Dice Game

Bibi would like to play a game, in this game Bibi decides a number X from 1 to a billion (1,000,000,000) inclusive. Then the other player throws a dice, if the result is equal or higher than X, they win, otherwise they lose. Now, Jojo spectated the whole game but Jojo did not know what number X did Bibi decided to use. However, Jojo knows that Bibi is a lazy person so she never change her number X in one series of game. Jojo is curious, what is the lowest number and highest number could Bibi have chosen?

Format Input
The first line of input consists of an integer N, the number of games in the series.
The next N lines consists of two integer a_i and b_i, the dice roll and the result of the roll. If the result is 1, the other player win, if the result is 0, they lose.

Format Output
Print the lowest number and highest number Bibi could have chosen separated by a space.

Constraints
1 <= N <= 100,000
1 <= a_i <= 1,000,000,000
0 <= b_i <= 1

Sample Input	Sample Output
5 30 1 53 1 2 0 21 1 8 0	9 21

Explanation
Notice that the X Bibi can possibly choose cannot be lower than 9, for example if X was 8, then the last dice roll will not be valid, because it is equal or higher than X yet it counts as a lose. Also the X Bibi choose cannot be higher than 21, for example if X was 22, then the fourth dice will not be valid, because it is lower than X yet it counts as win.