**Project 3**

**Objective:** Learning linked list.

**Problem Specification:**

An employer would like to maintain a linked list for employees, the data stored is an employee number (a positive integer), number of years on the job (a short positive integer) and a yearly salary (a float). Would like you as the programmer to define the required classes in header files, and the methods in implementation files. The client uses a menu similar to the one we did in class. The methods used are:

* **Insert**: Which inserts elements at the end of the list, which is the most recent input is at the end of the list.
* **Remove**: which deletes the first element in the list.
* **Display**: its purpose is to display the list but needs the assistance of a Print function.
* **Print**: a recursive function that prints all the elements of the list, last to first.
* **Clear**: a function that deletes every Node from the list and leaves the list empty.

**Requirements:**

* Define a class **Node** containing the employee’s data and a pointer to the next **Node**.
* Define the necessary functions to access, instantiate, and set the data in the class **Node**.
* Define a class **LinkedList** that has only one data member, a pointer to a Node, and the necessary member functions in addition to the member functions above.
* All mutator functions parameters are constant referenced, and all accessor functions are constants.
* Functions not accessed by the client, should be private.

**Grading criteria:**

10 points Sufficient comments including specifications

5 points Menu is used to display options and calls methods.

5 points Guards are used.

10 points **insert** performs it task correctly.

5 points **remove** performs it task correctly.

5 points **display** performs it task correctly.

10 points **print** is recursive and performs it task correctly.

10 points **clear** performs it task correctly.

10 points all requirements above are included.

10 points **UML** class diagrams.

15 points Program runs correctly and performs its task correctly.

5 points test run to demonstrate all activities is handed-in.

**Submission Details:**

Submit a print-out of:

* The source program
* Demonstration of all activities.

**\*\*\* Due On: 03/10/2021 \*\*\***