

ASSIGNMENT I : Integrated Software Development Workshop 2024/2025

Objectives

- Construct a software using Java programming language with user-friendly graphical user interface in a team.

Specification

Create a Java-based application to manage a library system where users can borrow, return, and search for books. This assignment will evaluate how you handle object-oriented principles, collections, file I/O, and graphical interfaces.

Key Features:

1. Book Class:

- A Book class with attributes like title, author, ISBN, availability, and borrowerName. Do not use a different name for the class.
- Methods to borrow, return, and display details of the book.

2. Library Class:

- A Library class that maintains a collection of books using Java Collections (ArrayList or HashMap). Do not use a different name for the class.
- Methods to:
 - Add books.
 - Search for a book by title, author, or ISBN.

3. File I/O:

- Implement file handling to read from/write to a file for storing book. The data should persist even after the program is closed. In another word, the modified data should be saved, and file should be loaded when program start up.
- Store and load file in CSV format.

4. Graphical User Interface (GUI):

- Use JavaFX to create a GUI where users can manage the library. Other GUI library such as SWING and AWT are not allowed.

Mark distribution:

Book Class and Library Class: 30%

File I/O: 30%

GUI (JavaFx): 40%

Due Date: 1 December 2024

Submission format

- A report that contains the team members and explains the contributions of every member.
- All source codes
- 3 mins (max) video recording.

Video recording: Demonstrate all the functionalities of the program. Failure to demonstrate the functionalities may result in lower mark and students cannot appeal for the reevaluation.

Notes

This assignment is to be done by 2-3 students in a group. Any part of the program submitted by a student/group for the evaluation must not be shared with another student/group. Anyone caught copying or let his/her program to be copied will automatically get zero mark for the assignment. References taken from any sources must be quoted and declared. Group members that do not contribute will get zero.

Assignment Assessment Rubric

	Excellent (80-100%)	Good (65-79%)	Moderate (40-64%)	Poor (0-39%)	Total
Part 1: Book Class and Library Class (30%)	All the classes and functions are implemented. Object oriented programming is used.	All the class and functions are implemented. Object oriented programming is not used.	One of the classes is not implemented, or some of the functions are not implemented.	Most of the functions are not implemented.	
Part 2: File I/O (30%)	The data is saved and loaded properly. File stored in CSV format.	The data cannot load or save correctly.	File is not stored in CSV format.	No save and load function implemented.	
Part 3: GUI (40%)	GUI is implemented using JavaFx and is user friendly and interesting.	GUI is implemented using JavaFx and it is interesting.	GUI is implemented in JavaFx.	GUI is not implemented using JavaFx, or there is no GUI.	
				Total	