Name :- **Vinit Mehta**
ID :- **202101477**
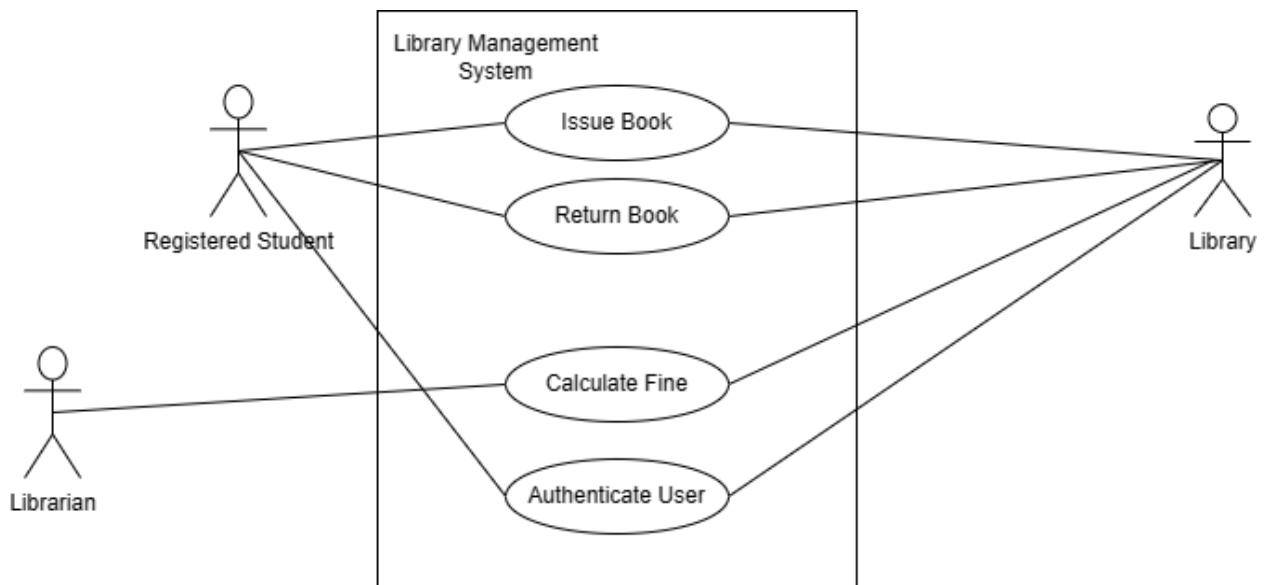Group :- **6**
Lab **:- 7**

1) Consider the following piece of text -
"A library maintains multiple reading materials which include books, journals, and magazines. The books are issued to the registered students of the institute, for a specified period of time. The issued books are to be returned back to the library. Delayed returns are subjected to stipulated fines. The issue-return process is administered by one of the librarians through an authenticated Library Management System."

Complete the use case diagram for the above problem text along with use case documentation for "issueBook" use case.

Use Case Documentation for "issueBook" Use Case:

Use Case Name: Issue Book
Description: This use case represents the process of a registered student issuing a book from the library.
Primary Actor: Registered Student
Secondary Actor: Library and Librarian

Preconditions:

The librarian must log in and authenticate the registered student.
The library must have the book that is being issued.

Postconditions:

The book has the inscription, "Issued to Student."
The book return deadline has been established.
The successful issuance is announced to the student.

MainFlow :

The registered student asks for a book to be issued.
The student's authentication status is verified by the system.
If the requested book is available, the system verifies this.
The system records the book as having been issued to the student if it is available.
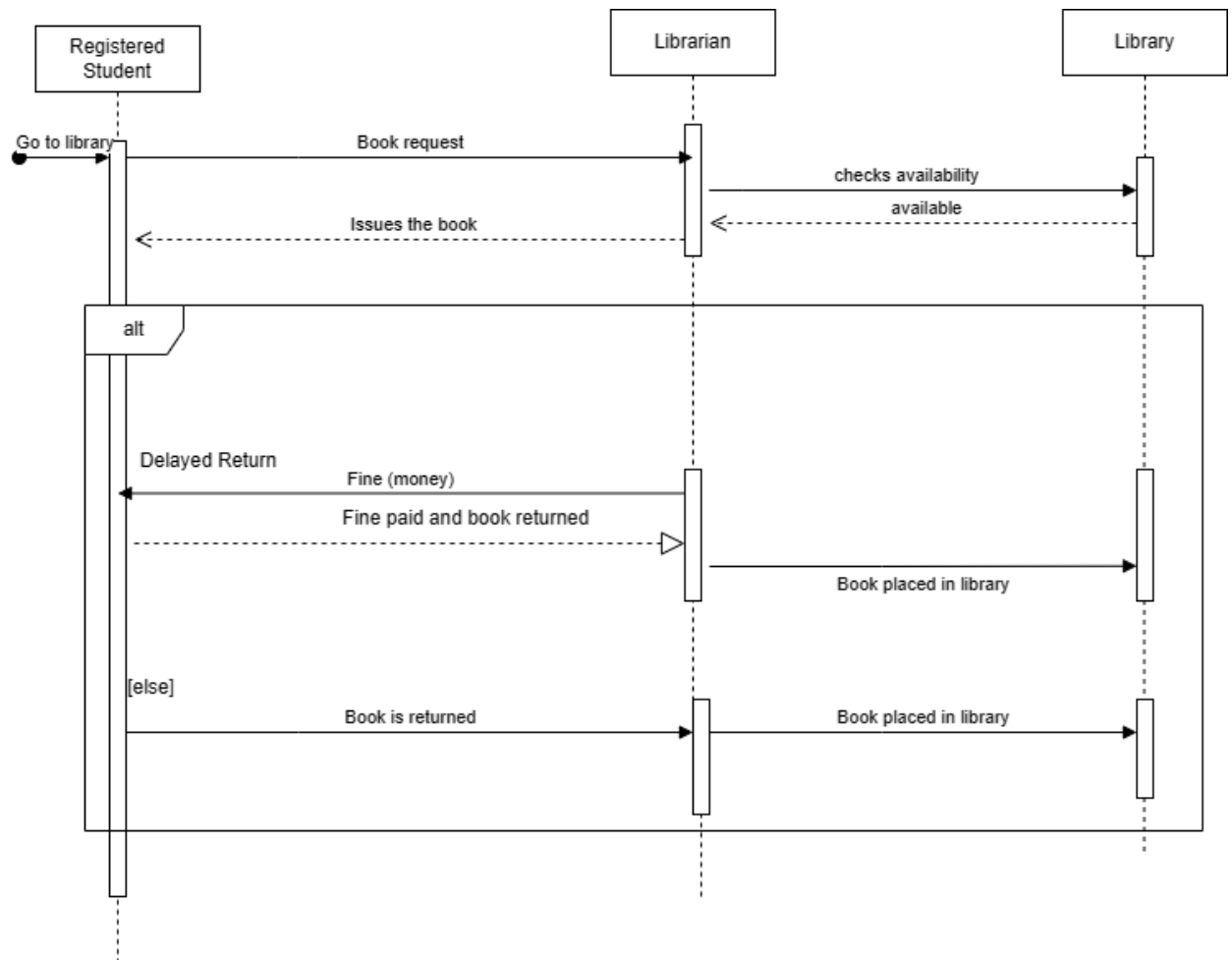The system determines the due date for book returns.
The system alerts the librarian and the student that the issuance was successful.
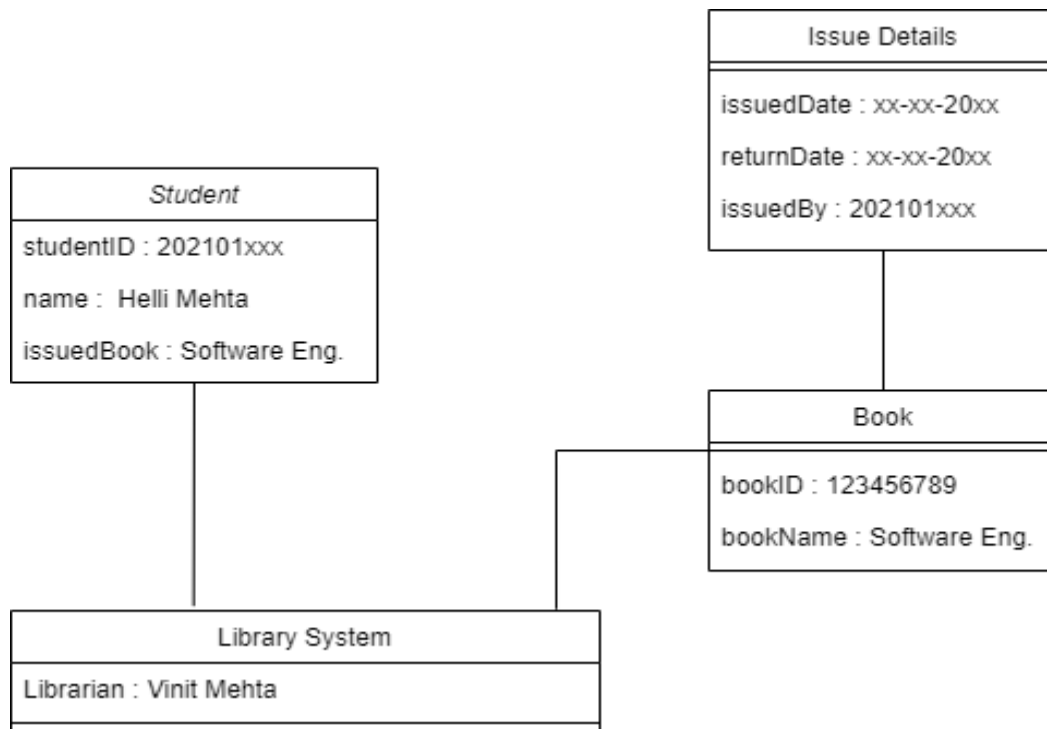Different Flows:
The system alerts the learner that the book cannot be issued at this time if it is not readily available.
The system alerts the librarian if the user is not authenticated.

The sequence diagram for the "issueBook" use case.

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

Issue Details
issuedDate : xx-xx-20xx
returnDate : xx-xx-20xx
issuedBy : 202101xxx

Student
studentID : 202101xxx
name : Helli Mehta
issuedBook : Software Eng.

Book
bookID : 123456789
bookName : Software Eng.

Library System
Librarian : Vinit Mehta

2) To give an exam, an instructor first notifies the students of the exam date and the material to be covered. She then prepares the exam paper (with sample solutions), gets it copied to produce enough copies for the class, and hands it out to students on the designated time and location. The students write their answers to exam questions and hand in their papers to the instructor. The instructor then gives the exam papers to the TAs, along with sample solutions to each question, and gets them to mark it. She then records all marks and returns the papers to the students.

Draw a sequence diagram that represents this process. Make sure to show when each actor is participating in the process. Also, show the operation that is carried out during each interaction, and what its arguments are.