

Lab-7: - Sequence Diagram and Object Diagram

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Q – 1 Library Management System

1. Complete the use case diagram for the above problem text along with use case documentation for “issue Book” use case.

Documentation:

Use Case Name: Issue Book

Description: it represents the process to issue books from the library for registered students only.

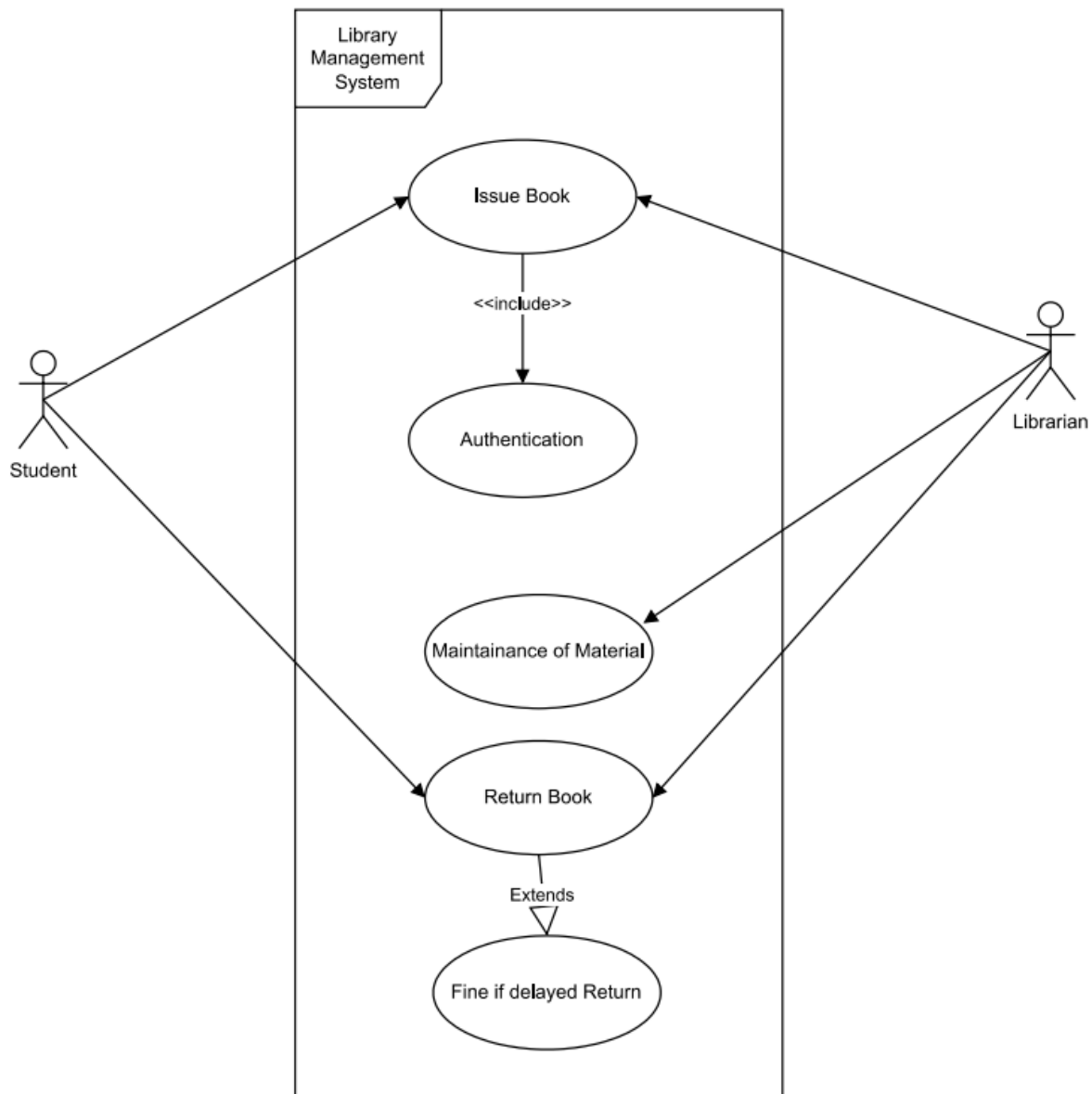
Primary Actor: Student

Secondary Actor: Librarian

Precondition: The student must be registered after that logged in and authenticated by system. The book that the student wants to issue must be available first.

Post conditions: student must be notified about issuance and book must be marked as issued. Due date for return should be updated.

Use Case Diagram:



Main Flow:

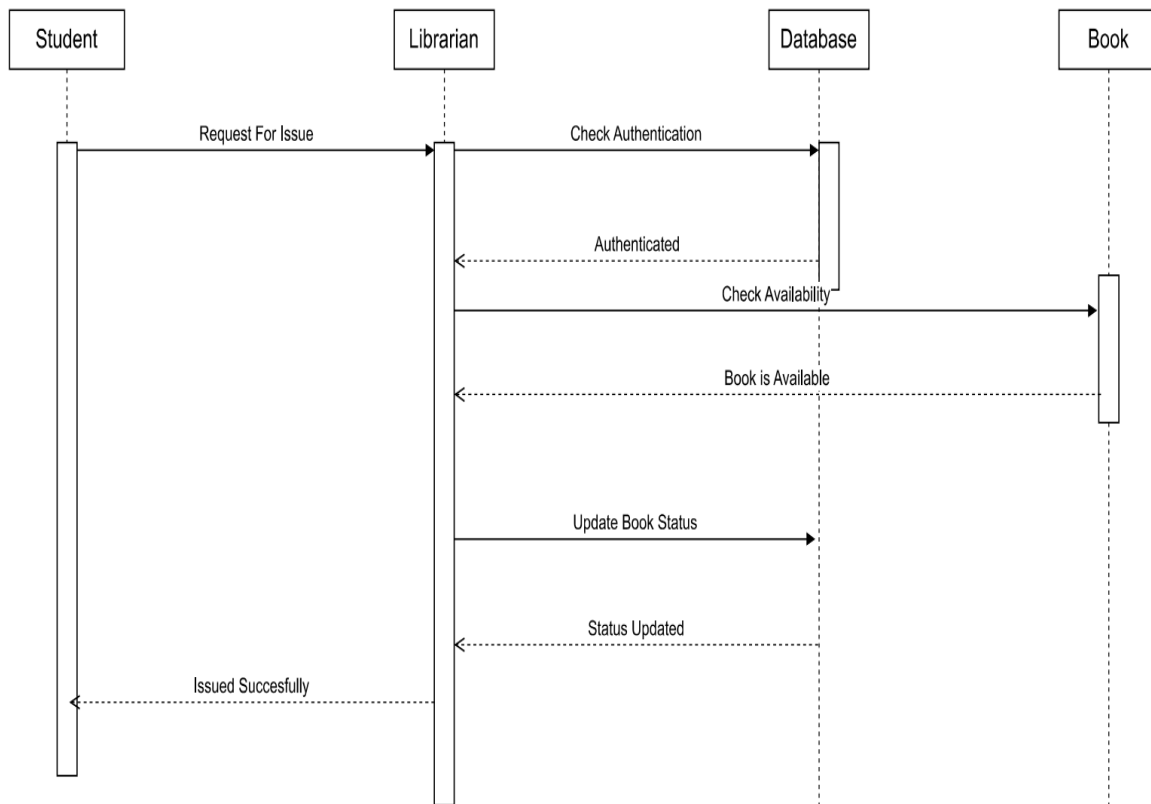
- 1) The registered student requests to issue a book. The system validates the student's authentication status.
- 2) The system checks if the requested book is available. If the book is available, the system marks it as issued to the student. The system sets the due date for returning the book.
- 3)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

Alternate Flows:

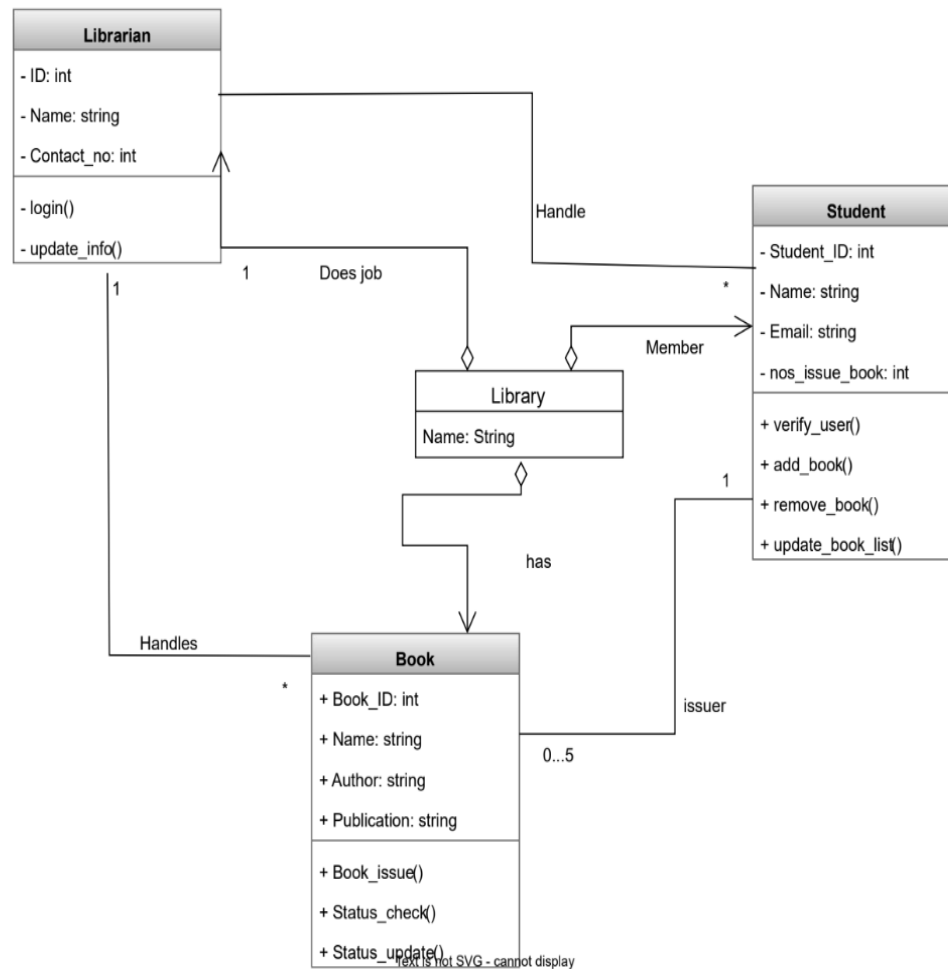
1a) If the user is not authenticated, the system notifies the librarian.

2 a) If the book is not available, the system notifies the student that the book cannot be issued at the moment.

2. The sequence diagram for the “issue Book” use case:



3. Draw the analysis object diagram for the “issue Book” use case analysis.



Question 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.

