

Problem R. 2D-SORT

Time limit	100 ms
Mem limit	1572864 kB
Code length Limit	50000 B
OS	Linux

Given n points in a two dimensional space, sort all the points in ascending order.

$(x_1, y_1) > (x_2, y_2)$ if and only if $(x_1 > x_2)$ or $(x_1 == x_2 \text{ and } y_1 < y_2)$

Input

The first line consists of an integer t , the number of test cases. Then for each test case the first line consists of an integer n , the number of points. Then the next n lines contains two integers x_i, y_i which represents the point.

Output

For each test case print the sorted order of the points.

Constraints

$$1 \leq t \leq 10$$

$$1 \leq n \leq 100000$$

$$-10^9 \leq \text{coordinates} \leq 10^9$$

NOTE: Strict time limit. Prefer scanf/printf/BufferedReader instead of cin/cout/Scanner.

Example

Input	Output
1 5 3 4 -1 2 5 -3 3 3 -1 -2	-1 2 -1 -2 3 4 3 3 5 -3