

## CSC 330 Assignment 5

Note: For this assignment, you **MUST** use the existing Chapter 18 “BinaryNode.java” and “BinaryTree.java” files provided by Weiss at <http://users.cis.fiu.edu/~weiss/dsj4/code/>. You may choose to add new methods, or extend his classes.

### Chapter 18:

Q1 (Programming, 50 points):

Textbook Page 683, In Practice, 18.9 #a, #b, #c

Please provide **two** different sets of test inputs (two different trees of at least 32 nodes each. Yes, that is one more than 31.) for part a, b and c.

Estimated time: 3 hours.

Q2 (Programming, 50 points):

Textbook Page 683, In Practice, 18.10 #a, #b, #c

Please provide **two** different sets of test inputs (two different trees of at least 32 nodes each) for part a, b, and c.

Estimated time: 3 hours.

**Bonus Question:** extra credit will be awarded (20 points)

Q3 (Programming, extra points):

Textbook Page 684, In Practice, 18.10 #d, #e

Please provide **two** different sets of test inputs (two different trees of at least 32 nodes each) for part d and e.

Estimated time: 2 hours.

### Submission instructions:

Please submit a paper copy and an electronic copy.

#### Paper copy:

- Please submit the paper copy at the beginning of the class.
- Provide (create) **test input data** to all programming questions, and capture the related outputs as screen captures (or output files).
- Print the program source code files, test input data and **the output screen captures (or output files)**. If no output screen capture (or output file) is submitted, it would be assumed that the related program does not compile. If the print-out is not readable, **no mark will be awarded**.
- Identify each assignment question by writing the question number at the top of each page.
- Add the following statement to the first page of your submission: “I have abided by the UNCG Academic Integrity Policy on this assignment”. Please write your full name and sign next to the statement. If the statement or the signature is not found, **75% of the possible points will be deducted**.

#### Electronic copy:

- Please submit a **lastname\_firstname\_assignment05.zip** (or lastname\_firstname\_assignment01.rar) file through the Blackboard Digital Dropbox. This zip (or rar) file should contain all submission files.

- Put the answers of all written questions in a **lastname\_firstname\_assignment05.doc** file.
- For programming questions, you only need to submit the \*.java files.
- Name each \*.java file (and related java class) according to the question number (e.g. Q1\_\*.java).

**Grading guidelines (programming questions):**

Your programs will be judged on several criteria, which are shown below.

- Correctness (50%): Does the program compile correctly? Does the program do what it's supposed to do?
- Design (20%): Are operations broken down into classes and methods in a reasonable way?
- Style (10%): Is the program indented properly? Do variables have meaningful names?
- Robustness (10%): Does the program handle erroneous or unexpected input gracefully?
- Documentation (10%): Do all program files begin with a comment that identifies the author, the contents, and the compiler used for that particular file? Are all the classes, methods and data fields clearly documented? Are unclear parts of code documented?

A program that does not compile will get at most **50% of the possible points**.