

Competitive Programming and Contests

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Smaller values

You are given an array $A[0..n-1]$ of positive integers smaller than n . Your goal is to solve m given **count** queries. A query **count**(i, j, X) has to report the number of values in $A[i..j]$ which are smaller than or equal to X (notice that both positions i and j are included).

A trivial solution explicitly scan the interval $A[i..j]$ for any query, and thus, runs in $\Theta(n * m)$ time.

The goal here is to find a faster solution. We point out that there exist

1. A $\Theta((n + m)\sqrt{n} \log n)$ time solution. If you find and implement this solution, your grade will be 26;
2. A $\Theta((n + m) \log n)$ time solution. If you find and implement this solution, your grade will be 30.

Input. The first line contains n and m . The next line consists in n integers, separated by a space. Finally, there will be m lines, one for each query. Each of these lines contains i , j and X , separated by a space.

Output. The result of each query in input order.

Example

Input

```
5 3          // n m
4 1 3 4 1    // A
0 1 3        // i j X
0 4 3
1 3 2
```

Output

```
1
3
1
```