

## WE LIKE UNIX, WE LIKE C, WE WANT MORE 330

As an avid student at the UO, you have discovered the incredible experience of learning about UNIX system calls. To your joy, you have found out that the CIS Department offers two sections of CIS 330 next term covering this material. One is taught by Professor B and the other by Professor C. Each issues a syllabus at the start of the term, and the syllabus gives the expected number of hours you will need to spend each week on programming. Since they each have their own style, the number of hours per week may be different for the two professors.



This term is  $N$  weeks long – the UO is flexible now. Your goal is to maximize your workload. Fortunately, you are allowed to switch from one section to the other. However, whenever you switch sections you are not allowed to work for a week (due to bureaucratic constraints). It does not matter in which section you start, nor in which section you end.

For example, if Professor B's schedule in weeks 1 through  $N=5$  is (12, 3, 20, 6, 19) and Professor C's schedule is (8, 26, 20, 2, 5), you maximize your workload by taking Professor C's section for weeks 1, 2, and 3, then switching to take Professor B's section in week 5. This results in a schedule of a total of 73 hours of programming work.

The input will start with an integer  $K$ , being the number of cases (scenarios for a term). This will be followed by  $K$  descriptions of a term. A term description starts with a line containing the number of weeks  $N$ . This is followed by  $N$  lines of the form  $B C$ , where on the  $i^{\text{th}}$  line  $B$  is an integer giving the expected number of hours of work in Professor B's section in week  $i$ , and  $C$  is the same for Professor C.

### Sample Input

```
2
5
12 8
3 26
20 20
6 2
19 5
7
5 14
6 7
19 21
4 9
21 13
16 5
19 9
```

### Sample Output

```
Case 1: 73
Case 2: 98
```

### Comments:

You can assume that  $K$ ,  $N \geq 1$ , and  $B, C \geq 0$  are all integers.