Assignment Prefix: Lab05

Due Date: Friday, Feb. 17th @ 11:59pm

Points: 100

This is an individual assignment.

Restrictions:

You cannot use any predefined Java classes in writing this lab.

Create a NetBeans project named Lab05 and save it to a location like the desktop or your flash drive. In the project you will do the following:

In this assignment, you are to create a complete SinglyLinkedList Class.

Begin this assignment by creating a new class named SinglyLinkedList that includes Code Fragments 3.14 and 3.15 from the textbook pages 126 to 127. As you type in these code fragments you should make sure that you understand how the list works.

Add the following three methods to your SinglyLinkedList Class:

- String toString( )
- boolean equals(Object o)
    - Two lists are equal if they contain the equal elements in the same order. Write your code for a deep equals.
- E removeLast( )
    - Removes and returns the last entry in the list
    - Returns null if the list is empty
    - Make sure the tail pointer ends up pointing to the new last entry

In your Client Class test your SinglyLinkedList Class as follows:

- Create an instance of your SinglyLinkedList Class where the element type is Integer.
- Add ten (10) random Integers in the range 0 to 100 to your list
- Use your toString method to print the contents of the list
- Print the first element in the list using the first() method.
- Print the last element in the list using the last() method.
- Create a second list and add the values 1, 2, and 3 to it using the addLast() method.
- Print the contents for your second list using toString
- Create a third list and add the valued 3, 2, and 1 to it using the addFrist() method.
- Print the contents for your third list using toString

- Use the equals method to see if the second and third lists are equal.
- Call removeFirst on the second list
- Print the contents for your second list using toString
- Call removeLast on the third list
- Print the contents for your third list using toString
- Use the equals method to see if the second and third lists are equal.

Things to turn in:

- Open a Microsoft Word document
- Copy and Paste the source code of the **Recursion Class** (make sure to use *Ctrl + A* to select all the source code of the program, *Ctrl + C* to copy, and Ctrl + V to paste.).
- Copy and Paste the source code of the **Recursion_Client** Class
- Copy and paste the output of the client program
- Next, zip the Project folder.
- Finally on blackboard, submit both your Word document and project zipped file.