Software Engineering and Management
DIT948 - Programming
Assignment 2

Autumn 2011

Assignment 2 A Small Library

In this assignment you will get some experience in handling text files and simple data structures such as arrays and ArrayLists.

The Program

The purpose of this program is to check a text file that contains information about books in a library for errors and creates a new file with only the error-free books. The input file is named *Books.txt* and can be downloaded from the course homepage at GUL in the Documents → Assignments folder.

Two sample lines in the file of books have the following appearance where different fields are separated by a sharp-sign (#).

```
9780141188607#3#Claudius the God#Robert Graves#Penguin Classics#2006#2#090923
9780140449327#1#The Aeneid#Virgil#Penguin Classics#2003#18#091114#091213#456
```

A line from the file should then be translated into the following class description (The Book class):

Isbn	String
CopyNumber	int
Title	String
Author	String
Publisher	String
Year	int
Statistics	int
BorrowDate	Date
ReturnDate	Date
LibraryCardNumber	int

The Books.txt can contain any number of books and the author and title fields do not contain a #-sign. The following consistency checks should be performed on every line in the file:

- The isbn-number should be correct according to the rules of ISBN-13 (for more information see http://en.wikipedia.org/wiki/Isbn)
- CopyNumber, Year and Statistics should be numeric
- Title, Author and Publisher must contain values
- BorrowDate must be a valid date
- ReturnDate if available must be a valid date
- LibraryCardNumber if available must be numeric.

Note: if a book isn't currently borrowed the two last fields are nonexistent.

The correct records should be written to a text file with the name *NewBook.txt* which has the same format as the original Books.txt. The new file NewBook.txt should contain all the error-free books sorted by the name of the Author.

All lines containing an error should be written to a text file with the name *ErrorLines.txt*. This file should contain an error-message for each faulty line (e.g. Wrong ISBN-number) followed by the faulty line.

```
Wrong ISBN-number#0--18143-3#1#User Interface Design#Soren Lauesen#Addison Wesley#2005#12#051114#070920#456
```

All files should be located in the same directory and the user should be able to specify the directory at runtime.

Non Functional Requirements

All of your source code should follow the “Code Conventions for the Java Programming Language”, see http://java.sun.com/docs/codeconv/index.html

All of the source code should of course be suitably commented.

Grading

All 3 assignments for the course are mandatory and must be handed in. Each assignment will be graded and will be given a passing grade (G) or a not passing grade (U). The lastest date to submit corrections if you receive a failing grade is posted on GUL.

Submission

Assignment 2 must be uploaded to the Gul system before the deadline. The submission should include the following files:

- A Readme-file, containing name, personal number and email address of the person/persons handing in as well as instructions on how to run the program. Any assumptions made should also be stated.
- All java-files (no class-files)

All the above files should be put in an folder and named with Assignment2 and the authors name, e.g. Assignment2_Carlson_Petersson. This folder should then be zipped and then uploaded to Gul in the Assigment 2 under Content.

All comments etc. will be posted on Gul.