**LEBANESE AMERICAN UNIVERSITY**

**School of Arts and Sciences**

**Department of Computer Science and Mathematics**

Spring 2013

**Assignment 5 (LinkedList and ListIterator)**

**Due Date: Friday April 26, 2013**

**Exercise I**

|  |
| --- |
| **Product** |
| - id : int- name : String- expYear : int |
| + Product(id : int, name : String, expYear : int)+ setId(id : int) : void+ getId() : int+ setName(name : String) : void+ getName(): String+ setExpYear(expYear : int) : void+ getExpYear() : int |

|  |
| --- |
| **Market** |
| - products : LinkedList<Product> |
| + Market()+ getProducts() : LinkedList<Product>+ addProduct(Product product) : void+ expireProducts() : void |

You are asked to implement a simple market system. The system is composed of two classes which are Product and Market.

The Product class has three private variables which are id, name, and expiration year. The class’ constructor should initialize these variables and there should be setter and getter methods for them.

The Market class has one private variable which is a linked list of type Product. The constructor should initialize the linked list. There are three methods to implement in this class. The first method is getProducts which returns the linked list. The method addProduct should add the product in its parameter to the linked list. Finally, expireProducts should remove from the list the products which have an expiration year less than 2012.

Write a tester class that has a Market object and add five products using the addProducts method. After adding, print the list, then call expireProducts and print the list after removing products that have an expiration year less than 2012.

Solution: <http://www.javaproblems.com/2013/12/implementing-market-system-using.html>

**Exercise II**

Implement an ordered list using LinkedList and ListIterator (the one in the book). You need to provide the following methods: AddSorted, Retrieve, Delete and Search.

Solution: <http://www.javaproblems.com/2013/12/implementing-ordered-list-using_20.html>

**Deliverables:**

You must submit an electronic copy of this assignment (zip files containing only the .java files) through the blackboard to your lab instructors. You have also to do a demo during the first lab on or after the due date. Lab Instructors Emails: Marwan.fawaz@lau.edu, sara.elbizri@lau.edu.lb, rami.outa@gmail.com).

**Policy on Cheating and Plagiarism:**

Plagiarism on assignments and project work is a serious offense. If plagiarism is detected, a student will be subject to penalty, which ranges from receiving a zero on the assignment concerned to an “F” in the course.