

## Problem C. Classification

NCSA (National Strength and Conditioning Association) is holding an event in order to group athletes by their functional fitness. The measurement characteristics of an athlete  $a$  are mental awareness,  $m_a$  and physical readiness,  $p_a$ . During the competition, athlete  $a$  overcomes athlete  $b$ , if  $m_a > m_b$  and  $p_a > p_b$ .

An athlete is called fit if no one can overcome him/her. Obviously, there can be a set of athletes consisting of more than only one fit athlete. We define levels of fitness as follows:

- The first fitness level  $L_1$  is a set of all fit athletes  $Q$ . For each  $i > 1$  the  $i$ -th fitness level is a set of all fit athletes  $Q - \bigcup_{j=1}^{i-1} L_j$ .

It is guaranteed that there are no distinct athletes whose mental awareness or physical readiness are the same.

Find all fitness levels for the set  $Q$ .

### Input

The first line of the input file contains one integer  $n$  — the number of athletes.

$$1 \leq n \leq 500\,000$$

The following  $n$  lines describe the mental awareness and physical readiness of the athletes. Each line contains two integers  $m_i$  and  $p_i$ .

$$0 \leq m_i, p_i \leq 10^9$$

### Output

Print the number of fitness levels of  $Q$ . For each level print the index of every athletes in the that level in a new line. Print each line in ascending order by  $p$  values.

### Examples

test	answer
2	2
2 1	2
3 2	1
4	2
3 9	2 4 1
8 2	3
1 6	
7 8	