University of Washington

Department of Computer Science and Engineering

CSE 373

Problem Set 3

Due Fri., Oct. 23, 12:30pm

This problem set requires no programming **turn in typed and documented psuedo-code only** (unless you are doing the extra credit problem!). If you do write actual code (say, to test your answer), you can turn that in instead of psuedo code.

Reading: Read Ch. 4.

1. (1 point) What data structure, in addition to the tree, would you use in a routine that solved exercise 4.35? Note: you need only give a one word answer here.
2. (2 points) Exercise 4.16. Neatly draw the tree after each insertion.
3. (5 points) Exercise 4.22. Write only one function (for the right-left rotation in Figure 4.33) , and hand simulate it on the double rotation, shown at the top of Section 4.4.2. Turn in your **typed** simulation and your pseudo code.
4. (12 points) Exercise 4.28, Parts a, b, and c. Hint: Your functions should be recursive and very simple.
5. (10 points, **Extra Credit**) Exercise 4.41.

   Please turn in your code, and show it running on the pair of trees in Fig. 4.63 and on the pair of tree in Figures 4.59 and 4.61. Also turn in an analysis of the running time of your algorithm.