Post office

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

There are n villages placed on a straight line. The i'th village is placed on coordinate x_i, and a_i people are living in that village. You want to build a post office for all these villages. After much consideration, the village will be placed so that the sum of the distance between every people and the post office will be the minimum. (Note that the distance to each people is measured, not the distance to each villages.) Write a program that finds where to build the post office.

Input

The first line contains n. ($1 \leq n \leq 10^5$) The next n lines contain two integers each, x_i and a_i. ($|x_i| \leq 10^9, 0 \leq a_i \leq 10^9$)

It is guaranteed that all x_i s are distinct and at least one of the a_i s is positive.

Output

Print the coordinate of the post office in the first line. If there are many possibilities, then print the smallest possible coordinate.

Example

standard input	standard output
3 1 3 2 5 3 3	2