University of Washington

Department of Computer Science and Engineering

CSE 373

Problem Set 1

Due Fri., Oct 9, 11:30pm
if possible, please type your answers.

Reading: read ch. 1, 2.

1. (1 point) Exercise 2.1. Hint: Remember the rules for manipulating exponents which are inside the log expression.

2. (3 points) Exercise 2.2, Parts A, C, D. If a statement is false, please give a concrete counter example.

3. (6 points) Exercise 2.6.

4. (2 points) In class, we covered recursive procedure for computing the Fibonacci sequence. Please turn in pseudo-code showing an iterative solution to the problems that requires a number of addition steps that grows linearly in n, the input to the Fibonacci procedure.

5. (4 points) Is the FIND supported by a linked list? If so, what is its complexity as a function of the length of the list? What is the advantage of an arrays over a linked list as the data structure for implementing a binary search?

6. (4 points) Consider two people: Larry, the loyal friend who very rarely loses friends and very rarely makes new friends but calls his friends frequently, and Sam, the socialite who is constantly making new friends, calling his new friends a few times, but then forgetting about them and moving on to new friends. Consider two approaches for maintaining directories. One is binary search (as described in the book), and the other one is sequential search (simply searching through the phone directory one by one). Which strategy would you recommend for Larry and for Sam? Please explain why.