Hasso Plattner Institut
IT Systems Engineering | Universität Potsdam

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Sommersemester 2017

Woche 02 – (Adv.) Competitive Programming

Abgabe 01.05.2017 17:00 Uhr, ber das Judge-Interface

Aufgabe 1 (expansion)**.** (100 Points – 1 second timelimit)

As HPI is currently growing rapidly, it is already apparent that additional buildings will be required soon. To avoid having to construct additional buildings every few years, The Management has asked all current and – through methods unknown – future professors to plan when they would like to hold their lectures so that the number of required lecture halls may be accurately determined.

It is now your task, as a faithful student assistant, to determine the minimum number of required lecture halls, so that all lectures may be given at exactly the time planned by the professors. To that end you are given a list with the start and end times of all lectures. The times are given as a positive integer offset from some arbitrary reference time.

To evaluate various possible alternatives, you are given multiple such lists.

Input The first line will contain n ($0 \leq n \leq 400$), the number of lists / test cases. Then, for each test case, there will be one line containing k ($0 \leq k \leq 10000$), the number of scheduled lecture in this list, followed by k lines, each containing two numbers, s and e ($0 \leq s < e < 2^{31}$) describing the start and end time of one scheduled lecture.

Output For each list, print one line with the minimum number of lecture halls required, so that all lectures may be given at the scheduled times.

Points There are four groups of test sets:

- *easy:* For the first group worth 20 Points, you can assume, that $n \leq 100$, $k \leq 500$ and $e \leq 10000$.
- *medium:* For the second group worth 20 Points, you can assume, that $n \leq 200$, $k \leq 1000$ and $e \leq 100000$.

- *hard:* For the third group of test sets worth 40 Points, there are no additional assumtions.
- *edge:* The fourth group of test sets worth 20 Points contains various edge cases.

Sample Input

```
1
3
1100 1230
0915 1045
1000 1200
```

Sample Output

```
2
```