Problem I. Independent Rectangles

Input file:	*standard input*
Output file:	*standard output*
Time limit:	3 seconds
Memory limit:	1024 mebibytes

There are N rectangles with sides parallel to the axes on the plane. Please note that the rectangles might intersect.

Find the number of ways to choose two rectangles in a way that the following two conditions must be fulfilled:

- The two rectangles must have non-zero area of intersection.
- There should be no other rectangle with non-zero area of intersection with any of the two rectangles.

Input

The first line contains a single integers N ($2 \le N \le 10^5$) — the number of rectangles. The following N lines describe rectangles, one rectangle per line. The description consists of four integers x_1 y_1 x_2 y_2 ($0 \le x_1 < x_2 \le 10^6$, $0 \le y_1 < y_2 \le 10^6$) — the coordinates of lower-left and upper-right corners of the rectangle.

Output

Print a single integer — the number of ways to choose two rectangles.

Example

standard input	standard output
3 0 0 3 3 2 2 4 4 5 8 8 12	1