	Computer Science Department/College of Engineering and Computer Science **CSc 20: Programming Concepts and Methodology II** **Lab 6 – Linear Linked List**

Objective:

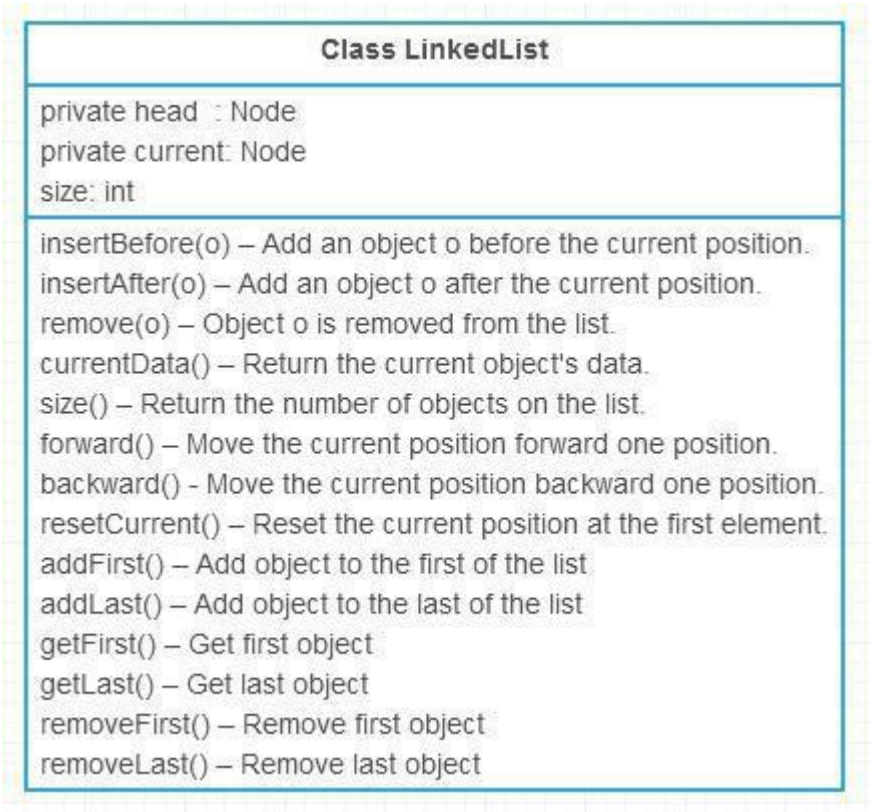
This lab will give you a practice with writing a linear linked list. To this work, you are building a list of any object. However, for testing, your list data element would be **CsusStudent** (from your previous lab). You will use your debugger to examine your list.

Preparation: (at home)

Read course book's Building Java Programs book, 4th edition, Chapter 16 (sections 1,2, and 3).

Lab work (in school laboratory):

This lab's objective is to develop methods (see attached diagram) for a linear linked list. The algorithms for these methods will be discussed in your lecture. You are given the following UML class diagram:



Activities:

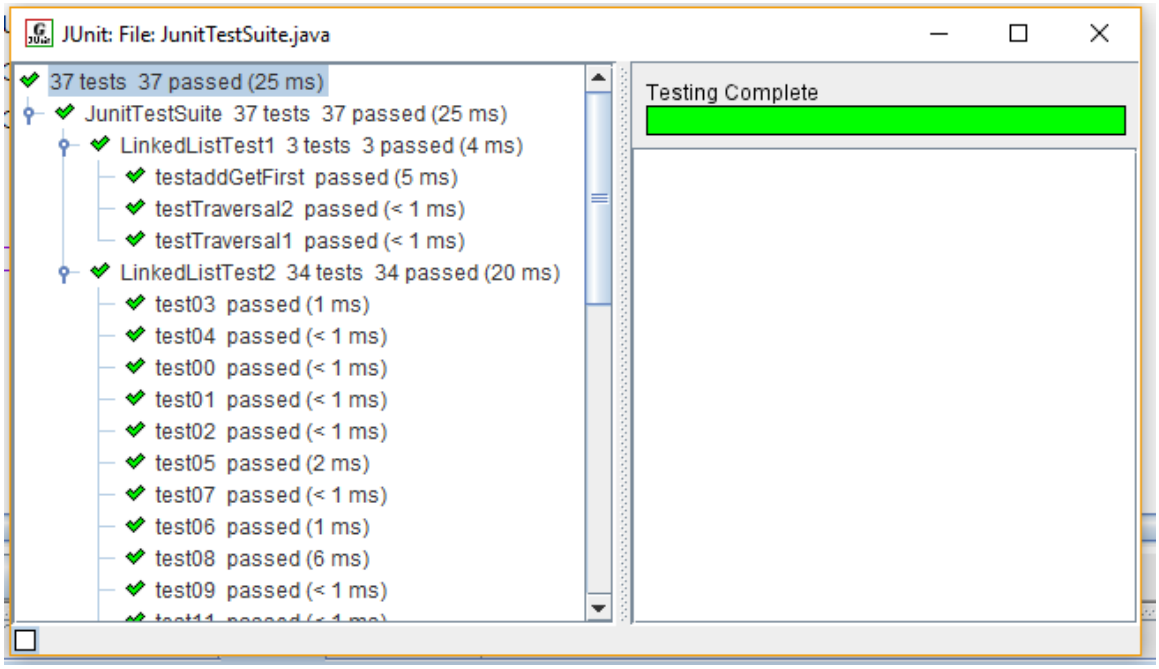
1. Copy instructor's class (LinkedList.java) from Canvas into your working directory. Please also ensure that your previous lab's **CsusStudent.java** is the same directory.

2. Provide the pre-condition(s) and post-condition(s) as comment block to each method.

3. Develop your program according the pseudo code given in your lecture.

4. Test your program by running its main method.

5. Run JunitTestSuite test program. This suite will, in turn, run 2 sample of your instructor's unit tests LinkedListTest1.java and LinkedListTest2.java to validate your work. Please ensure all files: JunitTestSuite.java, LinkedListTest1.java and LinkedListTest2.java are resided in the same directory as your LinkedList.java. Show your test results to your instructor before turning your lab to Canvas. Here is a sample of a run of JunitTestSuite:



Deliverables:

Turn in your modified LinkedList.java including (1) Pre/Post conditions and (2) your programs's Junit test output file in PDF format to Canvas.

Demo your work, including the execution of JunitTestSuite, to the instructor and obtain sign-off note.