

## Problem I. Interval Problem

Input file:            standard input  
Output file:           standard output  
Time limit:           2 seconds  
Memory limit:        1024 megabytes

You are given  $n$  intervals  $[l_i, r_i]$ . If two intervals intersect, add an undirected, unweighted edge between them.

Let  $d(i, j)$  be the length of the shortest path between the  $i$ -th interval and the  $j$ -th interval. If there is no path from  $i$  to  $j$ ,  $d(i, j) = 0$ .

For  $i = 1, 2, \dots, n$ , output  $\sum_{j=1}^n d(i, j)$ .

### Input

In the first line,  $n$  ( $1 \leq n \leq 2 \times 10^5$ ).

In the following  $n$  lines,  $l_i, r_i$  ( $1 \leq l_i < r_i \leq 2n$ ). It's guaranteed that the endpoints of intervals are distinct.

### Output

$n$  lines, the answer of  $i = 1, 2, \dots, n$ .

### Example

standard input	standard output
5	7
2 3	5
6 7	4
1 9	5
5 10	5
4 8	