University of Hertfordshire UH

School of Physics, Engineering and Computer Science

Assignment Briefing Sheet (2020/21 Academic Year)

Section A: Assignment title, important dates and weighting

Assignment title:	Practical	Group or individual:	Individual
Module title:	Programming (Online)	Module code:	4WCM0022
Module leader:	Peter Lane	Moderator's initials:	
Submission deadline:	7th January 2021 23:59	Target date for return of marked assignment:	4th February 2021

You are expected to spend about 40 hours to complete this assignment to a satisfactory standard.

This assignment is worth 60% of the overall assessment for this module.

Section B: Student(s) to complete

Student ID number	Year Code
NOT NEEDED FOR ONLINE SUBMISSION	

Notes for students

- For undergraduate modules, a score above 40% represent a pass performance at honours level.
- For postgraduate modules, a score of 50% or above represents a pass mark.
- Late submission of any item of coursework for each day or part thereof (or for hard copy submission only, working day or part thereof) for up to five days after the published deadline, coursework relating to modules at Levels 0, 4, 5, 6 submitted late (including deferred coursework, but with the exception of referred coursework), will have the numeric grade reduced by 10 grade points until or unless the numeric grade reaches or is 40. Where the numeric grade awarded for the assessment is less than 40, no lateness penalty will be applied.
- Late submission of referred coursework will automatically be awarded a grade of zero (0).
- Coursework (including deferred coursework) submitted later than five days (five working days in the case of hard copy submission) after the published deadline will be awarded a grade of zero (0).
- Regulations governing assessment offences including Plagiarism and Collusion are available from https://www.herts.ac.uk/about-us/governance/university-policies-and-regulations-uprs/uprs (please refer to UPR AS14)
- Guidance on avoiding plagiarism can be found here: https://herts.instructure.com/courses/61421/pages/referencing-avoiding-plagiarism?module_item_id=779436
- Modules may have several components of assessment and may require a pass in all elements. For further details, please consult the relevant Module Handbook (available on Studynet/Canvas, under Module Information) or ask the Module Leader.

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This Assignment assesses the following module Learning Outcomes (from Definitive Module Document):

Successful students will typically:
1. have a knowledge and understanding of sufficient features of a high-level programming language to develop solutions to simple programming problems;
2. have a knowledge and understanding of the concepts of data declaration and operations, control flow (sequence, selection, iteration, subroutine call) and modularisation;
3. have a knowledge and understanding of the terminology used in describing programs and programming;
4. be able to design and implement solutions to simple programming problems in a given programming language;
5. be able to execute, test and de-bug programs; and
6. document programs to an agreed standard.

Assignment Brief:

You have been asked to implement a Loan Item System for a local library, which they can operate manually. In this assignment, you will create a prototype system with limited functionality and explain how you have implemented the system in a short design document.

The library contains various items for loan: books, magazines, DVDs and CDs. These items have attributes: all have a title and a library ID number. Books and CDs have an author/artist, whereas magazines and DVDs instead have a publisher. All items are kinds of 'loanable item', which have two further attributes: a flag to indicate if the item is on loan, and a target return date.

Task 1: Decide on a set of fields and data types for the various attributes described above, e.g. the target return date could be represented as a string in the format "YYMMDD". Organise the fields between Java classes and/or interfaces to represent each of LoanItem, Book, Magazine, DVD, and CD. Implement these in code, with appropriate accessors or mutators. (30%)

Task 2: In a tester class, create a small test collection for the library. The collection can be stored in a Java array, a fixed-size of 20 items should be enough. Populate this collection with actual examples, e.g. for a book: author "Tolkien", title "The Hobbit", library id "Item-1", on-loan? "No", return-date "000000". (10%)

The library needs to be able to see its collection printed out as a report. The report must show the library id, the item's type (i.e. if it is a book, magazine, DVD or CD), the item's title, if it is on loan and, if so, what its return date is. There should also be a summary line, showing the total number of items and how many are out on loan.

A sample report:

```
Item-1, Book, The Hobbit, no
Item-2, CD, Greatest Hits, yes, 210215
Item-3, Magazine, Astronomy Now, no

TOTAL:  3 items with 1 on loan
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Task 3: Add to the tester class methods to output this report. One method should print the report using "System.out.print", and a second method should save save the report to a file (which can be in plain text, or html format). (30%)

Task 4: Make sure your code is documented throughout using JavaDoc. (10%)

Submission Requirements:

Submit TWO items to the online submission site:

1. A single PDF document containing your design document, to a maximum of 10 pages
2. A single ZIP file, containing your Bluej project code.

Marks awarded for:

- Answering the tasks as set out above, including a description of how you have solved each one in your design document. (80%)
- Overall clarity/quality of the English descriptions and the written code. (20%)

A reminder that all work should be your own. Reports exceeding the maximum length may not be marked beyond the 10 pages.

Marks for each task will be determined based on *both* your submitted code *and* description in your design document.

Type of Feedback to be given for this assignment:

Along with the marks, each student will receive individual written feedback on the online platform.