Queens College
Computer Science Department

CS 212 – Spring 2017 – Project 2

Assigned: 14 March 2017
Due: 27 March 2017
Cutoff: 31 March 2017

List of Words

For this project we will use linked lists to store the unsorted and sorted Words (there should be no arrays in this project.)

Create a class called *WordNode* which has fields for the *data* (a Word) and *next* (WordNode) instance variables. Include a one-argument constructor which takes a Word as a parameter. (For hints, see the PowerPoint on "Static vs. Dynamic Structures".)

```
    public WordNode (Word w) {  . . }
```

The instance variables should have private access. There will not be any get and set methods for the two instance variables.

Create linked list class called *WordList.* This should be a linked list with head node as described in lecture. Modify it so that the data type in the nodes is *Word*. The no-argument constructor should create an empty list with *first* and *last* pointing to an empty head node, and *length* equal to zero.

Include two methods in class WordList: append and insert. The append method will add the new node to the end of the list; the insert method will add the node in the proper position to keep the list sorted in order by Word.

Instantiate two linked lists, and for every Word read from the file, add it (if it is three letters) to the first list using append, and to the second list using insert. You will end up with the first list having the Words from the input file in the order they were read, and in the second list the Words will be in sorted order. Display the unsorted and sorted Words in the GUI just as in project 1.

Submitting the Project.

You should now have the following files to submit for this project:

```
Project2.java
Word.java
WordGUI.java
WordNode.java
WordList.java
```

Submit a jar file.

Rather than upload all the files above separately, we will use Java's facility to create the equivalent of a zip file that is known as a **J**ava **AR**chive file, or "jar" file.

Instructions on how to create a jar file using Eclipse are on Blackboard. Create a jar file called **Project2.jar** and submit that.

Upload your project to BlackBoard by the due date for full credit.