

IT-313

Software Engineering

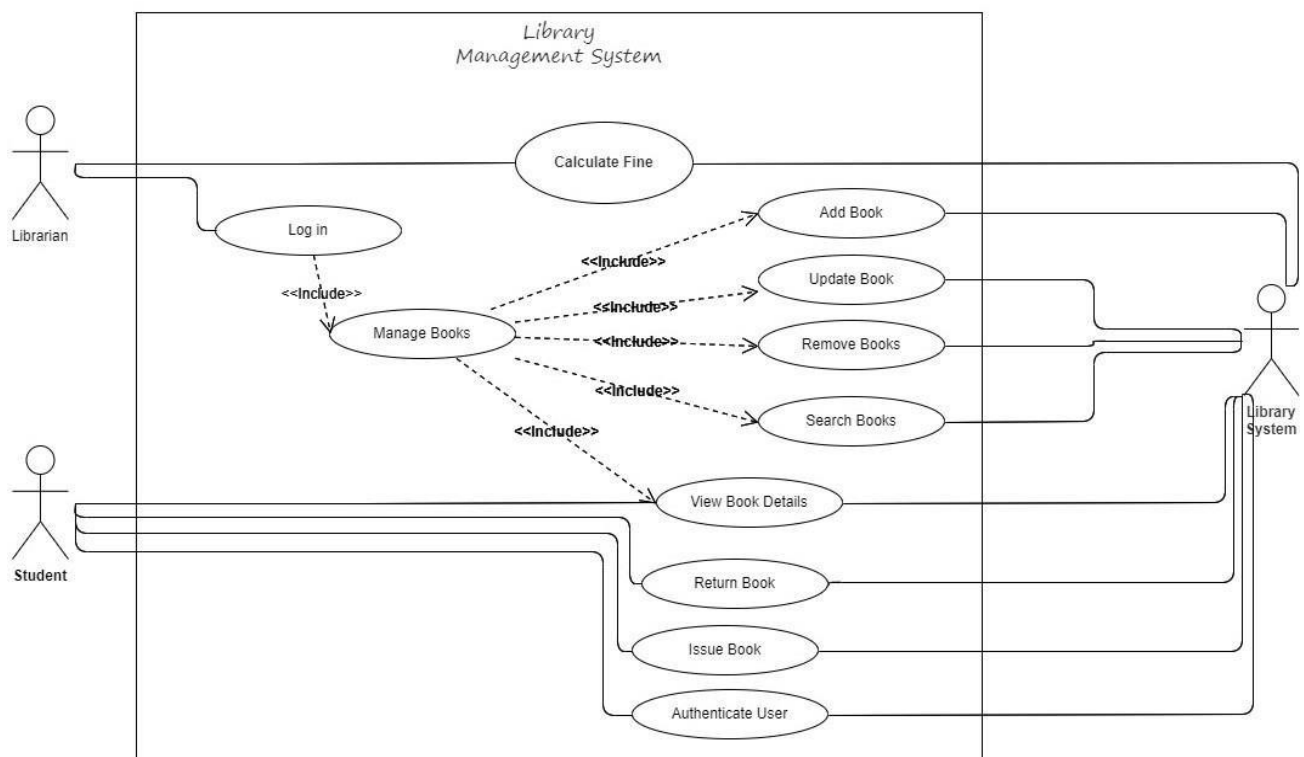
LAB - 7

Domain Analysis Modeling and Sequence Diagram

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Q-1.1 : 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:

- Librarian selects “Issue Book” from the Library Management System.
- System prompts the librarian to enter student ID.
- Librarian enters the student ID or searches for the student.
- System displays student information.
- Librarian selects the book to be issued from the available books.
- System marks the book as “issued” and assigns a due date for return.
- Librarian confirms the issue.

Alternative Flow (Student ID Is Not Found) :

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

Alternative Flow (Book Is Not Available) :

- If the selected book is not available, the system notifies the librarian and informs the student about the same.

Exceptional Flow (Book Is Returned Late) :

- The system calculates the penalty and updates the student's account if the book is returned after the deadline.

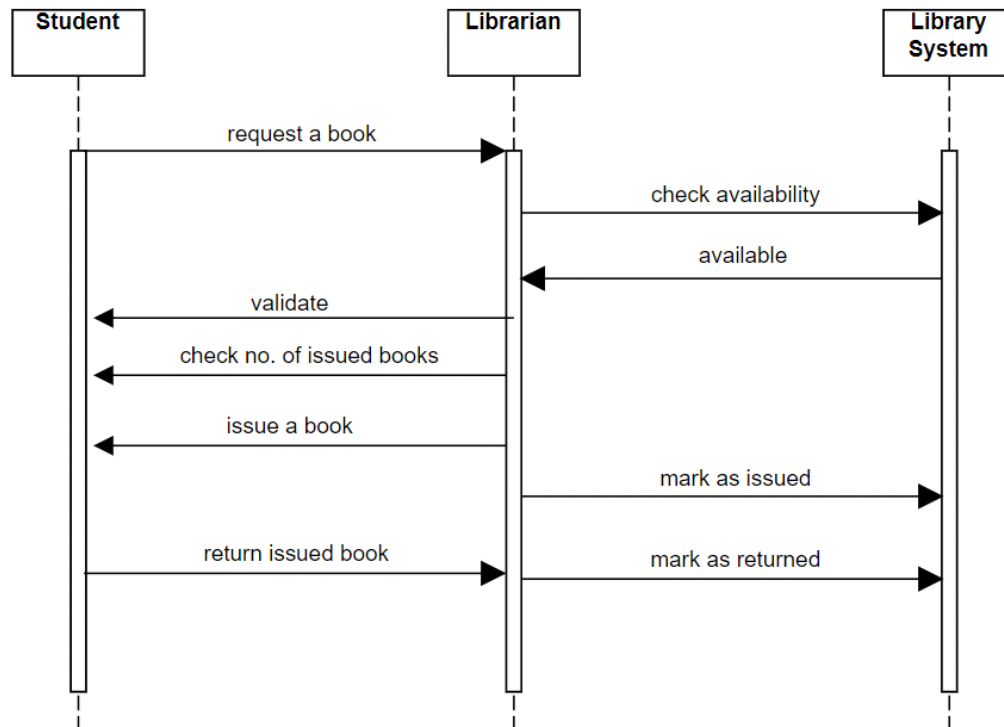
Exceptional Flow (Book Can Not Be Issued) :

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

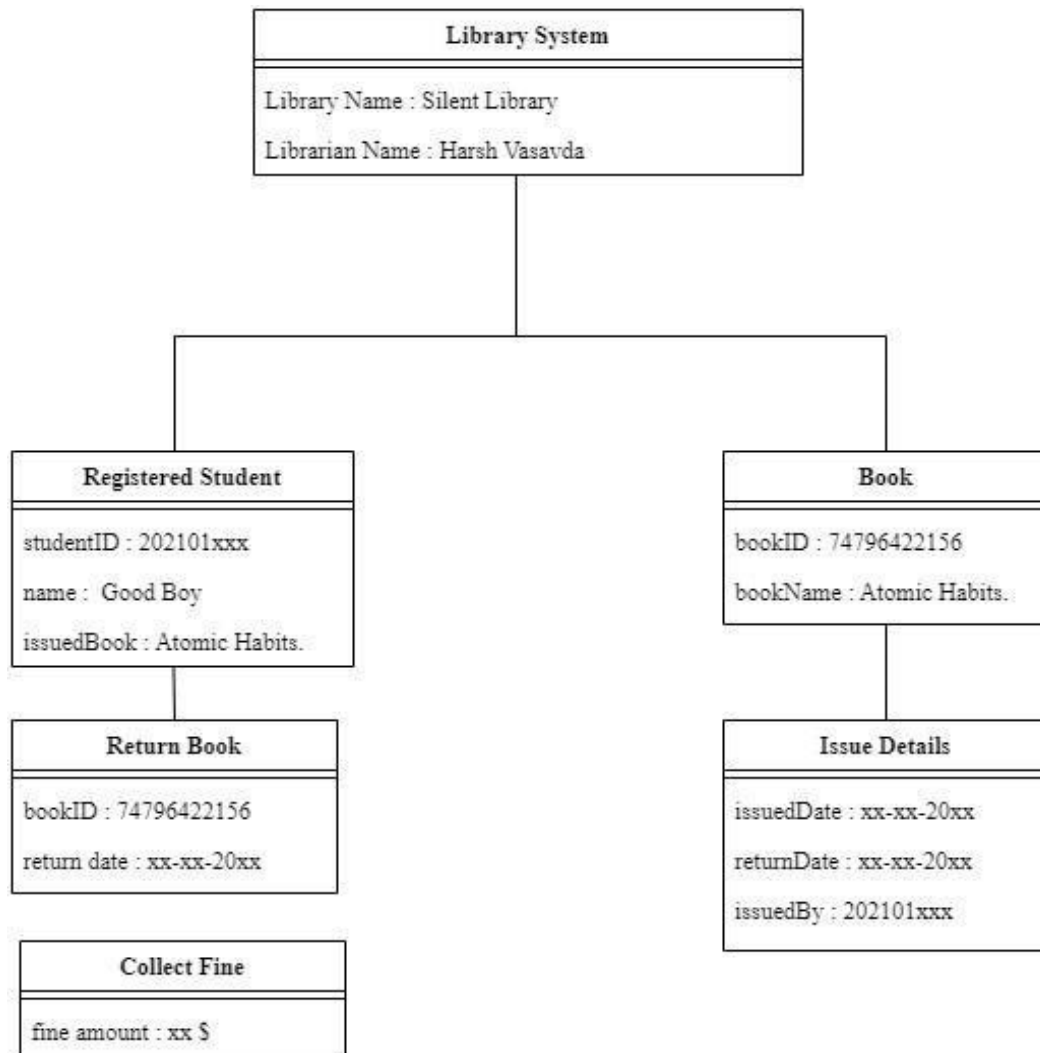
Notes :

- 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).

Q-1.2 : The Sequence Diagram for the “issueBook” use case



Q-1.3 : The Object Diagram for the “issueBook” use case



Q-2. The Sequence Diagram and Operations

