CS 5040: Data Structures and Algorithms

Spring 2023, Assignment #2 – Linked List and Iterator

Develop Java program for each of the following problems. Please **name the programs as indicated** and add proper **program headers** and **output labels** as shown below.

Use only concepts and programming constructs/syntax we discussed in class.

Programming (30 points)

Get Java Class file ***`MyLinkedList.java`*** from D2L.

Change the filename, Class name, Constructor with yours ***`MyLinkedListYourName`***

Implement all empty methods. (Including iterator's methods)

- getFirst(), getLast(), addLast(), removeLast(), indexOf() ← You need to implement these
- next(), hasNext(), remove() of **Iterator** ← You need to implement these
- toString(), add(), addFirst(), remove(), removeFirst() ← these are already implemented

DO NOT CHANGE the name of methods, parameter type, return type.

Remove all written comments by instructor from the code, then write your comments.

Using code from outside sources receives NO credit.

You must write your own code to meet the assignment requirements.

Some methods are not in the lecture note but the description is written in the code.

While implementing your LinkedList, you can write your own Tester Class to test your methods. (Submission of the test program is not mandatory. Your tester class will not be graded)

When you think you are done, you can test it with MyLinkedListTester.java provided by the instructor. To Test your LinkedList, you need to Change all the declarations of ***`MyLinkedList`*** to ***`MyLinkedListYourName`*** in MyLinkedListTester.

Again, you cannot change method names, return type and parameter types.

Submission:

Before submitting your programs, make sure you review the assignment submission requirements and grading guidelines on the course webpage. The grading guidelines explain some of the common errors found in programming assignments.

1. One document with screenshots to show all your results, all individual .java files.
2. The assignment is due no later than **11:59 PM** on the due day posted in D2L.
3. Please compile and run your java files (only the .java files) right before you upload to the assignment submission folder in D2L.