Little Mirko is a very simple man. Mirko's friend Darko has given him an array of *N* natural integers and asked him *Q* queries about the array that Mirko must answer.

Each query consists of two integers, the positions of the left and right end of an interval in the array. The answer to the query is the number of different values that appear exactly twice in the given interval.

INPUT

The first line of input contains the integers *N* and *Q* ($1 \le N, Q \le 500\ 000$).

The second line of input contains *N* natural integers less than 1 000 000 000, the elements of the array.

Each of the following *Q* lines contains two integers, *L* and *R* ($1 \le L \le R \le N$), from the task.

OUTPUT

The output must consist of *Q* lines, each line containing the answer to a query, respectively.

SCORING

In test cases worth 56 points in total, the numbers *N* and *Q* will not be larger than 5000.

SAMPLE TESTS

input	input	input
5 1	5 2	5 2
1 2 1 1 1	1 1 1 1 1	1 1 2 2 3
1 3	2 4	1 1
	2 3	1 5

output	output	output
1	0	0
	1	2

Clarification of the first test case:
In the interval from the first to the third element, there is only one number (number 1) that appears exactly twice.