Manhattan skyline problem

Suppose that you are given the exact locations and shapes of several rectangular buildings in a city, and you wish to draw the skyline (in two dimensions) of these buildings, eliminating hidden lines. Assume that the bottoms of all the buildings lie on a fixed line. Building B_i is represented by a triple (L_i, H_i, R_i), where L_i denotes the left x-coordinate, R_i denote the right x-coordinate of the building, and H_i denotes the building's height. A skyline is a list of x coordinates and the heights connecting them arranged in order from left to right. For example, the buildings in the figure 1 below correspond to the following input (the numbers in boldface type are the heights):

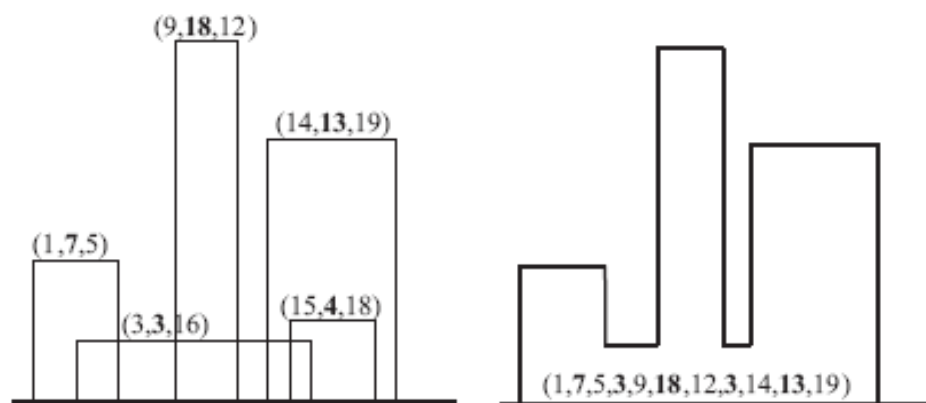(1, **7**, 5), (9, **18**, 12), (3, **3**, 16), (15, **4**, 18), (14, **13**, 19).

Figure 1

The skyline (in bold) is represented as follows (again, the numbers in boldface type are the heights):

(1, **7**, 5, **3**, 9, **18**, 12, **3**, 14, **13**, 19).

(a) Given a skyline of n buildings and another skyline of m buildings, show how to compute the combined skyline for the $m + n$ buildings in O($m + n$) steps.

(b) Give a divide and conquer algorithm to compute the skyline of a given set of n buildings. Your algorithm should run in $O(n \log n)$ steps.

(c) Write a program to implement your algorithms.