Lab 3

Adapter Pattern and Node List ADT

As discussed in class a doubly-linked list provides a natural implementation of the Node List ADT.

The Java Collections Framework does not provide a NodeList interface. In this lab you will need to adapt the LinkedList implementation of the Java Collections Framework to a NodeList and analyze this approach.

The Java Collections Framework is well documented in the this tutorial by Sun. The Collections Framework provides two list implementations: *java.util.ArrayList* and *java.util.LinkedList* . You should run the simple example program `TestListImplementation.java` which compares the two list implementations. The test program is contained in the archive lab3.zip.

Your NodeList should hold a sentence consisting of strings which your main program should print in order. See the main program in `Sentence.java` for clarification.

Your NodeList adapter class needs to implement the methods specified in this `NodeList.java` skeleton class. You may assume that each node in your NodeList has a unique reference but may contain several objects where a call to "equals()" will return true.

Consider the performance of your adaptor class. Which methods have not the expected performance of a NodeList implementation and why?

Summary

- Look at the Java Collections Framework
  - tutorial
- Download the archive
  - lab3.zip
- Study and run
  - `TestListImplementation.java`
- Look at
  - `NodeList.java`
- Implement indicated methods and test your code with
  - `Sentence.java`
- Analyze the behaviour of your adapter class
