1100. Final Standings

Time limit: 1.0 second
Memory limit: 16 MB

Old contest software uses bubble sort for generating final standings. But now, there are too many teams and that software works too slow. You are asked to write a program, which generates exactly the same final standings as old software, but fast.

Input

The first line of input contains only integer $1 < N \le 150000$ — number of teams. Each of the next N lines contains two integers $1 \le ID \le 10^7$ and $0 \le M \le 100$. ID — unique number of team, M — number of solved problems.

Output

Output should contain N lines with two integers ID and M on each. Lines should be sorted by M in descending order as produced by bubble sort (see below).

Sample

input	output
8 1 2 16 3 11 2 20 3 3 5 26 4 7 1 22 4	3 5 26 4 22 4 16 3 20 3 1 2 11 2 7 1

Notes

Bubble sort works following way:

```
while (exists A[i] and A[i+1] such as A[i] < A[i+1]) do
   Swap(A[i], A[i+1]);
```

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