

# Competitive Programming SS24

Submit until end of contest



**Problem: polypoints** (3.0 second timelimit)

*Note:* This is a problem that is harder to solve than usual. Solve the other problems first before spending too much time on this one.

You are given several rectangles and points. For each point determine the number of rectangles that contain it (inside or on its border).

**Input** Input starts with two integers  $0 \leq n \leq 10^5$  and  $1 \leq m \leq 10^5$ , the number of rectangles and the number of points respectively. Then follow  $n$  lines, each describing one rectangle with its sides parallel to the axis. Each line contains four integers  $x_1, y_1, x_2, y_2$  the coordinates of two opposite corners. Then,  $m$  lines follow, each containing two integers  $x, y$ , the coordinates of a point. All coordinates are in the range  $[0, 10^6]$ .

**Output** For each point in the input, output the number of rectangles it lies inside. Output each number in its own line and in the order the points appear in the input.

## Sample input

```
3 2
0 0 10 10
0 0 6 12
5 5 5 5
5 5
0 11
```

## Sample output

```
3
1
```