

Employees Working Hours

Given the list of check-in and check-out time of employees. Output the number of working hours of them.

Input

- The first line contains a number of check-in, check-out records ($1 \leq N \leq 10^5$).
- Each line in the next N lines contains two integers representing a record. First integer is the id of employee. The second integer is the time of check-in/check-out

Output

The list of employees in ascending order of id. For each employee, output the id and the number of working hours.

Sample

Input	Output
6	1 6
1 4	2 4
2 4	
1 5	
1 6	
2 8	
1 11	