Storming X

Assignment 2
Computer Programming
Due date: 10th October, 2019

Description: Due to recent events, Security of X plans to build a secret facility. You are in charge of this mission.Your subordinates propose a plan to You. A Plan consists of a polygon, with only horizontal and vertical edges.The most important thing about this facility is its secrecy, secrecy of a polygon is calculated as the total perimeter of the polygon which is invisible from all 4 directions (left,right,top,bottm). Your job is , given a plan determine its secrecy value.

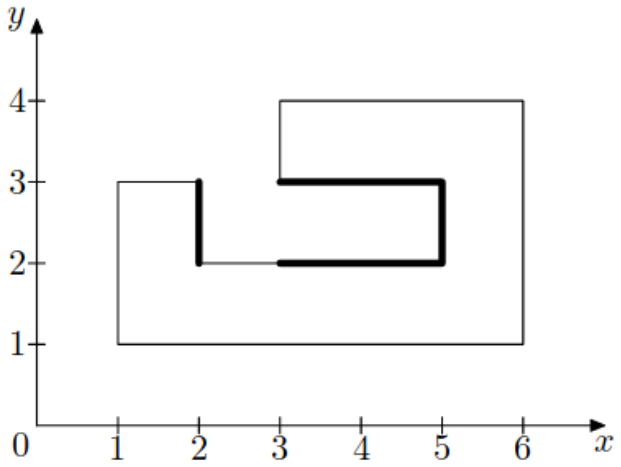

Figure 1: Sample Test

Input
A Plan is specified as a polygon. The first line contains an integer N - number of vertices of the polygon The next N lines contain two integers X_i,Y_i, the coordinates of the i-th vertex. Vertices are listed in consecutive order.
All vertices are distinct. All edges of polygon are guaranteed to be either vertical ($X_i = X_{i+1}$) or horizontal ($Y_i = Y_{i+1}$), also $X_1 = X_n$ or $Y_1 = Yn$.
Output
Print a single integer - secrecy value of the proposed plan
Constraints
$1 \leq N \leq 10^5$
$|X_i|, |Y_i| \leq 10^6$
Sample Test Case

Input	Output
10 1 1 6 1 6 4 3 4 3 3 5 3 5 2 2 2 2 3 1 3	6

Explanation
Bold lines in above figure indicate the parts of polygon's perimeter which are not visible from all of the four directions.