Computer Science 3A

Practical Assignment 2

16 February 2017

Time: 16 February 2017 13:45 – 17:00   Marks: 50

Practical assignments must be uploaded to eve.uj.ac.za **before** 17h00 in the practical session.

Late submissions **will not be accepted**, and will therefore not be marked. You are **not allowed to collaborate** with any other student. You **must** upload your assignment to Eve **before** it will be marked.

Fact. People forget things. In order to help them remember tasks, a todo list can be used. In this week's practical we will be creating a Todo list application that persists items a user wants to save. You will be targeting the niche market of avid command line power users.

You are required to implement the following functions:

- **writeTodoItemToFile** - A function that appends a new TodoItem to the current binary file.

- **readTodoItemsFromFile** - A function that reads all the objects in the current binary file and loads them into a Single Linked List (SList).

- **addAfter** - Add an element after a given node in the list.

- **addFirst** - Add an element to the start of the list.

- **addLast** - Add an element to the end of the list.

- **remove** - Remove a specified node from the list. The removed element is returned.

- **search** - Returns the node that contains the element that is specified as a parameter.

- **toString** - The overridden method for displaying and serialising items in the Singly-Linked List.

You are required to implement a Java Program that realises the above operations. You must implement the following items:
The following files must be submitted to EVE:

1. *studentnumber*_p2.zip

Marksheet

1. Main: writeTodoItemToFile [8]

2. Main: readTodoItemsFromFile [7]

3. SList: addAfter [5]

4. SList: addFirst [3]

5. SList: addLast [2]

6. SList: remove [5]

7. SList: search [5]

8. SList: toString [5]

9. Compilation and Correct execution. [10]