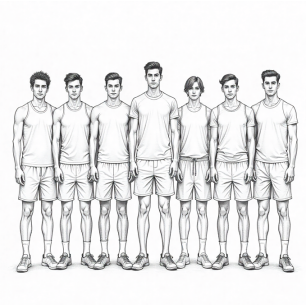
Task Tjelesni



The first semester at the university is coming to an end. Marin decided to attend a PE class in order to collect his 12th attendance and thus pass the course. He was surprised by the number of students waiting in front of the gym.

He counted n students (including himself) and noticed an interesting property: no two students have the same height, and for every integer from 1 to n there is exactly one student of that height.

Before the class started, the students lined up in a row. The heights of the students in the row, observed from left to right, form a permutation p of size n. The professor has some unusual requirements for the order of students in the row, so he decided to issue q commands that must be executed in the given order.

Each command is of the form l_i r_i and means that the students at positions from l_i to r_i (inclusive) need to step out of the row, and then fill the empty positions in the following way: position l_i is filled by the shortest student among those taken out. Position $l_i + 1$ is filled by the tallest of the remaining students. Position $l_i + 2$ is again filled by the shortest of the remaining students, position $l_i + 3$ by the tallest, and so on, alternating between the shortest and the tallest until position r_i is filled.

After executing all the commands, Marin is no longer sure whether he is standing in the correct position or if at some point he moved to the wrong place. However, he remembers the initial permutation p, all q commands in the order they were given, and he has told you his height m. He asks you to determine the position where he should be standing.

Input

The first line contains three natural numbers n, q i m ($1 \leq n, q \leq 10^5, 1 \leq m \leq n$), the numbers from the problem statement.

The second line contains a sequence of n numbers $1 \leq p_i \leq n$, the permutation p.

Each of the next q lines contain two numbers $1 \leq l_i \leq r_i \leq n$, the i-th command.

Output

In the first and only line output one number - the position Marin should occupy.

Scoring

Subtask	Points	Constraints
1	7	$n, q \leq 1000$
2	11	$l_i = 1$, for each $1 \leq i \leq q$
3	17	$m = 1$ or $m = n$
4	24	$n, q \leq 5000$
5	51	No additional constraints.

Sample tests

input

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

output

```
5
```

input

```
6 4 1
5 3 6 2 1 4
2 4
3 5
2 6
5 6
```

output

```
2
```

input

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

output

```
7
```

Explanation of the first sample test: After executing the first command, the heights of the students in the row are: 4 2 3 1 7 5 6. After executing the second command the heights are: 4 2 1 7 3 5 6. In the end, after executing the third command, the row should look like this: 1 7 2 4 3 5 6. Marin should occupy the 5^{th} position from the left.