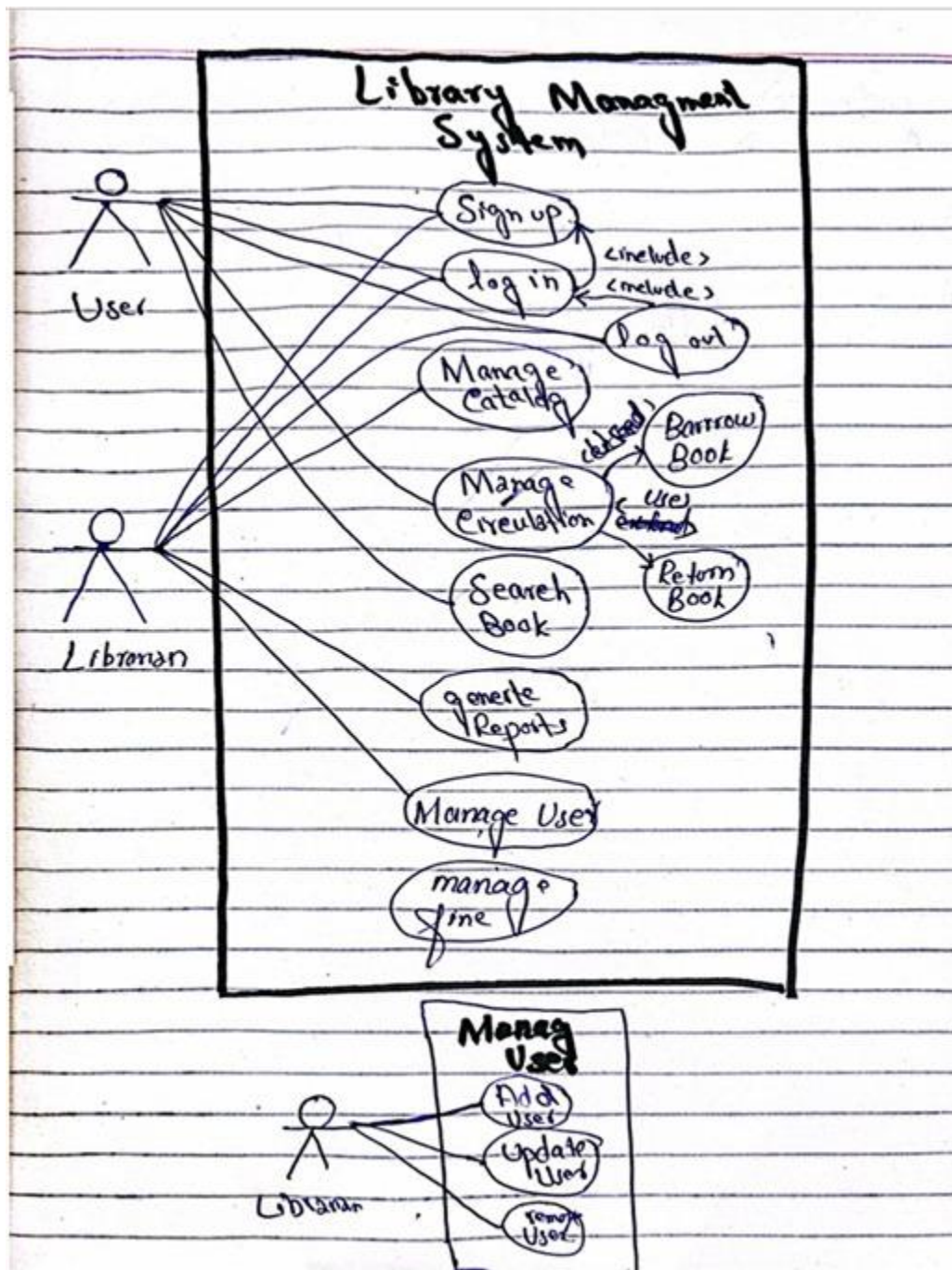


Library Management System

1) UseCase Diagram



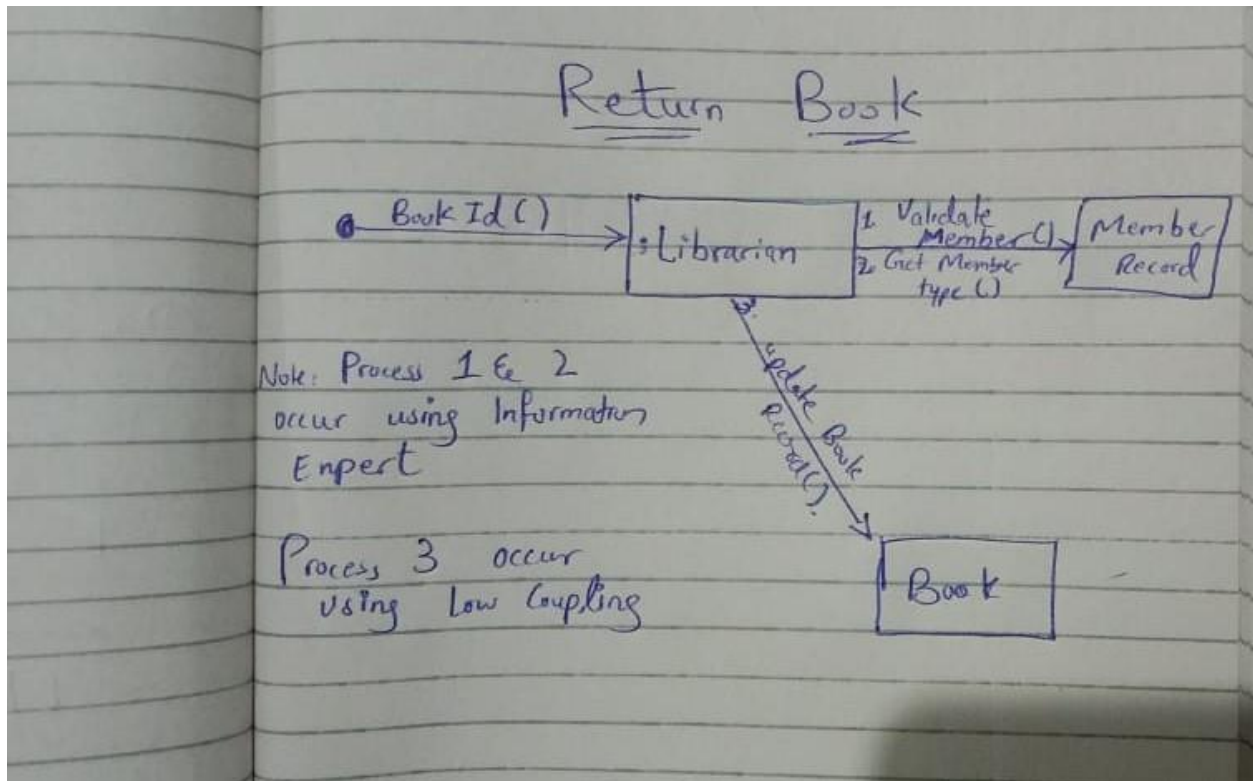
2) Fully dressed Use Case

Use Case: Return Book

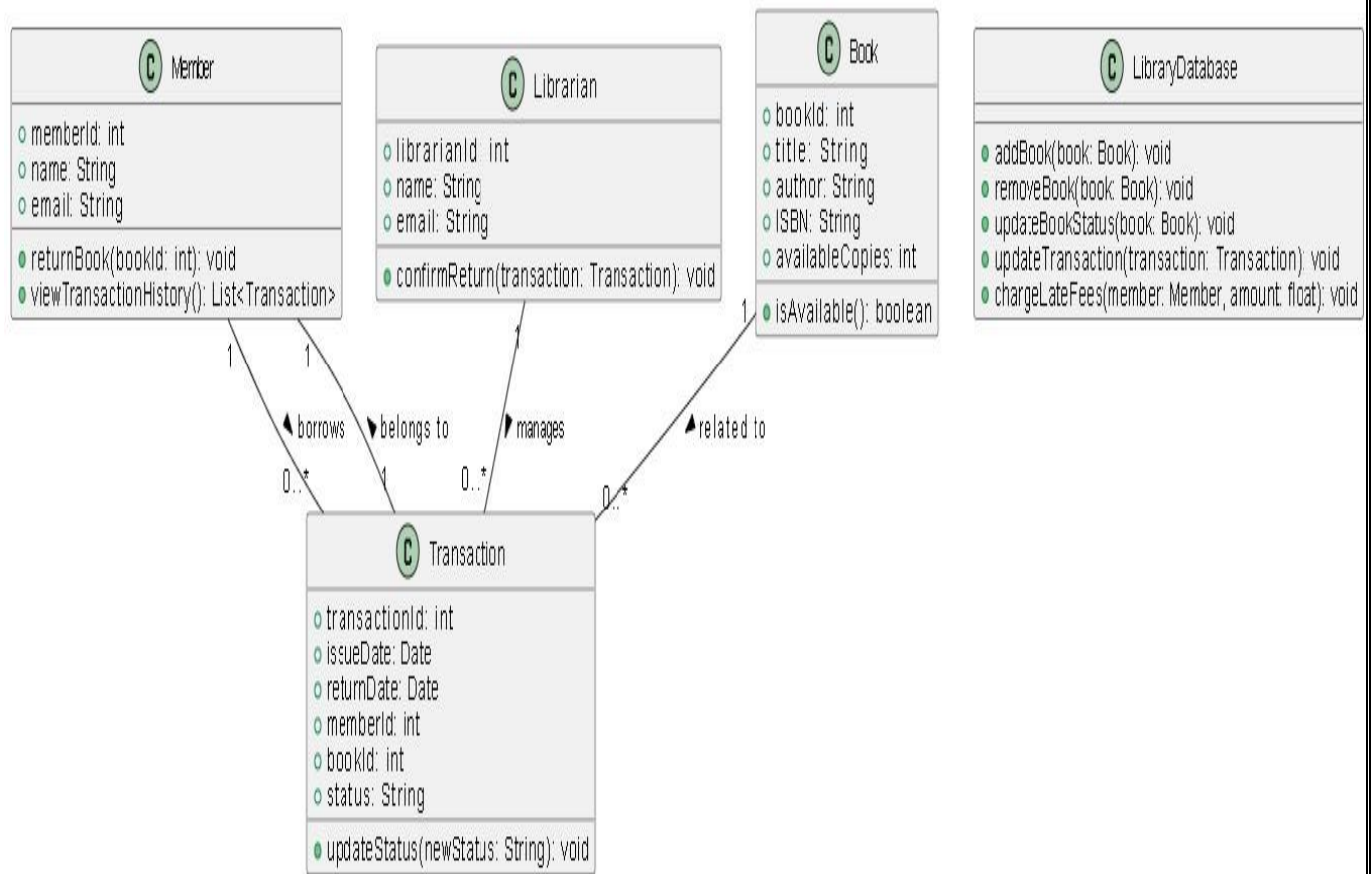
- **Use Case Name:** Return Book
- **Actors:**
 - **Primary Actor:** Member
 - **Secondary Actor:** Librarian
- **Goal in Context:** Enable a library member to successfully return a borrowed book.
- **Preconditions:**
 - The member must be registered in the library system.
 - The member must have borrowed the book they wish to return.
- **Postconditions:**
 - The book is marked as returned in the system.
 - The transaction record is updated to reflect the return.
 - The book's availability is updated to indicate it is available for borrowing.
- **Main Success Scenario (MSS):**
 - The member selects the book they wish to return.
 - The member requests to return the book through the library system.
 - The system verifies the member's borrowing history.
 - The system confirms the book is eligible for return.
 - The librarian is notified of the return request.
 - The librarian confirms the return.
 - The system updates the transaction record to reflect the return.
 - The system updates the book's availability status.
 - The system provides the member with a confirmation receipt for the return.
- **Extensions:**
 - **E1: Book Not Borrowed:**
 - If the book was not borrowed by the member, the system informs the member and cancels the return process.
 - **E2: Late Return:**
 - If the book is returned after the due date, the system may apply late fees.
 - The system informs the member of any fees incurred.
 - **E3: Transaction Failure:**
 - If an error occurs during the return process, the system informs the librarian.
 - The transaction is aborted, and the member is notified.
- **Special Requirements:**
 - The system must handle concurrent return requests efficiently.
 - Maintain data integrity during the return process.
 - Provide clear and user-friendly notifications for all scenarios.
- **Frequency of Use:** Expected to occur multiple times daily as members return books.
- **Open Issues:**
 - What is the policy for lost or damaged books during the return process?

- How will the system handle reservations for books that are returned and have pending requests?

3) Communicaton Diagram



4) Class Diagram



5) System Sequence Diagram

