# Babylonian Boxes
## Problem ID: stackingboxes

The people of 2D Babylon have the brilliant idea to build a tower to reach heaven. At their disposal they have rectangles with varying widths and heights. In order to construct the tower, they can stack these rectangles. The only problem is they can stack a rectangle on another only if it's base is lesser than or equal to the rectangle directly below it. Due to limits on construction infrastructure, the people of Babylon cannot change the relative order of the boxes they see. It must be taken in the sequence they see it. For example, a rectangle that appears earlier in the input cannot be placed above a rectangle that appears later in the sequence even if it obeys the base rule. One thing they can do however, is rotate the rectangle to use the height or width as a base as long as the base stacking rule isn't violated. Given a set of rectangles help the people of 2D Babylon build the tallest tower they can. There's no way this is a bad idea, right?

## Input

The input consists of one test case. The first line contains an integer $n$ $(1 \leq n \leq 1000)$, the number of rectangles. The following $n$ lines contains two space separated integers, $a$ and $b$ $(1 \leq a, b \leq 200)$, the dimensions of the $ith$ rectangle.

## Output

Output a single integer, the tallest tower that can be built.

| Sample Input 1 | Sample Output 1 |
|---|---|
| 4<br>1 2<br>2 3<br>3 4<br>4 5 | 8 |

| Sample Input 2 | Sample Output 2 |
|---|---|
| 2<br>1 12<br>11 22 | 23 |