IT314-Software Engineering

Lab 7 – Domain Analysis Modeling & Sequence Diagram

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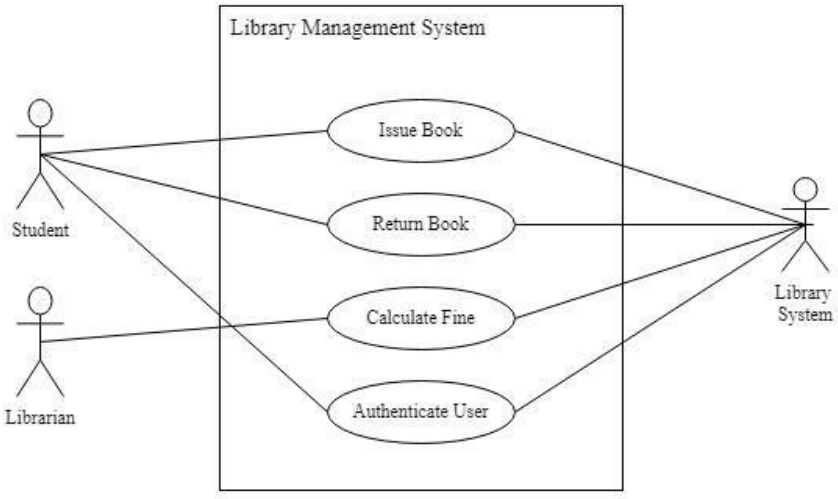
1 : The Use Case Diagram



Use Case Documentation

Primary Actor: Librarian/Library

Secondary Actor: Student

Preconditions:

- The librarian is logged into the authenticated Library Management System.
- The student is registered in the system.

Postconditions:

- The book is marked as ”issued” to the student.
- The due date for return is set.

Normal Flow:

1. Librarian selects ”Issue Book” from the Library Management System.
2. System prompts librarian to enter the student’s ID or search for the student.
3. Librarian enters the student’s ID or searches for the student.
4. System displays student information.
5. Librarian selects the book to be issued from the available books.
6. System marks the book as ”issued” and assigns a due date for return.
7. Librarian confirms the issue.

Alternative Flow (Student Not Found):

- If the system cannot find the student, it prompts the librarian to re-enter the student's information.

Alternative Flow (Book Not Available):

- If the selected book is not available, the system informs the librarian and prompts for an alternative book selection.

Exceptional Flow (Late Return):

- If the book is returned after the due date, the system calculates the fine and updates the student's account.

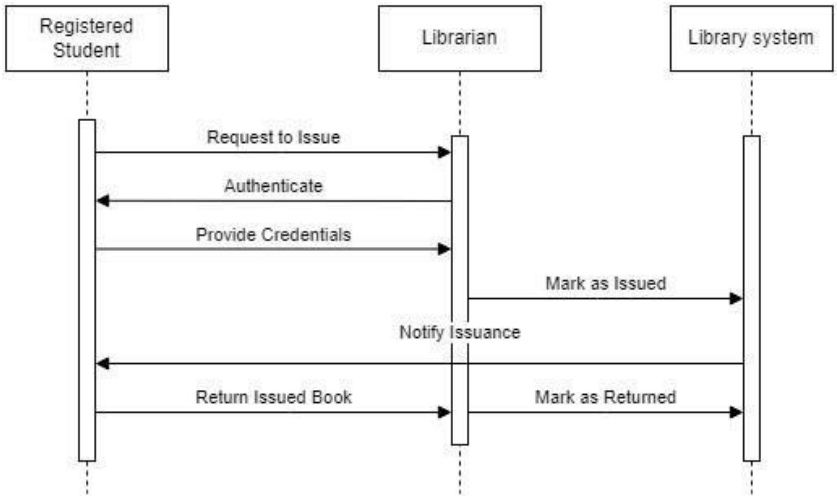
Exceptional Flow (Book Not Returnable):

- If the book is not in a condition to be issued (e.g., damaged), the librarian updates the book status in the system and informs the student.

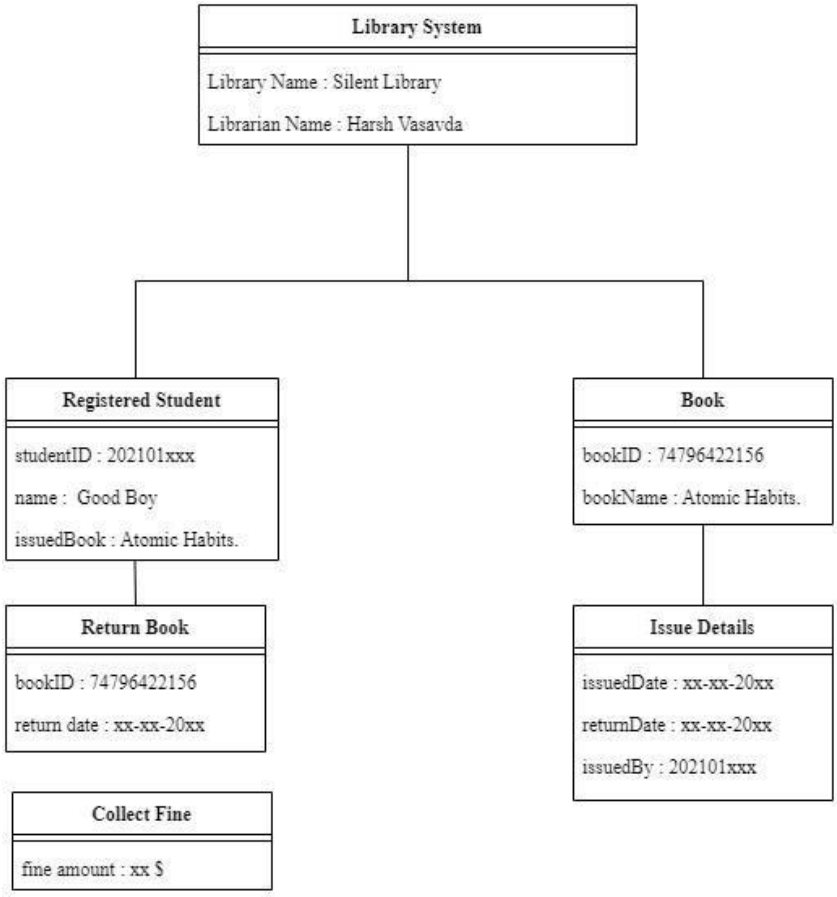
Notes:

- The due date is calculated based on the institute's policies.
- The librarian has the authority to override the due date if necessary (e.g., special circumstances for a student).

2 : The Sequence Diagram for the "issueBook" use case



3 : The Object Diagram for the “issueBook” use case



Q2. The Sequence Diagram and Operations