

CENG 202 Data Structure

Lab Assignment 2 (26/03/2021)

Due date: (30/03/2021 at 23.55 on AYBUZEM)

LinkedList

You are given a **LinkedList.java** file. This file includes **LinkedListNode** class, **LinkedList** class and **Test** class.

You need to implement the parts which is written in the file with comments. Also, you can find the details below:

```
// A single LinkedList Node consists of one String data and one link to the next LinkedListNode
```

```
class LinkedListNode {  
    public String data;  
    public LinkedListNode next;  
  
    public LinkedListNode(String nodeData) {  
        this.data = nodeData;  
        this.next = null;  
    }  
}
```

```
// A LinkedList has 2 LinkedListNode which are  
// Head: to hold first item of linked list.  
// Tail: to hold last item of linked list.
```

```
public class LinkedList {  
    public LinkedListNode head;  
    public LinkedListNode tail;  
  
    public LinkedList() {  
        this.head = null;  
        this.tail = null;  
    }  
}
```

These are the functions that you need to implement:

```
void printLinkedList(LinkedListNode head) {  
    // This function is printing the items of LinkedList starting from head.  
}  
  
void insertToHead(String nodeData){  
    // This function is inserting an item to head of LinkedList. You may need  
    to check whether the list is empty or not.  
}  
  
void insertToSpecificPosition(String nodeData, int position){  
    // This function is inserting an item to a specific position of LinkedList.  
  
    // The indexes are starting from 0 and you may need to check whether the  
    LinkedList has a previous item to add new item to given index.  
  
    // Eg. Ahmet -> Mehmet is the list and if you want to add Ayşe to 4. index,  
    since you don't have 3. item you can't add.  
}  
  
void reversedPrintLinkedList(LinkedListNode head) {  
    // This function is printing the items of LinkedList in a reversed order  
    without saving items in another data structure like arrays.  
}  
  
void sortedInsert(String nodeData) {  
    // This function adds the items in an alphabetically sorted way from head  
    to tail.  
}
```