CS206 Lab#3: Linked List

In this lab, we will learn about linked list and get ready for assignment 3.

Exercise 1: Design a class `City` that represents a city. It should have instance variables to store the following information. Include appropriate constructor and getters.

1. name of the city
2. population

Exercise 2: Implement a doubly linked list that stores a list of `City`. Remember, by convention, it should be called `CityDLL`. Code you saw in class can be found in `~dxu/handouts/code/lec06`. Your DLL should support the following functions:

1. The usual methods `first, last, addFirst, addLast, addBtw, removeFirst, removeLast, remove`
2. Test the above methods to make sure they work properly
3. Override `toString` to print out a list of all stored city names
4. Add the following cities to the list: (Philadelphia, 1,567,442), (New York, 8,550,405), (Houston, 2,296,224), (Chicago, 2,720,546), (Los Angeles, 3, 971,883). Print and make sure they are all there
5. Implement `insertBefore(City c, Node n)` so that you can insert a `City c` just before some node `n`
6. Use `insertBefore` to implement `insertSorted(City c)` so that a `City c` is inserted into the list in alphabetically sorted order.
7. Insert all cities use `insertSorted` instead. Print and make sure they are inserted in the correct order.
8. Modify `insertSorted` to insert in sorted order based on population instead