Problem B. Big City Boy

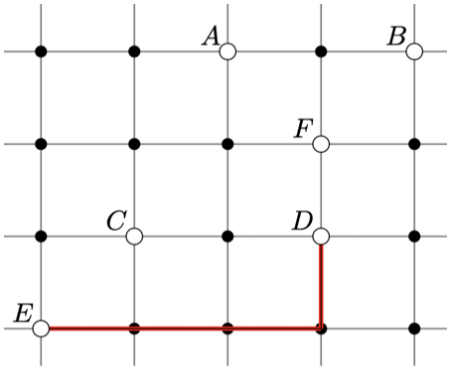
Input:	standard input
Output:	standard output
Time limit:	1 second
Memory limit:	256 megabytes

According to the 2019 census, Ho Chi Minh City has a population of over 8.9 million within the city proper and over 21 million within the metropolitan area. Located in southeastern Vietnam, the city surrounds the Saigon River and covers about 2,061 square kilometers (796 square miles). Ho Chi Minh City is the economic and financial center of Vietnam, and plays an important role in the country's culture and scientific developments. Therefore, Ho Chi Minh is now considered as one of the biggest cities in the world.

Phidang is a Big City boy. He lives in Ho Chi Minh city from 1994, and he inherited N houses from his wealthy family. All of his houses are placed at the intersections of the roads. You can imagine that the city map is a grid, and the houses are located at the integer coordinates of the grid.

Phidang is very busy with his work, and he only wants to stay in one house. Thus, he decided to lease his $N - 1$ houses. However, the problem is that Phidang does not know which house to choose for staying. For the ease of managing his leasing houses, he wants to stay in the house that minimizes the average distance to the $N - 1$ houses. The distance between any two houses is considered as the number of horizontal and vertical lines on the grid map.

For instance, in the following map, Phidang houses are labeled from A to F. The distance between the houses E and D is 4, and the average distance from house E to other houses is $\frac{23}{5}$.



Input

The input consists of the following lines:

- On the first line: the total number N of houses, an integer;
- On the next N lines: X_i and Y_i, the integer coordinates of the ith house, separated by a space.

Limits

- $1 \leq N \leq 1{,}000$
- $0 \leq X_i, Y_i \leq 1{,}000{,}000$ for all points.

No two houses are at the same coordinates.

Output

The coordinates of a house that minimizes the distance to the other houses. In case of equality, that house must be the one with the smallest X coordinate and, in case there is still equality, with the smallest Y coordinate.

Example

standard input	standard output
6 2 3 4 3 1 1 3 1 0 0 3 2	3 1