Sample Input 0

```
2
5
0 1 4 0 3
2
0 4 1
2 4 2
5
4 3 0 0 0
2
0 1 1
2 4 3
```

Sample Output 0

```
1
-1
3
0
```

Explanation 0

We want to find the group leader nominees for the groups in $t = 2$ classes:

- 1. The diagram below depicts the votes for the first class' $g = 2$ groups:

$x = 1$

Student ID	0	1	2	3	4
Vote	0	1	4	0	3

Nominee: 1
(the smallest user ID to receive 1 vote)

$x = 2$

Student ID	0	1	2	3	4
Vote	0	1	4	0	3

Nominee: none
(no student received 2 votes)

- 1. Student IDs 1, 3, and 4 receive $x = 1$ vote from students in the inclusive range between $l = 0$ and $r = 4$, so we print the smallest of these user IDs, 1, on a new line.
- 2. No student receives $x = 2$ votes from the students in the inclusive range between $l = 2$ and $r = 4$, so we print -1 on a new line.

- 2. The diagram below depicts the votes for the second class' $g = 2$ groups:

$x = 1$

Student ID	0	1	2	3	4
Vote	4	3	0	0	0

Nominee: 3
(the smallest user ID to receive 1 vote)

$x = 3$

Student ID	0	1	2	3	4
Vote	4	3	0	0	0

Nominee: 0
(the smallest user ID to receive 3 votes)

- 1. Student IDs 3 and 4 receive $x = 1$ vote from students in the inclusive range between $l = 0$ and $r = 1$, so we print the smallest of these user IDs, 3, on a new line.
- 2. Student ID 0 receives $x = 3$ votes from students in the inclusive range between $l = 2$ and $r = 4$, so we print 0 on a new line.