CS526
Homework Assignment 3

Due: 9/30

The goal of this assignment is a practice of using Java's linked list.

You are required to write a program that manages textbooks. Name this program *TextbookManagement.java*. Textbooks are implemented as the *TextBook* class in the *TextBook.java* file, which is posted on Blackboard.

Your program reads textbook information from an input file named *textbook_info.txt* and stores the textbooks in Java's *LinkedList*. A sample input file is posted on Blackboard. Then, your program performs the following:

- Print on the screen all textbooks in the following format:

```
Course: CS100
Title: Intro to CS
Author: Name = John Smith, Age = 37
Price: 100.0

Course: CS200
Title: Java Programming
Author: Name = Susan Smith, Age = 35
Price: 200.0

Course: CS300
Title: Data Structures
Author: Name = Ahmed Suad, Age = 41
Price: 150.5

Course: CS400
Title: Analysis of Algorithms
Author: Name = Yapsiong Chen, Age = 70
Price: 220.5

Course: CS500
Title: Data Mining
Author: Name = Sonia Sanchez, Age = 29
Price: 80.5
```

- Print on the screen the cheapest book in the following format:

```
Cheapest book:
     Course: CS500
```

```
        Title: Data Mining
        Author: Name = Sonia Sanchez, Age = 29
        Price: 80.5
```

- Print on the screen the most expensive book in the following format:

```
Most expensive book:
        Course: CS400
        Title: Analysis of Algorithms
        Author: Name = Yapsiong Chen, Age = 70
        Price: 220.5
```

- Print on the screen the average price of all books in the following format:

```
Average price: 150.3
```

- Print the book by the youngest author on the screen in the following format:

```
Book by youngest author:
        Course: CS500
        Title: Data Mining
        Author: Name = Sonia Sanchez, Age = 29
        Price: 80.5
```

Documentation

No separate documentation is needed. However, you must include sufficient inline comments within your program.

Deliverables

You need to submit *TextbookManagement.java* file. If you have any additional file, combine all files into a single archive file and name it *LastName_FirstName_hw3.EXT*, where *EXT* is an appropriate file extension, such as *zip* or *rar*. Upload this file to Blackboard.

Grading

Program correctness is worth 80% (16 points) and documentation is worth 20% (4 points).

Your program will be tested with a different input file and points will be deducted in the following way:

- If not all books are printed, 2 points are deducted.
- If a book is printed incorrectly, 2 points are deducted.
- If the cheapest book is wrong, 2 points are deducted.

- If the most expensive book is wrong, 2 points are deducted.
- If the average price is wrong, 2 points are deducted.
- If the book by the youngest author is wrong, 2 points are deducted.

Points will be deducted if your program does not have sufficient inline comments up to 4 points.

If your program does not compile, you will be given a chance to correct your program and resubmit it once. If your program still does not compile, 12 points will be deducted.