Sukkur IBA University
Kandhkot Campus
Lab Task - II
Fall 2022

Course: Data Structures   **Class**: BS (CS) – III
Date: September 16, 2022   **Time**: 2 hour
Instructor: Syed Muzamil Hussain Shah

General Instructions:

You will implement Doubly LinkedList from scratch with some basic functionalities in this lab task. if you could not complete this task in the lab then take it as HW.

Question 01 Doubly Linked List Code

Create a Generic Doubly Linked List class and add the following:

1. Add private Node class with two self-referencing node class variables, data variable(Generic type), and a 3 argumentative constructor.
2. define head, tail and length global variables of node class in the LinkedList class.
3. Add constructor in LinkedList class initialize head and tail.
4. Add addFirst(AnyType data) method.
5. Add addLast(AnyType data) method
6. Add displayBackward() method
7. Add displayForward() method
8. Add Main() method
9. Add getSize() method that total number of nodes.
10.   Add a clear() method that deletes all nodes of the linked list.
11.   Add isEmpty() method that returns true if there node in the linked list and false if there is at least one node.
12.   Add FindNode(AnyType data) it returns the position of the node in the linked list.
13.   Add DeleteFirst() method
14.   Add DeleteLast() method
15.   Add removeAt(int index), which removes the node of a given index.