IT313 Software Engineering
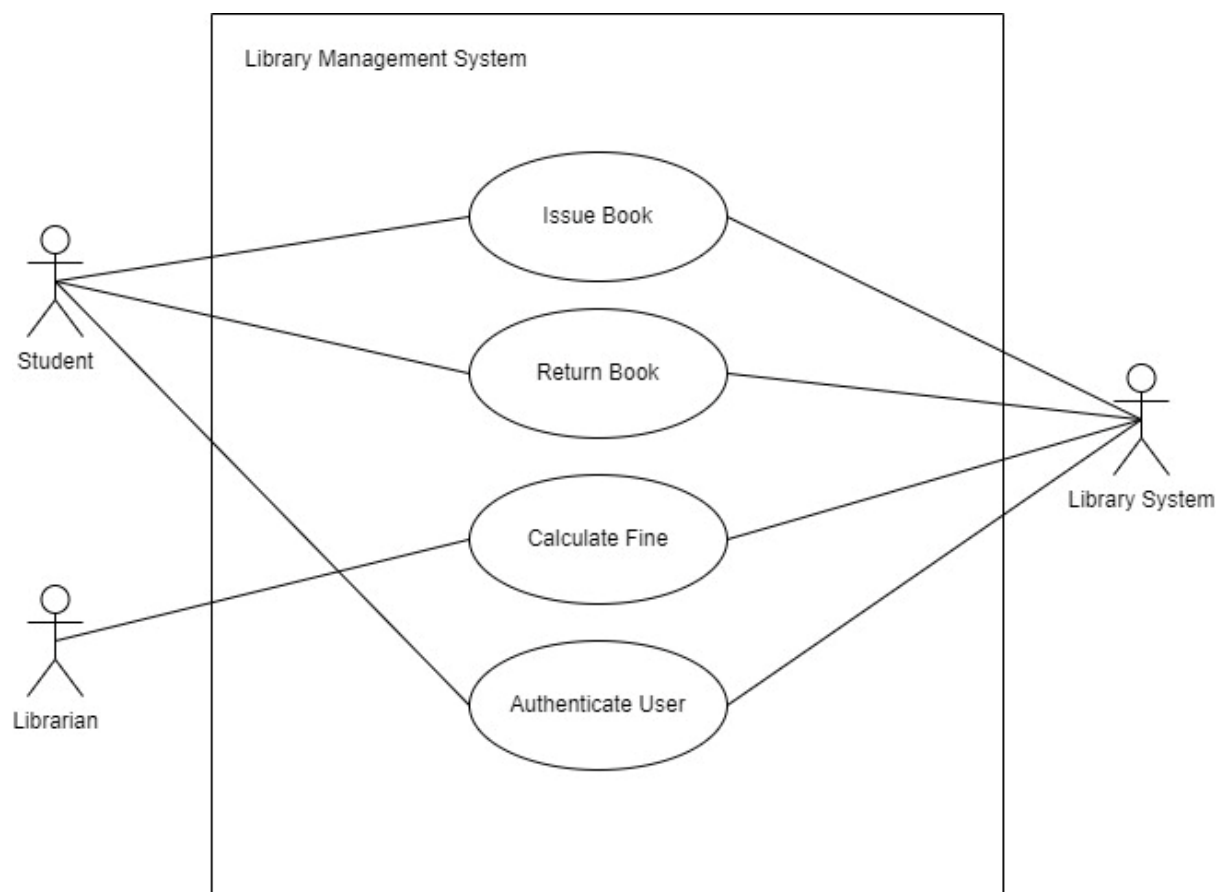
Lab 7

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Q1.1

Use Case Diagram

Use Case Documentation

Primary Actor: Librarian/Library
Secondary Actor: Student

Preconditions:
- the librarian is signed into the secure Library Management System.

- The student has been added to the system.

Postconditions:
- the book is noted as having been "issued" to the student.

- A return deadline is established.

Normal Flow:
1. The library staff member chooses "Issue Book" in the library management system.

2. The computer prompts the librarian to enter the student's ID or do a student search.

3. The librarian types in the student's ID or does a search for the user.

4. The system shows student data.

5. A librarian chooses a book from the stock to be issued.

6. The system designates the book as "issued" and gives it a return deadline.

7. Librarian confirms the issue.

Alternative Flow (Student Not Found):

The system prompts the librarian to enter the student's details again if it is unable to locate the student.

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):

The system computes the fine and updates the student's account if the book is returned after the deadline.

Exceptional Flow (Book Not Returnable):

The librarian notifies the student and updates the book status in the system if the book cannot be issued because it is damaged.
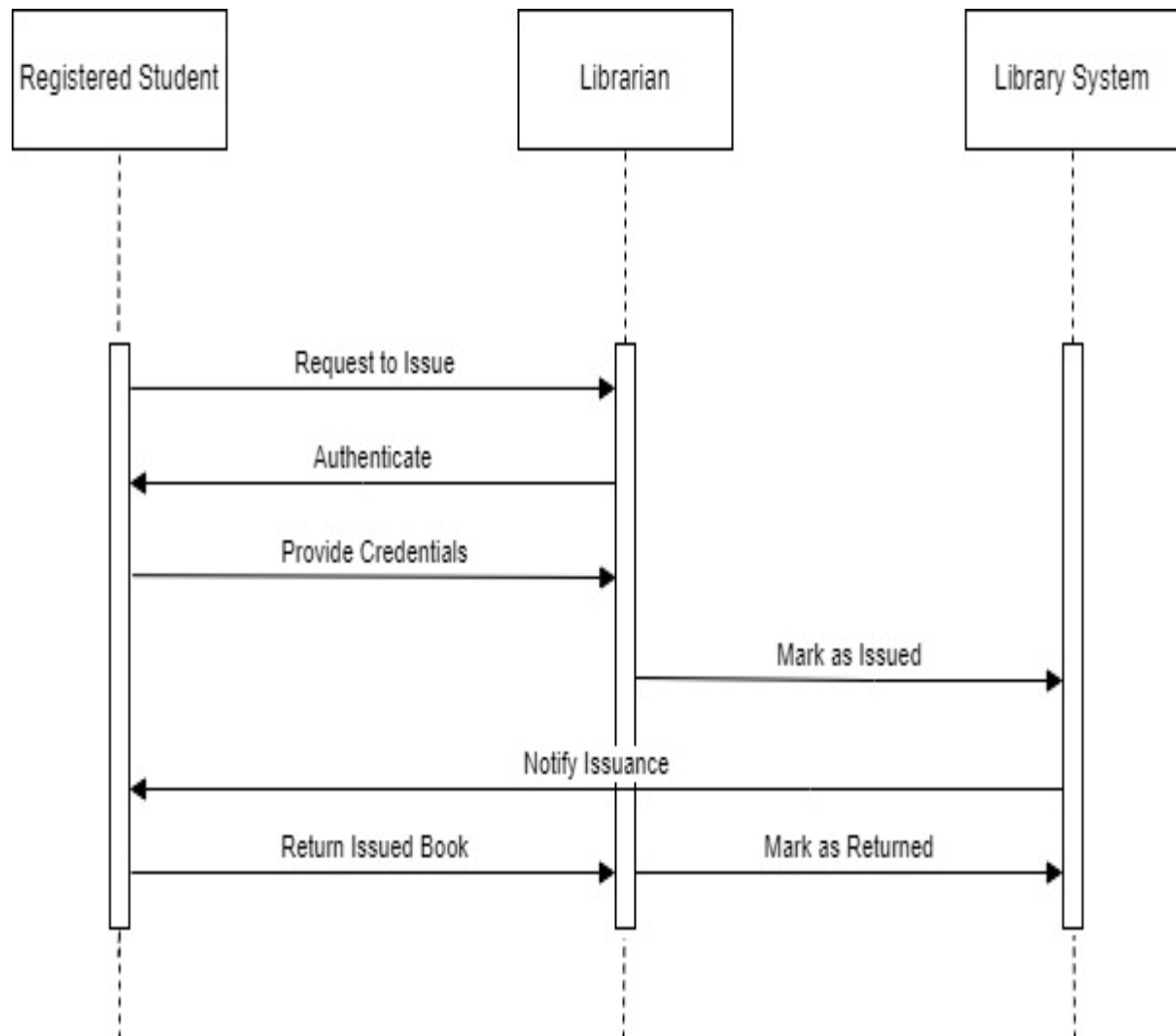
Notes:
The due date is determined by the institute's policies.

the librarian has the power to change it if required (for instance, in cases when a student has special situation).
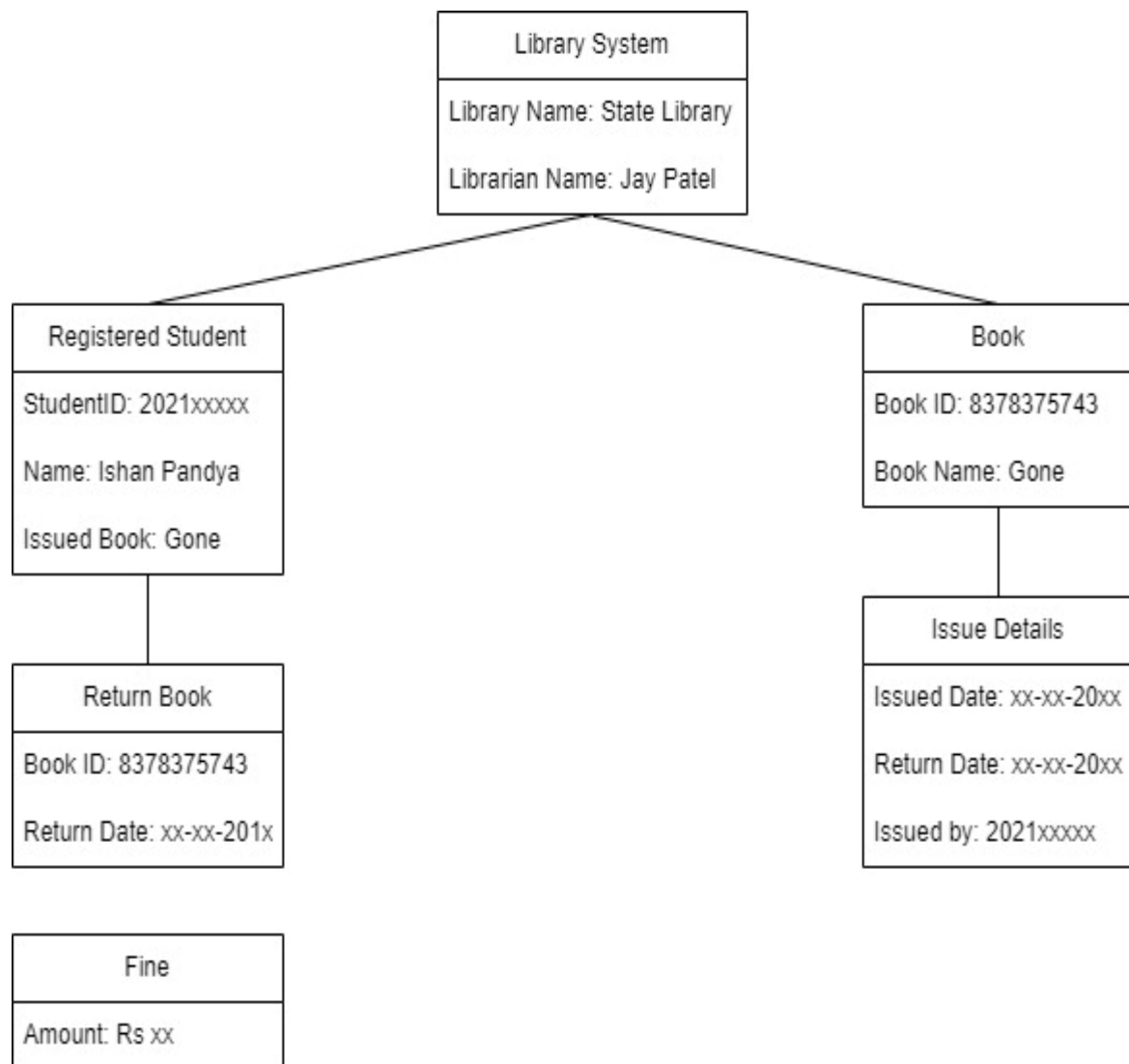
Q1.2

The Sequence Diagram for the "issueBook" use case.

Q1.3

Draw the analysis object diagram for the "issueBook" use case analysis.

Library System
Library Name: State Library
Librarian Name: Jay Patel

Registered Student
StudentID: 2021xxxxx
Name: Ishan Pandya
Issued Book: Gone

Book
Book ID: 8378375743
Book Name: Gone

Return Book
Book ID: 8378375743
Return Date: xx-xx-201x

Issue Details
Issued Date: xx-xx-20xx
Return Date: xx-xx-20xx
Issued by: 2021xxxxx

Fine
Amount: Rs xx

Q2

The Sequence Diagram and Operations.