

RECTANGLES (Latvia)

Let us consider the information about the "*joint rectangle*", i.e. the rectangle which is built from all the rectangles made until this moment.

At any moment it is possible to say whether our point is inside this "*joint rectangle*" or not. If the point was outside after the step $(i-1)$ ($i-1$ rectangles have been made), but it is inside after the i -th step (i rectangles have been made), then this point lies inside the i -th "*small rectangle*", and i is the correct answer.

The relative placement of vertices remains the same (for example, one can always say that the second vertex has a greater y co-ordinate value than the first) and thus the function "*In_rectangle*" becomes very simple.

One technical feature must be pointed out. Despite the fact that the values of the point co-ordinates cannot be greater than 10^9 , the co-ordinates of the "*joint rectangle*" vertices can exceed these values, and you must consider this fact about this using the appropriate data type.