ISR II

Time Limit: 1 Second
Memory Limit: 2048 MB

After his last visit to ISR Dining Center, LetianPie found the food was so good that he decided to go to ISR for dinner regularly. However, LetianPie doens't like eating the same kind of food everyday because he will soon get bored. From Illinois App, LetianPie knows that for the following n days, ISR will provide food of type a_i on the i-th day. LetianPie has m plans for the next days, where in the i-th plan, LetianPie will have dinner at ISR on days $l_i, \ldots, r_i$, and go to Green Street for dinner for other days. He wants you to help him calculate the number of different types of food he can eat at ISR for each plan he has so that he can decide which plan is the best for him.

Input

The first line contains two integer n and m ($1 \leq n, m \leq 10^5$), as described in the statement.

The next line contains n integers $a_1, \ldots, a_n$ ($1 \leq a_i \leq 10^6$) - the type of food served by ISR on each day.

The next m lines describe LetianPie's plans. Each line contains two integers l and r ($1 \leq l \leq r \leq n$) - LetianPie will go to ISR for dinner only on days $l, \ldots, r$.

Output

For each plan, output the number of distinct types of food LetianPie can eat at ISR.

Sample Inputs

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

Sample Outputs

```
2
3
3
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