

Matchingseq

2023/2024 SEASON – SIXTH ROUND



Aylin and Pavel have a collection of N hats. They are arranged in a sequence and every hat has a certain type – an integer a_i .

In each of Q days they will diversify their choice of hats by limiting the sequence on the left and the right sides. Since they would like to match their hats, their choice narrows down to pairs of hats, where the positions of the left one is on the right to the right hat from the previous pair. The first and the last hats have to be inside the subsequence.

You want to determine the maximum possible count of pairs of hats which follow the restrictions, in order to choose the most appropriate outfit.

Input

The first line of the file **matchingseq.in** contains two integers N and Q – the count of hats and the count of days. The next line consists of N numbers: $a_1, a_2 \dots a_N$ – the types of hats. Each of the next Q lines comprises of the left and right boundaries of the sequence for the day: $l_i r_i$.

Output

In the file **matchingseq.out** print Q numbers, which describe the maximum count of pairs of hats which are inside the interval and for every pair, the first one is to the right of the second hat from the previous pair.

Constraints

$$1 \leq N \leq 2 * 10^5$$

$$1 \leq Q \leq 10^5$$

$$1 \leq a_i \leq N$$

$$1 \leq l_i < r_i \leq N$$

Time limit: 0.5 sec.

Memory limit: 256 MB

Matchingseq

2023/2024 SEASON – SIXTH ROUND



Sample test

Input (matchingseq.in)	Output (matchingseq.out)
10 5	4
1 1 2 3 2 3 4 4 1 1	2
1 10	3
1 5	3
3 10	2
4 10	
1 7	

Sample test explanation

Some optimal sets of pairs are:

First query: | 1 1 2 3 2 3 4 4 1 1 |

Second query: | 1 1 2 3 2 | 3 4 4 1 1

Third query: 1 1 | 2 3 2 3 4 4 1 1 |

Forth query: 1 1 2 | 3 2 3 4 4 1 1 |

Fifth query: | 1 1 2 3 2 3 4 | 4 1 1