

<b>CS 212 – Fall 2021 – Project 2</b>
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Assigned: 8 November 2021  
Due: 22 November 2021  
Cutoff: 27 November 2021

### List of Date212s

Create a class called *Date212Node* which has fields for the *data* (a *Date212*) and *next* (*Date212Node*) instance variables. Include a one-argument constructor which takes a *Date212* as a parameter. (For hints, see the PowerPoint on "Static vs. Dynamic Structures".)

```
public Date212Node (Date212 w) { . . }
```

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

Create an abstract linked list class called *Date212List*. This should be a linked list with head node as described in lecture. Modify it so that the data type in the nodes is *Date212*. 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 an append method in this class.

Create two more linked list classes that extend the abstract class *Date212List*. One called *UnsortedDate212List* and one called *SortedDate212List*, each with appropriate no-argument constructors. Each of these classes should have a method called *add(Date212)* that will add a new node to the list. In the case of the *UnsortedDate212List* it will add it to the end of the list by calling the append method in the super class. In the case of the *SortedDate212List* it will insert the node in the proper position to keep the list sorted.

Instantiate two linked lists, and for every *Date212* read from the file, add it to the unsorted and sorted lists using the *add* method. You will end up with the first list having the *Date212*s from the input file in the order they were read, and in the second list the *Date212*s will be in sorted order. Display the unsorted and sorted *Date212*s 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  
Date212.java  
Date212GUI.java  
Date212Node.java  
Date212List.java  
UnsortedDate212List.java  
SortedDate212List.java
```

### Submit a jar file.

Be sure the jar file contains **source code**, not classes.