

IT313: Software Engineering

Lab Report-07

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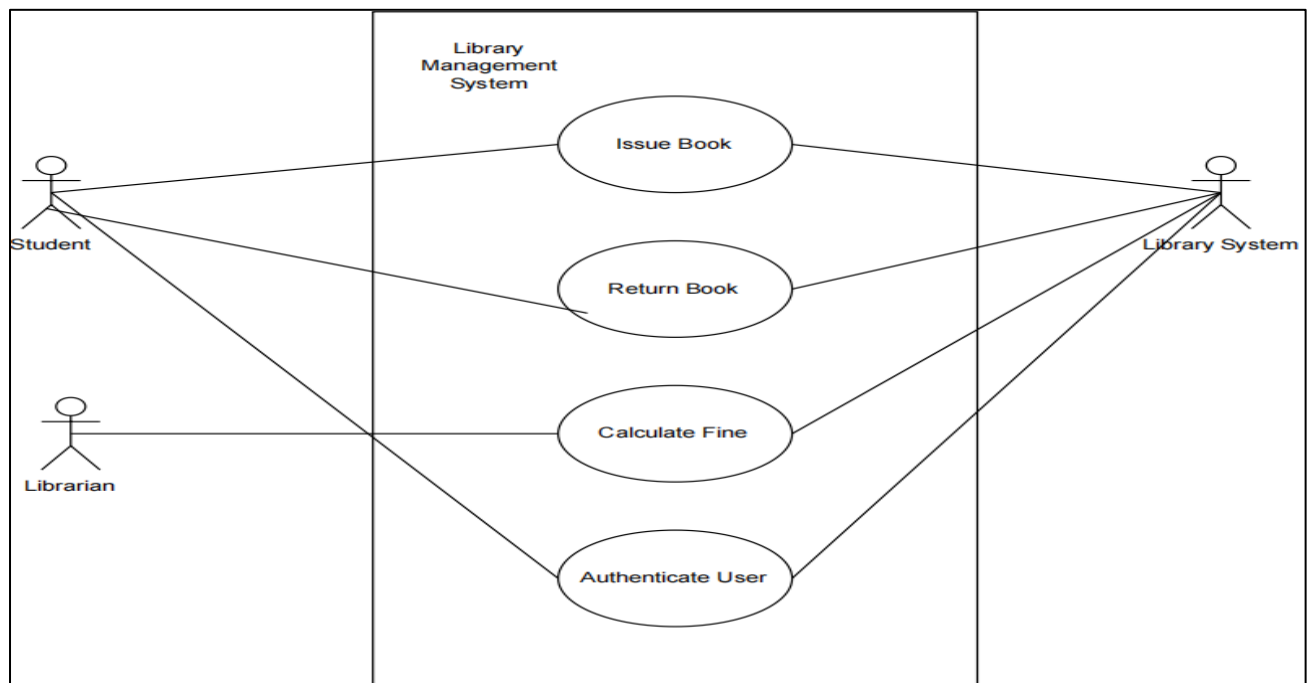
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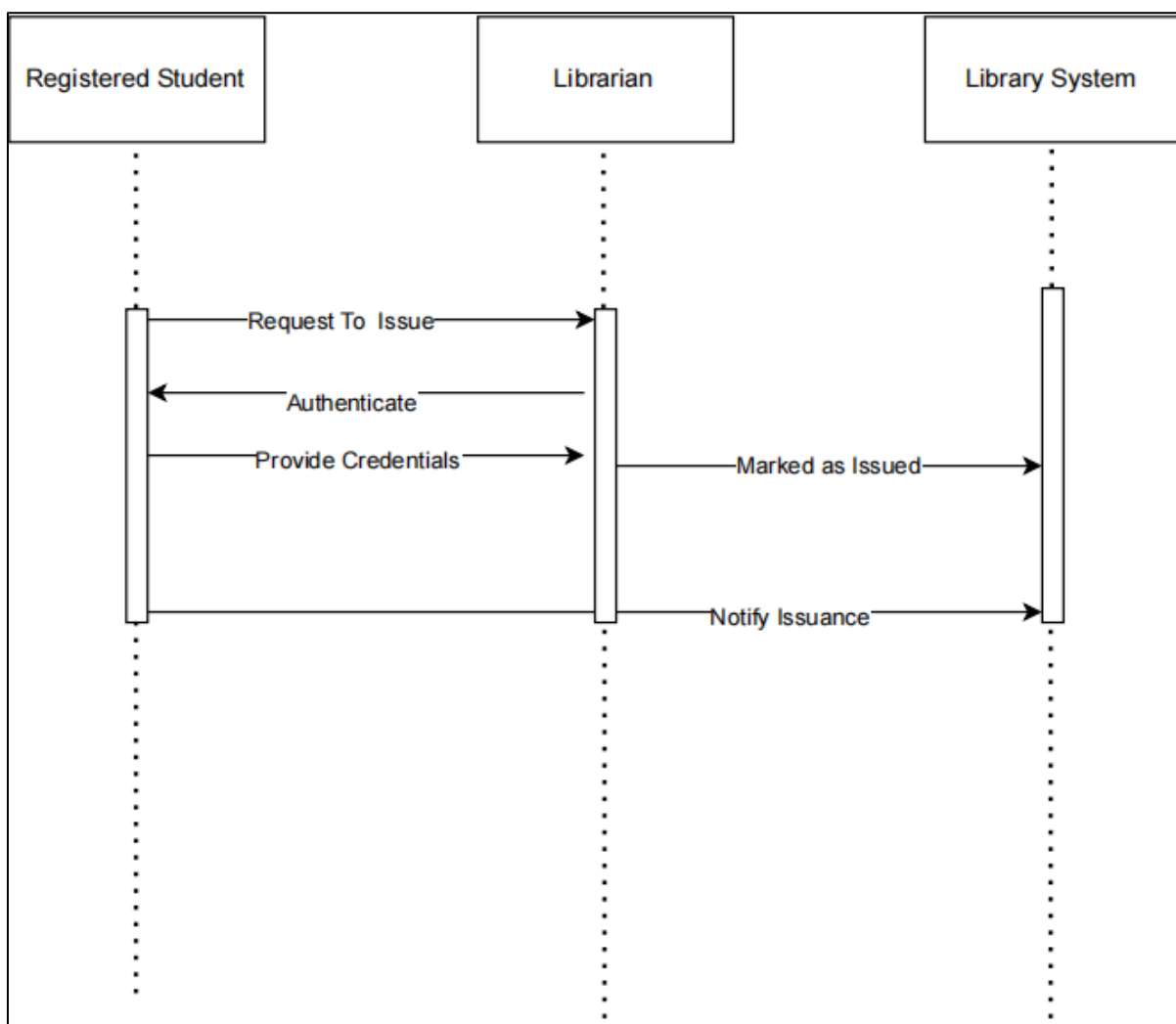
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1. Consider the following piece of text "A library maintains multiple reading materials which include books, journals, and magazines. The books are issued to the registered students at the institute, for a specified period of time. The issued books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

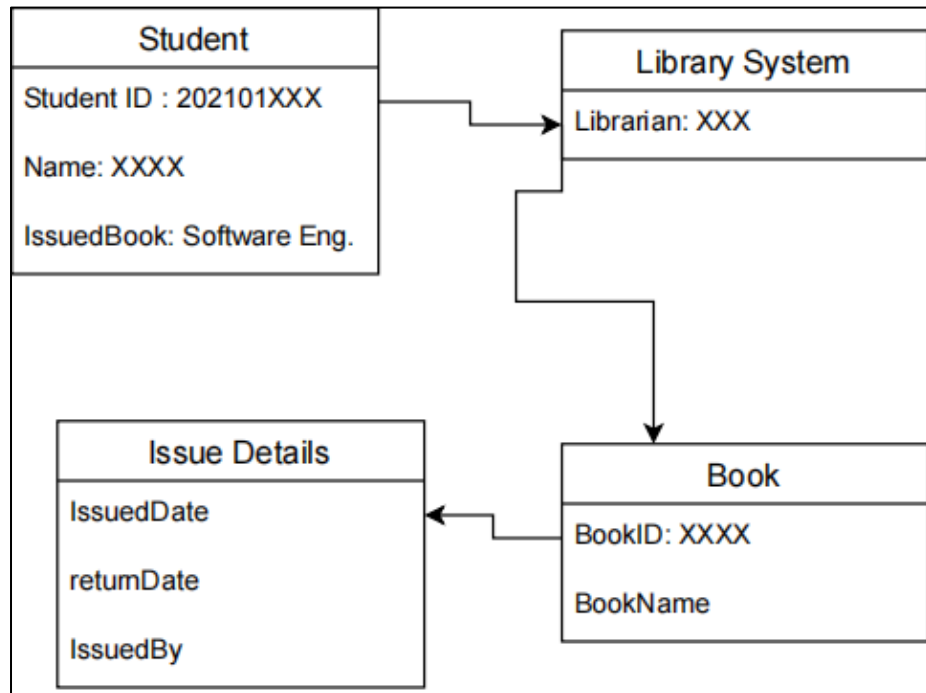
Complete the use case diagram for the above problem text along with use case documentation for "issueBook" use case.



2. The sequence diagram for the "issueBook" use case.
(Hint: Here you need to identify various analysis objects (corresponding to entity, boundary, and control classes), and show their interaction to realize the "issueBook" use case.)



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



Use Case Name: Issue Book

Description: This use case describes the process by which a registered student can issue a book from the library.

Primary Actor: Registered Student

Secondary Actor: Library and Librarian

Preconditions:

- The registered student must be logged in and authenticated by the librarian.
- The book being issued must be available in the library.

Postconditions:

- The book is marked as issued to the student.
- The due date for returning the book is set.
- The student is notified of the successful issuance.

Main Flow:

- The registered student requests to issue a book.

- The system validates the student's authentication status.
- The system checks if the requested book is available.
- If the book is available, the system marks it as issued to the student.
- The system sets the due date for returning the book.
- The system notifies the student and the librarian about successful issuance.

Alternate Flows:

- If the book is not available, the system notifies the student that the book cannot be issued at the moment.
- If the user is not authenticated, the system notifies the librarian.

The Issue Book use case allows a registered student to check out a book from the library, if the book is available and the student is logged in and authenticated. The system will mark the book as issued to the student, set a due date for returning the book, and notify the student and the librarian of the successful issuance. If the book is not available or the student is not authenticated, the system will notify the student or the librarian accordingly.

Q.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 is each actor participating in the process. Also, show the operation that is carried out during each interaction, and what its arguments are.

