D. Arkady and Rectangles

time limit per test: 4 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Arkady has got an infinite plane painted in color 0. Then he draws n rectangles filled with paint with sides parallel to the Cartesian coordinate axes, one after another. The color of the i-th rectangle is i (rectangles are enumerated from 1 to n in the order he draws them). It is possible that new rectangles cover some of the previous ones completely or partially.

Count the number of different colors on the plane after Arkady draws all the rectangles.

Input

The first line contains a single integer n ($1 \le n \le 100000$) — the number of rectangles.

The i-th of the next n lines contains 4 integers x_1, y_1, x_2 and y_2 ($-10^9 \le x_1 < x_2 \le 10^9$, $-10^9 \le y_1 < y_2 \le 10^9$) — the coordinates of corners of the i-th rectangle.

Output

In the single line print the number of different colors in the plane, including color 0.

Examples

input
5 -1 -1 1 1 -4 0 0 4 0 0 4 4 -4 -4 0 0 0 -4 4 0

output
5

input
4 0 0 4 4 -4 -4 0 0 0 -4 4 0 -2 -4 2 4

output
5

Note

That's how the plane looks in the first sample
That's how the plane looks in the second sample

0 = white, 1 = cyan, 2 = blue, 3 = purple, 4 = yellow, 5 = red.