IT314 – Software Engineering
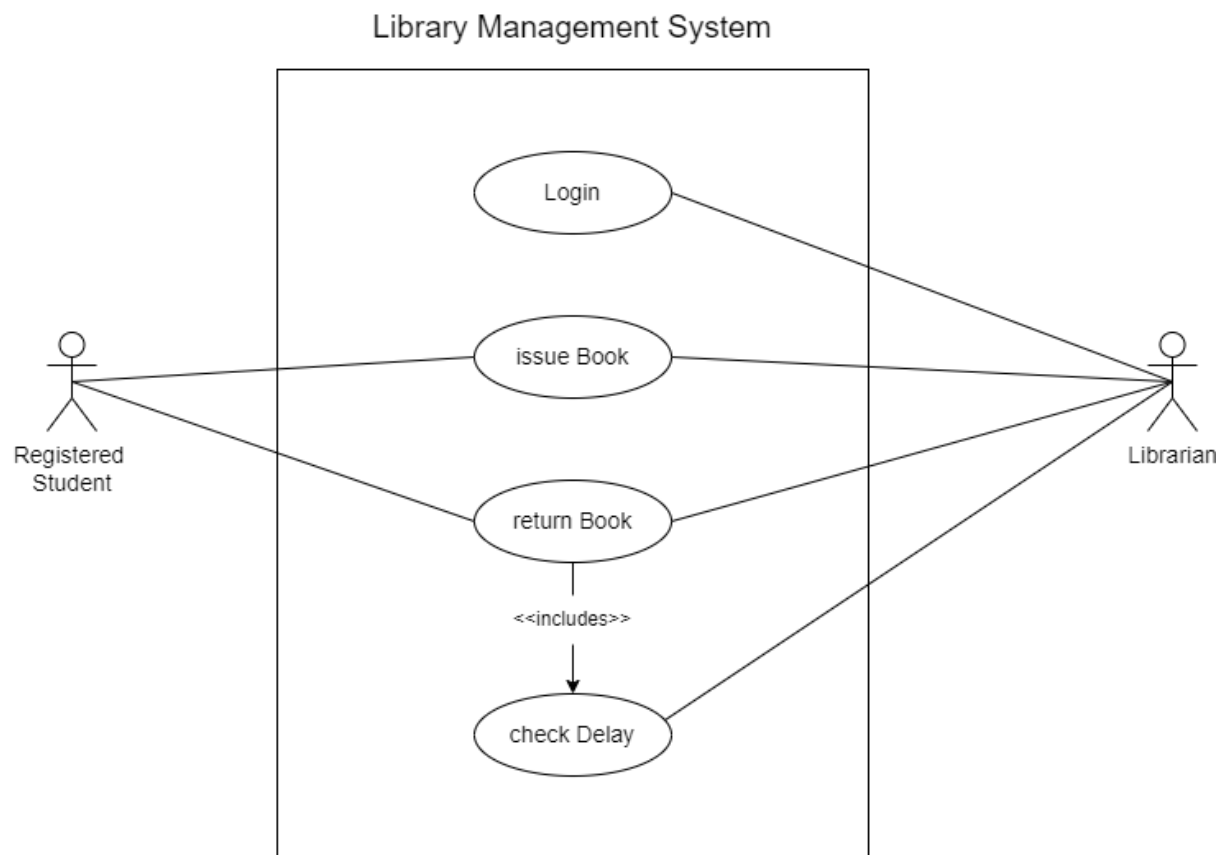
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Group – 1

Lab 7

Question – 01:

Library Management System

Explanation for Issue Book's Use Diagram:

Use Case Name: Issue Book

Actors: Registered Student Librarian

Description:

This use case outlines the interactions between students and librarians through the Library Management System for borrowing and returning library materials.

Preconditions:

- Student is registered with the library.
- Librarian is logged into the Library Management System.

- The student requesting to borrow a book is a registered member of the institute. Books, Magazine, and Journals are available.

Main Flow:

1. The librarian selects the "Issue Book" function in the Library Management System.
2. The system prompts the librarian to enter the student's ID or search for the student by name.
3. The librarian enters the student's ID or searches for the student by name.
4. The system retrieves the student's information, including their name, ID, and borrowing history.
5. The librarian selects the student for whom the book will be issued.
6. The system presents a search interface for finding the book to be issued. The librarian can search by title, author, ISBN, or other book details.
7. The librarian enters the book's information or selects it from the search results.
8. The system checks the availability of the selected book.
9. The librarian selects the due date for the book to be returned by the student.
10. The system records the issuance of the book to the student, associating the book with the student's ID and setting the due date.
11. The librarian confirms the issuance, and the system updates the library database to mark the book as "issued."
12. The system generates an issuance receipt, including details of the student, book, due date, and any applicable fines for late returns.
13. The librarian provides the issuance receipt to the student.

Alternate Flows:

1. If the selected book is not available (e.g., already issued, or unavailable in the library), the librarian will tell that book is not available.
2. If the student's ID or name is not found in the system, the librarian may request the student to provide additional information for identification.
3. If the librarian identifies a discrepancy in the student's information (e.g., incorrect ID), they may ask the student for verification.

Exceptional Flows:

1. In case of a system failure or technical issue, the process should be resumed once the system is operational.
2. If the librarian cannot find the requested book, they should verify the book's availability.

The book's availability status is updated. Issuing transactions are recorded in the LMS.

The student receives the book and the issuance receipt.
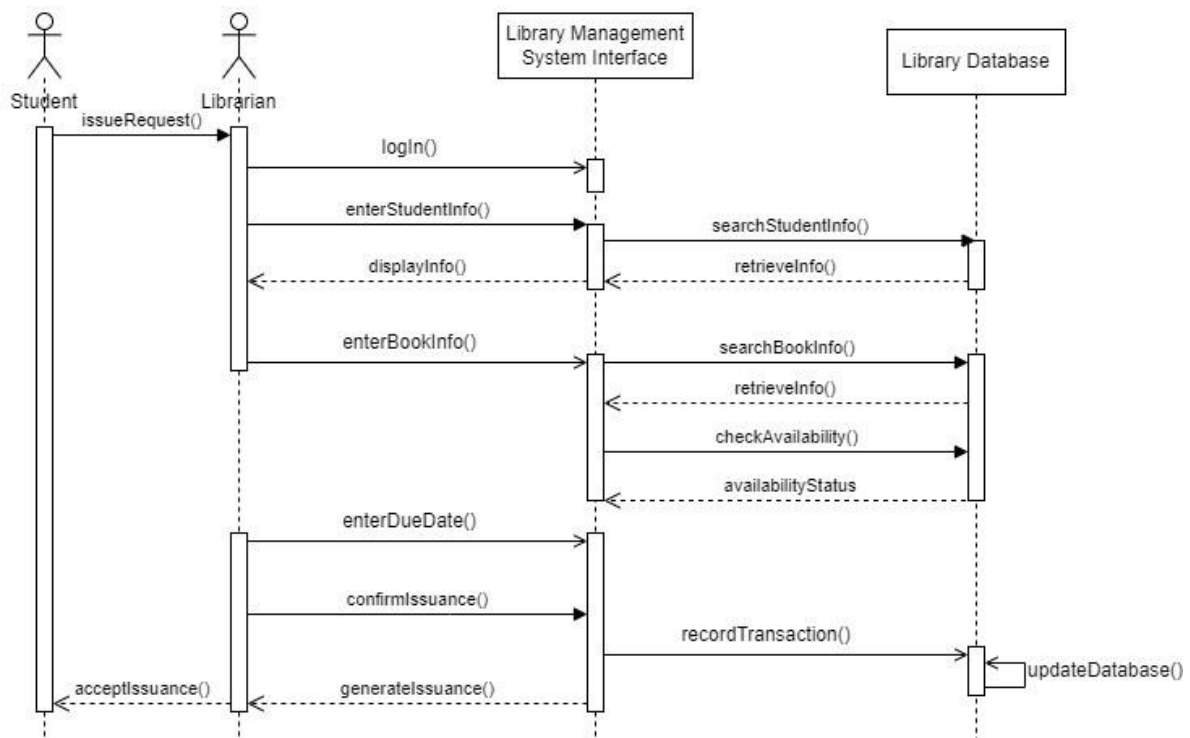
Entity Object:

• Student

• Library

• Book

Boundary Object:

• Library Management System Interface

• Library Database

Control Object:

• Librarian

Sequence Diagram For IssueBook Use Case

Question – 02:

:Instructor V   :Student V   :TA V   :Staff V

setExam(dt,material)

prepare(exam)

makeCopiesOf(exam)

*Distribute(exam)

Solve(exam)

*Submit(exam)

*check(paper,exam,answer)

*return(paper,marks)

*Note(marks)

*GiveOut(marks)