Data Structures
Assignment 2
Deadline: Thursday 28 March 2019 - 11:00 PM

Implement the following classes in Java and its members:

Class

LinkedListNode

Member Variables:

- **value (An integer value contained by the node)**
- **next(Next Node in the list)**

Member Methods:

public int getValue()

Returns the value contained in the node.

public LinkedListNode getNext()

Returns the "next" of the node.

Class

MySpecialLinkedListUtils

Static Methods:

1. `public static double[] summary(LinkedListNode head)`
   Returns the sum, average, median, maximum and minimum of the values in the list

2. `public static LinkedListNode reverse(LinkedListNode head)`
   Reverses the list whose head is passed as an only argument.

3. `public static LinkedListNode evenIndexedElements (LinkedListNode head)`
   Return a list of the elements of even indexes.
   Example:
   Input: [Node0] -> [Node1] -> [Node2] ->[Node3] -> null
   Output: [Node0] -> [Node2] - >null

4. `public static LinkedListNode insertionSort(LinkedListNode head)`
   Sorts the list in place using Insertion Sort Algorithm.

5. `public static LinkedListNode mergeSort(LinkedListNode head)`
   Sorts the list using Merge Sort Algorithm.

6. `public static LinkedListNode removeCentralNode(LinkedListNode head)`
   Removes the central node of the list, remove the first of the two central nodes if it has a an even number of elements.
7. `public static boolean palindrome(LinkedListNode head)`
   Determines if the list is a Palindrome.