Written Homework #4
CS 163 Data Structures

Submit your assignment to the D2L Dropbox (sign on via d2l.pdx.edu)

For each of these questions, write one paragraph

1. **Write the algorithm for each of the following**
   a. **Determine if a Tree is FULL**
   b. **Determine if a Tree is a Complete Tree**

   An algorithm should be step by step and detailed enough that someone could apply code to solve the actual problem. Use complete sentences. *Use outline form.*

2. **Use gdb.** For this assignment, as part of your debugging process use gdb on unix. Write a program through ssh/putty/terminal, compile using g++ on the command line (g++ -g prog1.cpp member_functions.cpp), and then use gdb to debug (gdb ./a.out). Write a paragraph about how you used it, what it helped you solve problems, and what kinds of features you wish it had. *Hint: gdb is particularly useful for finding seg faults!*

3. **Deleting from a BST.** List all of the cases for removing an item from a BST. Discuss where recursion is used versus iteration.

4. **Using Recursion with Classes.** Examine the lab code for Binary Search Trees. Discuss what "wrapper" functions are, where they are placed, and how they are used when working with classes.