Given n segments on a number line and m points on the same line. For each of the given points, determine how many segments it belongs to. A point x is considered to belong to a segment with ends a and b if the double inequality $\min(a, b) \leq x \leq \max(a, b)$ is satisfied.

The first line contains two integers n and m – the number of segments and the number of points ($1 \leq n, m \leq 10^5$). The next n lines contain two integers a_i and b_i are the coordinates of the ends of the corresponding segment. The last line contains m integers – the coordinates of the points. All numbers in the input file do not exceed modulo 10^9.

Print m numbers – for each point, print the number of segments that contain it.

Sample input:
2 2
0 5
7 10
1 6

Sample output:
1 0