

Due in class: Nov 14.

- (1) Given the exact locations and shapes of several rectangular buildings in a city, draw the skyline of these buildings after eliminating hidden lines. You may assume that all the buildings are resting on a straight line. Building  $i$  is represented by a triple  $(L_i, H_i, R_i)$  where  $L_i$  and  $R_i$  are the left and right  $x$  coordinates of the building and  $H_i$  denotes the height of the building. A skyline is a list of coordinates and the heights connecting them are arranged in order from left to right. Heights are indicated in **boldface**.  $(1, \mathbf{11}, 5)$ ,  $(2, \mathbf{6}, 7)$  and  $(3, \mathbf{13}, 9)$  could denote a possible input. The output is  $(1, \mathbf{11}, 3, \mathbf{13}, 9)$ . Design an  $O(n \log n)$  algorithm.
- (2) Problem 8.2-4 (page 170).
- (3) Problem 9.3-8 (page 193).
- (4) Problem 9.1-1 (page 185).