AKFA UNIVERSITY

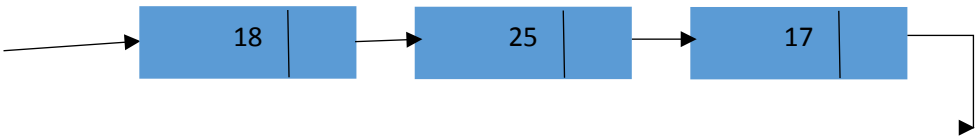
Data Structures
BS-III Fall 2022
LAB NO: 04_2

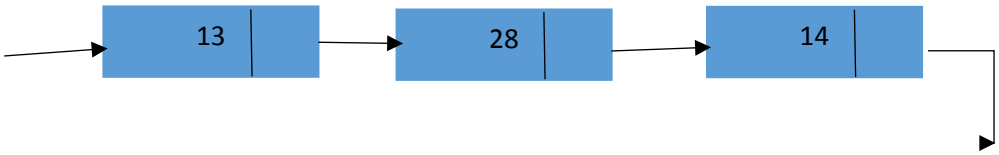
Name	
Student ID	
Date	

Task 1. For the implementation of linked list, you need to create a structure that can be named as **List** as its single object represents a single linked list. With the help of source codes provided in lab 4_1(List that insert the node at last), you are supposed to implement the following functions.

a) Traversing the list (Displaying all the nodes in the list). The prototype of the function is as below
   void List::traverse();
b) Inserting node using index based insertion (as discussed in the lecture). The function should return true in case of successful insertion and false in case of failed insertion. The prototype of the function is as below
   bool List::insertIdexBased(int data);
c) Searching within list. It should return the position (index number) of the node in case of successful search whereas should return -1 in case of failure in search.
   int List::search(int data);
d) Deleting the first item from the list
   void List::deleteFirst();
e) Counting nodes in a list
   int countNodes();

Task 2. Create two linked lists (two objects of list class/structure) named ListA and ListB, and store the following data in them





Merge the two lists in such a way that they represent a single list such as shown below

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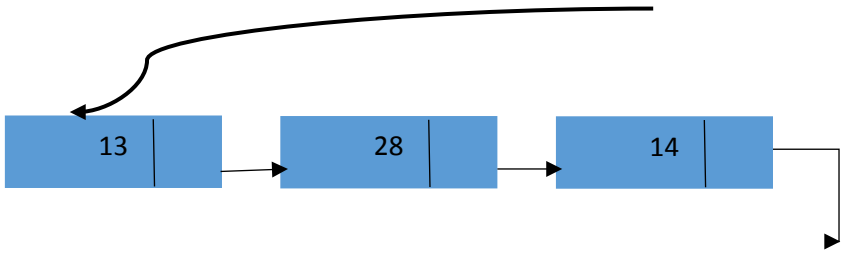

You can use any type of insertion algorithm to insert the nodes in the linked list.