D. Nested Segments

time limit per test: 2 seconds
memory limit per test: 256 megabytes

You are given n segments on a line. There are no ends of some segments that coincide. For each segment find the number of segments it contains.

Input

The first line contains a single integer n ($1 \le n \le 2 \cdot 10^5$) — the number of segments on a line.

Each of the next n lines contains two integers l_i and r_i ($-10^9 \le l_i < r_i \le 10^9$) — the coordinates of the left and the right ends of the i-th segment. It is guaranteed that there are no ends of some segments that coincide.

Output

Print n lines. The j-th of them should contain the only integer a_j — the number of segments contained in the j-th segment.

Examples

input
4 1 8 2 3 4 7 5 6
output
3 0 1 0

input
3 3 4 1 5 2 6
output
0 1 1