Problem I
JD by Design

ACM-ICPC
Thailand Central
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Time Limit: 10 seconds.

Jane's visionary concept, dubbed *JD*, recently earned her a grand prize at the international conference of pagodas. A *JD* is a stack of corner-aligned, equal-height rectangular blocks, arranged such that every block sits atop a block at least as large as itself or on the ground.

Jane wanted to build the tallest JD ever, so she got a friend to produce these blocks for her. But her friend was rather crazy and devious. He gave her **N** (**1 <= N <= 100,000**) blocks of varying dimensions. Jane came to you for help: your task is to figure out how tall Jane can build a JD out of these blocks.

These blocks **cannot be turned**; that is, a block **A** with dimensions $\mathbf{x_A}$ by $\mathbf{y_A}$ can be placed on top of another block **B** with dimensions $\mathbf{x_B}$ by $\mathbf{y_B}$ only if $\mathbf{x_A} <= \mathbf{x_B}$ and $\mathbf{y_A} <= \mathbf{y_B}$. The sizes of these blocks fit in a signed 32-bit integer.

Input

There are at most 20 test cases.

Each test case begins with a number **N**, the number of blocks. Each of the **N** subsequent lines contains a pair of numbers **x** and **y**, representing the dimensions of this particular block.

The input concludes with the number **0** followed by a new line.

Output

For each test case, output the height of the tallest JD Jane can produce from the given set of blocks, followed by a new line.

(An example is in the next page.)

Example

Input	Output
2 1 3 2 4 3 1 3 2 2 3 1 3 1 1 1 1 1 1 4 1 2 7 6 3 9 5 4 0	2 1 3 3

Notes for Java programmers

The input for this problem is very large. Using `Scanner` to read input might not be efficient enough. We suggest you to use `BufferedReader` which is much faster.