

IS2104: Rapid Application Development

Assignment 02

Task: Develop a Java Console Application for Library Management

This assignment is a group project, so please form groups consisting of four members each. Your task involves creating a console application that offers the following functionalities:

1. **Add Books:** Allow the addition of new books to the library.
2. **Register Members:** Enable the registration of library members.
3. **Remove Books:** Allow removal of books from the library's collection.
4. **Remove Members:** Enable the removal of members from the library's records.
5. **Search Book Information:** Provide the ability to search for information about a specific book.
6. **Search Member Information:** Allow searching for information about a library member.
7. **Display Book Names:** Display the names of all the books in the library.
8. **Display Member Names:** Display the names of all the registered members.
9. **Lend Books:** Facilitate the lending of books to library members.
10. **Return Books:** Manage the return of borrowed books.
11. **View Lending Information:** Display information about book lending transactions.
12. **Display Overdue Books:** List books and borrowers' details if the return date is overdue.
13. **Fine Calculation:** Calculate fines for members based on the overdue period when returning a book:
 - Rs. 50 per additional day for up to 7 days
 - Rs. 100 per additional day after 7 days

Project Requirements:

- Design a UML Class Diagram that outlines the structure of your library management system.
- Develop a Java console application based on the provided class diagram. You do not need to integrate the system with a database at this stage.

Note: Make sure to focus on creating a well-structured and organized codebase, utilizing appropriate classes, methods, and data structures.

- Create a video that demonstrates the system's design, codebase, and functionalities. The video should be a maximum of 15 minutes. Please upload the video to YouTube as an unlisted file. (In the video each member should present their individual contribution)

- Prepare a document that includes the following:
 - Link to the YouTube video demonstrating the system.
 - Individual contribution of each group member detailing their role and responsibilities in the project.
 - Please make sure to include your index number and name with initials.

Submission Guidelines:

- You need to upload the zipped project folder alongside the UML class diagram and the document you created to the LMS on or before 11:55 PM on 30th of September, 2023.

Feel free to contact me if you need any clarification on the assignment.

Email: isp@ucsc.cmb.ac.lk