The American University in Cairo
Computer Science and Engineering Department

Fundamentals of Computing II

Assignment 3
Vectors and LinkedLists

Requirements

- Write a program that takes from the user *n* integers and stores them a vector of int.
- Then, create a function **insertAfter** that takes *firstValue* and *secondValue*. This function searches for each occurrence of *firstValue* in the vector and insert the *secondValue* after it in the same vector. The first and second values are taken from the user.

- Create a class that implements a LinkedList. The class must include functions to:

1- Add a node.
2- Remove a node.
3- Print all elements of a linked list.
4- Create a function that creates a linked list based on the vector's elements given that if the value occurs more than once in the vector then it should be reflected in the number of occurrences of that node in the LinkedList. This function should then return the linked list. (Node is a struct that contains the value of the number and its number of occurrences in the vector)
5- Finally, create a member function in the linked list class that returns the sum of all nodes. (Hint: You need to *traverse* the linked list and add the values of the nodes.)

- Your code must have a header for the LinkedList and a main file. (at least 2 files) + The report.
- If you used an online implementation for LinkedList as a reference, you must include the link in the report. Otherwise, it will be considered plagiarism. **This does NOT mean you can copy code.**

Grade Distribution:

- 70% code correctness.
- 30% Report.

By submitting this assignment, I affirm that I have followed AUC's Code of Academic Ethics and the work submitted is my own. I have not consulted unauthorized resources or materials nor collaborated with other individuals unless allowed.

Good Luck!