Point Sorting

Time: 1 sec / Memory: 256 MB

Problem Statement

Given n points with coordinates (x_i, y_i), sort them based on the following criteria:

1. Points with larger x-coordinate should come first.
2. If two points have the same x-coordinate, the one with the larger y-coordinate should come first.

Output the coordinates of points in the sorted order.

Input

The first line contains an integer n, where $1 \leq n \leq 10^5$.
The following n lines each contain two integers x_i and y_i representing the coordinates of a point. Each integer x_i and y_i satisfies $-10^9 \leq x_i, y_i \leq 10^9$.

Output

Output the n coordinates in the sorted order, each point on a new line in the format `x y`.

Example

Input:

```
5
1 3
2 2
1 2
3 3
2 3
```

Output:

3 3
2 3
2 2
1 3
1 2