EECE476 OOP and Data Structures for Computer Engineering

Project 03 – Linked List

Objective:

- Understand how to create a linked structure of list
- Understand basic implementations of linked list, constructors, observers, transformers and iterators.
- Understand how to write a test plan for the linked list

Description:

For this project, you will complete the provided partial C++ program that implements an unsorted linked list structure.

- The header file (Linked_List.h) is given as follows.
- The test driver program file(List_Test.cpp) is given for a demonstration of an unsorted list functionality.
- The definition of void PrintList() function is given.
- You will create a .cpp file (Linked_List.cpp) and implement the Linked_List class.

```
#include <iostream>
using namespace std;

// Define a structure to use as the list item
struct ListItem
{
	int		key;
	float	theData;
	ListItem *next;
};

class Linked_List
{
	private:
		ListItem *head;			// Pointer to head of the list

	public:
		Linked_List();			// Class constructor
		~Linked_List();			// Class destructor
		void ClearList();		// Remove all items from the list
```

```
        bool Insert(int key, float f);          // Add an item to the end of the list
        bool Delete(int key);                   // Delete an item from the list
        bool Search(int key, float *retVal); // Search for an item in the list
        int ListLength();                       // Return number of items in list
        bool isEmpty();                         // Return true if list is empty
        bool isFull();                          // Return true if list is full
        void PrintList();                       // Print all items in the list
};
```

Submission:

1) Working code - source files(*.cpp, *.h files) (70pts)
2) A lab report is required. The content should include: a. Introduction; b. Screenshot of outputs and explanations; c. Conclusion. The report should follow the report guideline. (20pts)
3) Comments in your code (15pts).