

Problem A. Coordinate

Time limit 1000 ms

Memory limit 256MB

Problem Description

You are given N points on a 2D grid. From any point (x, y) , you may move in one step to any of the four diagonal neighbors:

- $(x - 1, y - 1)$
- $(x - 1, y + 1)$
- $(x + 1, y - 1)$
- $(x + 1, y + 1)$

For two points $(X_1, Y_1), (X_2, Y_2)$, define their distance $D((X_1, Y_1), (X_2, Y_2))$ as the minimum number of such diagonal steps required to move from one to the other.

If it is impossible to reach the other point using only diagonal moves, then their distance is defined to be 0.

Your task is to compute the sum of distances over all unordered pairs of distinct points:

$$\sum_{1 \leq i < j \leq N} D((X_i, Y_i), (X_j, Y_j))$$

Input format

The first line contains an integer $N (1 \leq N \leq 2 \times 10^5)$ - the number of points.

Each of the next N lines contains two integers $X_i, Y_i (0 \leq X_i, Y_i \leq 10^6)$ - the coordinates of i -th point.

Output format

Output a single integer - the total sum of distances over all unordered pairs.

Subtask score

Subtask	Score	Additional Constraints
0	0	Sample testcases
1	7	$1 \leq N \leq 100, 0 \leq X_i, Y_i \leq 100$
2	31	$N \leq 5000$, and ensure that every point can reach any other point.
3	62	No additional constraints

Sample

Sample Input 1

```
3
0 0
2 2
0 4
```

Sample Output 1

```
8
```

Sample Input 2

```
5
1 1
5 3
4 0
10 10
3 8
```

Sample Output 2

```
36
```