Competitive Programming and Contests

14/01/2019

Segments

You are given n segments. A segment $\langle l, r\rangle$ is such that $0 \leq l \leq r \leq n-1$. Then, you are given m queries IsThere. A query IsThere(i, j, k) has to return 1 if there exists a position p, with $0 \leq i \leq p \leq j \leq n-1$, such that *exactly* k segments contains position p, 0 otherwise.

The problem can be either solved online or offline. We point out that there exist

1. A $\Theta((n+m)\sqrt{n})$ 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. Each of the next n lines contains a pair integers $\langle l, r\rangle$, one for each segment. Finally, there will be m lines, one for each query. Each of these lines contains i, j and k, separated by a space.

Output. The result of each query in input order.

Example

Input

```
5 4       // n m
0 4       // segments
1 3
1 2
1 1
0 0
0 4 4   // i j k
0 4 0
1 3 1
1 4 1
```

Output

```
1
0
0
1
```