Problem A
Circuits
Time Limit: 1 Second

There are a number of electronic circuits, such as CPU's, ROM's, RAM's, to be printed in a single chip consisting of multiple layers. Due to some design restriction, there can be only two electrical wires that are horizontal segments. Your job is to find two horizontal wires that together connect as many circuits as possible so that the electric signals go through the circuits.

This problem can be stated formally as follows. There are n axis-aligned rectangles in the plane. Each of the rectangles represents a circuit to be printed in the chip. The rectangles may overlap each other. You are supposed to find two horizontal lines such that the total number of rectangles intersected by the two lines is maximized. We also say that a rectangle is intersected by a horizontal line if the line contains the top side or the bottom side of the rectangle. If a rectangle is intersected by both the lines, it is counted only once for the total number.

For example, let's consider 5 rectangles shown in Figure A.1. Figure A.1(c) shows two horizontal lines (red dashed lines) that intersect all 5 rectangles while the two horizontal lines (red dashed lines) in Figure A.1(b) intersect 4 rectangles.

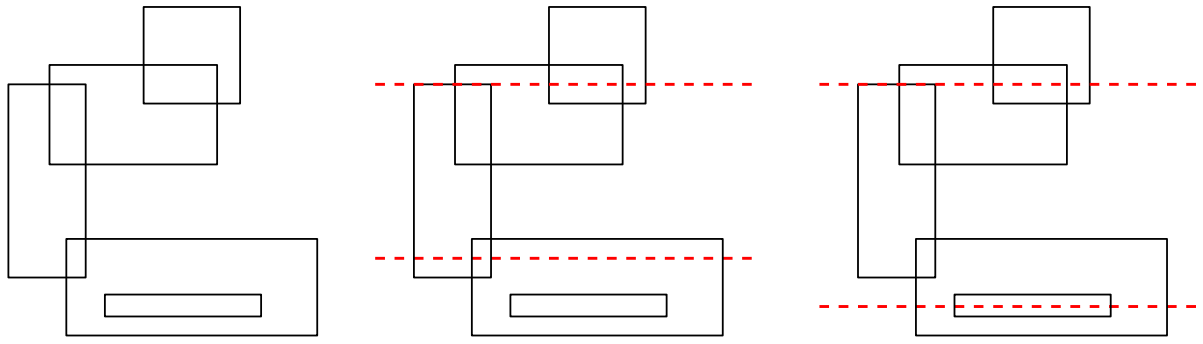


Figure A.1: (a) 5 axis-aligned rectangles. (b) Two horizontal lines that intersect 4 rectangles. (c) Two horizontal lines that intersect 5 rectangles.

Given a set of axis-aligned rectangles, write a program to find two horizontal lines such that the total number of rectangles intersected by the two lines is maximized.

Input
Your program is to read from standard input. The first line contains a positive integer n representing the number of axis-aligned rectangles in the plane, where $3 \leq n \leq 100{,}000$. It is followed by n lines, each contains four integers u_x, u_y, v_x, and v_y (with $u_x < v_x$ and $u_y > v_y$) representing the (x, y)-coordinates, (u_x, u_y), of the top-left corner and the (x, y)-coordinates, (v_x, v_y), of the bottom-right corner of an axis-aligned rectangle, where $-10{,}000{,}000 \leq u_x, u_y, v_x, v_y \leq 10{,}000{,}000$.

Output

Your program is to write to standard output. Print exactly one line. The line should contain the maximum total number of rectangles that can be intersected by two horizontal lines.

The following shows sample input and output for two test cases.

Sample Input 1	Output for the Sample Input 1
5 0 13 4 4 2 14 11 9 7 17 12 12 3 5 16 0 5 2 13 1	5

Sample Input 2	Output for the Sample Input 2
5 0 4 4 0 1 3 3 1 5 8 9 4 0 12 4 8 1 11 3 9	4