

- Don't forget to set your Eclipse workspace and working set.
- You must submit the JAR file, exported (with source code), from your Eclipse project.
- You must check your JAR file to make sure all the source files (.java files) are present. It can be opened with file compression programs such as 7-zip or Winrar.
- Failure to export properly will result in your work not getting marked.

Linked List

1. Objective

- 1) Be able to understand the concept of using linked structure to save implementation time.

2. Instruction

- 1) Create Java Project in Eclipse.
- 2) Copy all folders in "Week04_Q1" to your project directory src folder.
- 3) You are to implement the following class:

a) `ShiftableList`

JUnit for testing is in files `ShiftableListTest.java` and `TestNoLoop.java`.

- 4) To submit:
 - Export your project to a JAR file, with source code.
 - Name your JAR file `ID_Week04_Q1.jar`. For example, `6623110021_Week04_Q1.jar`
 - Submit the JAR file on MyCourseville.

Q1. Linked List (14 marks)

You are given all classes for coding a Linked List that stores characters (one character per node). The list is an extended version of the list in the lecture (it's a circular doubly linked list).

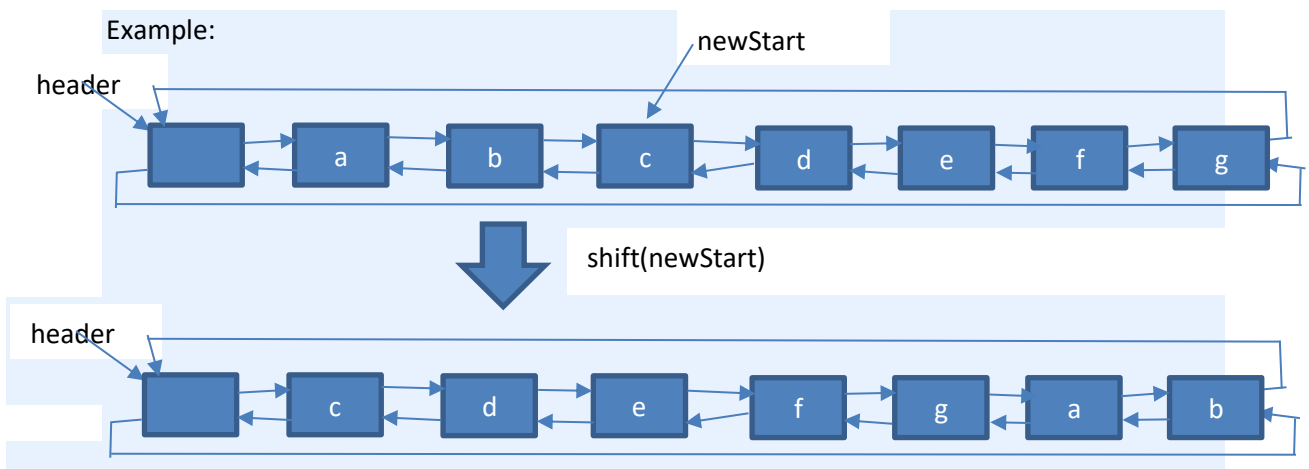
- The class you must modify is ShiftableList.

Your task is to write the following methods:

- a) **(10 marks) public void shift(DListNode newStart) {**
- This method shifts contents in the list such that the data at position marked by newStart becomes the first data. newStart always marks an actual node that stores data.
 - You **must not use loop**, if you do, you will lose 10 points.
 - This method **must be the last method** in the class. The auto grader will not give you score if you do not follow this instruction.

The test scores are as follows (in file ShiftableListTest.java):

- testShiftSimple01() 1 mark
- testShiftSimple02() 1 mark
- testShift1() 2 marks
- testShift2() 2 marks
- testShift3() 2 marks
- testShift4() 2 marks
- testNoLoop() in TestNoLoop.java (10 marks deducted if you do not write proper code)



- b) (4 marks) **public void shift(int n) throws Exception {**

- This method changes the nth data (counting from header) to be a new first data of the list. Assume that the value of n never exceeds the number of data.
- The test scores are as follows (in file ShiftableListTest.java):

- testShiftN1() 1 mark
- testShiftN2() 1 mark
- testShiftN3() 1 mark
- testShiftN4() 1 mark

Example:

