

Software Architecture Requirement and Design

Assignment-2

Cloud Library

Team - 6

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The basic functionality of this application is that it must allow users to upload the books and perform basic operations on the document. The operations include editing the pages, sharing the books to other users, save their favorite books list and also suggest books to other readers.

So, here is the Use case diagram, Class diagram, Activity and sequential diagrams.

Library application uses RESTful APIs. For example, if any book is unavailable with the library management, they will use the Google Books API to search and lookup for an e-book. The application communicates with the database to search for the available books, add a new book or delete the books. The user can also perform the operations like sharing the book, suggesting a book or save their favorite books.

Functionality of each component:

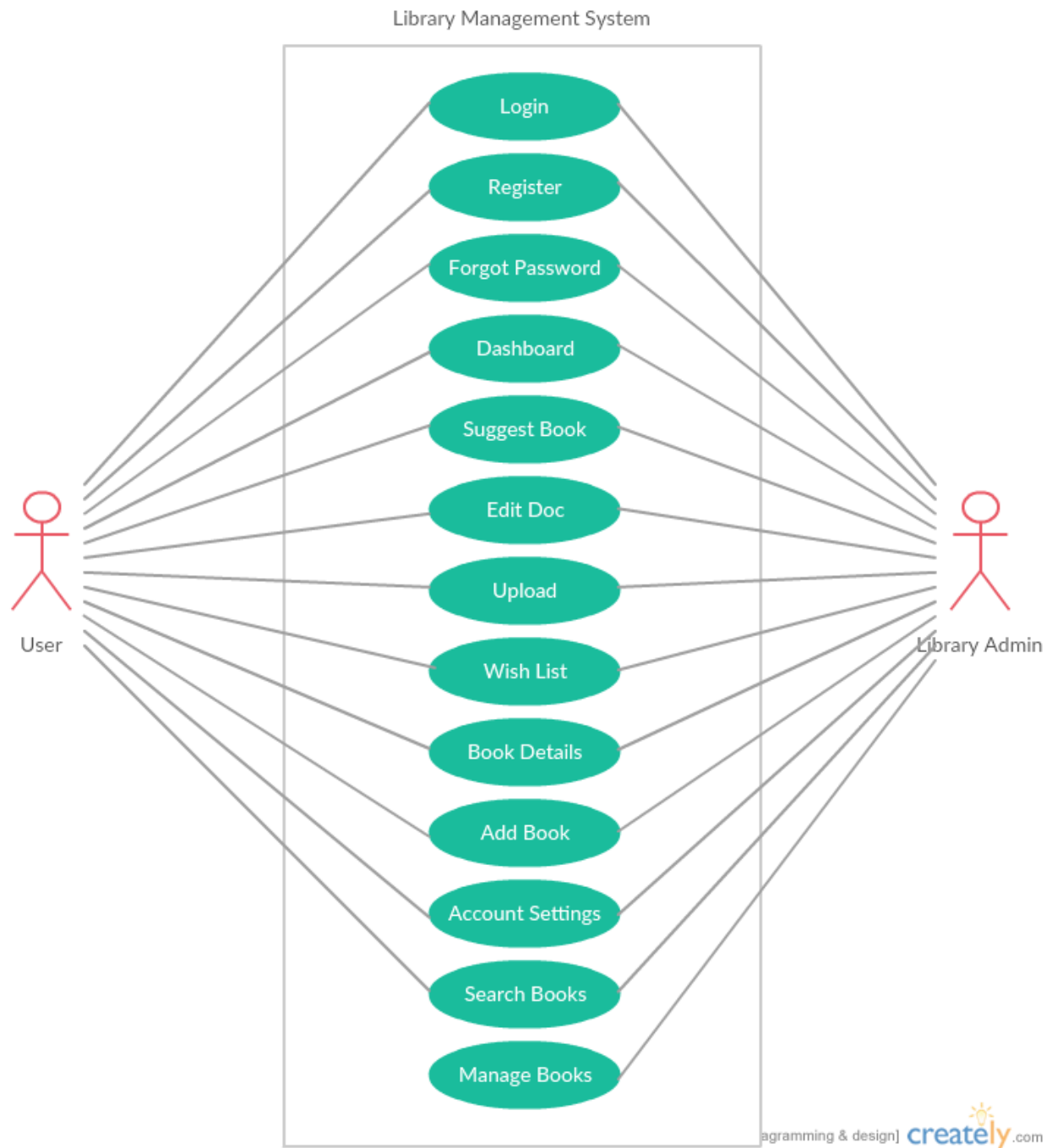
Library Application- This is a user friendly application. Here the user can do the following operations

- Suggest a book to other user
- Share a book
- Save their favorite book list
- Edit the document

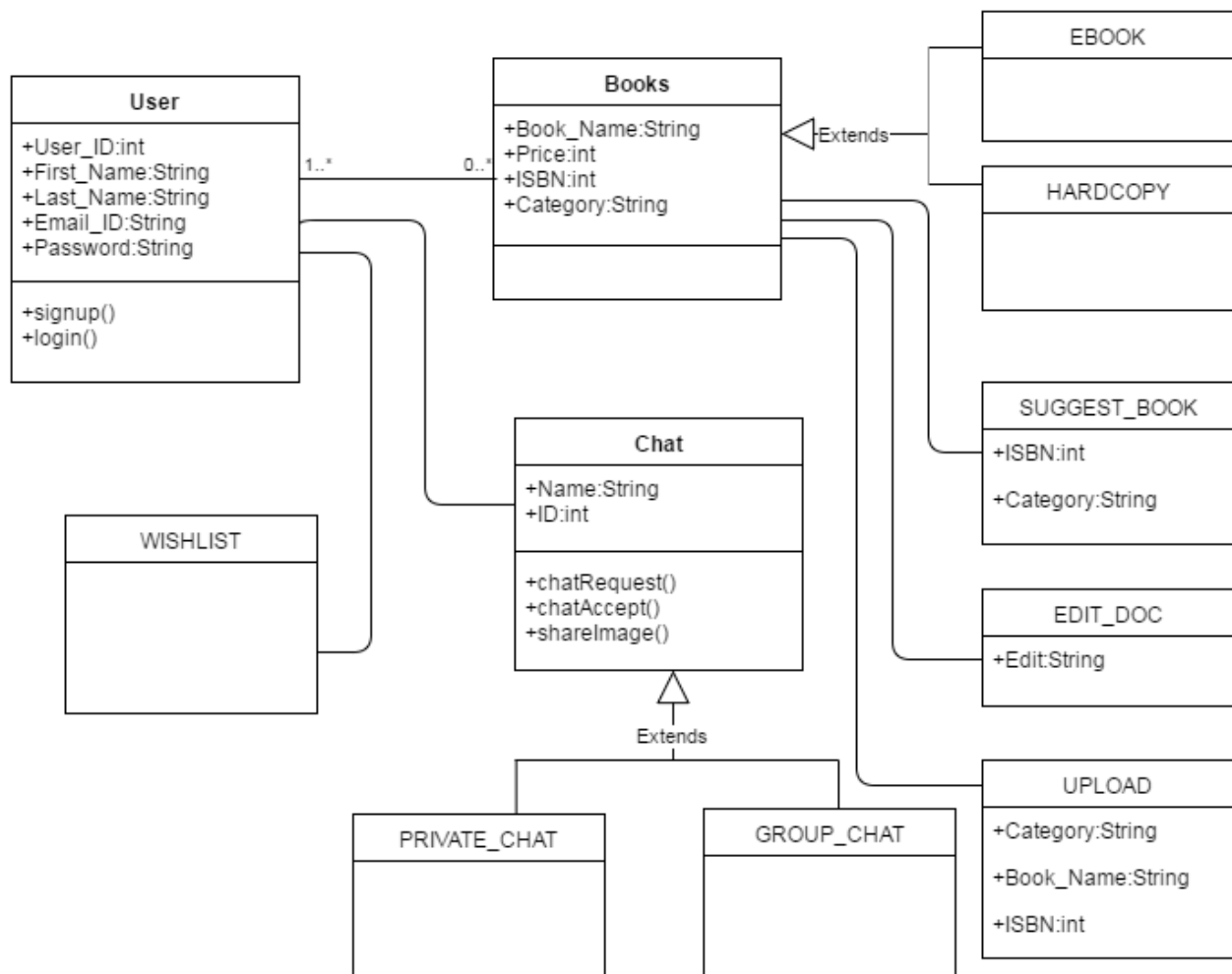
Database- Storage and the retrieval of books can be done in and from the database. All the user information can also be stored.

RESTful API- It is connected to the database. When the user requests for certain data/book, it can be accessed from the database using RESTful API.

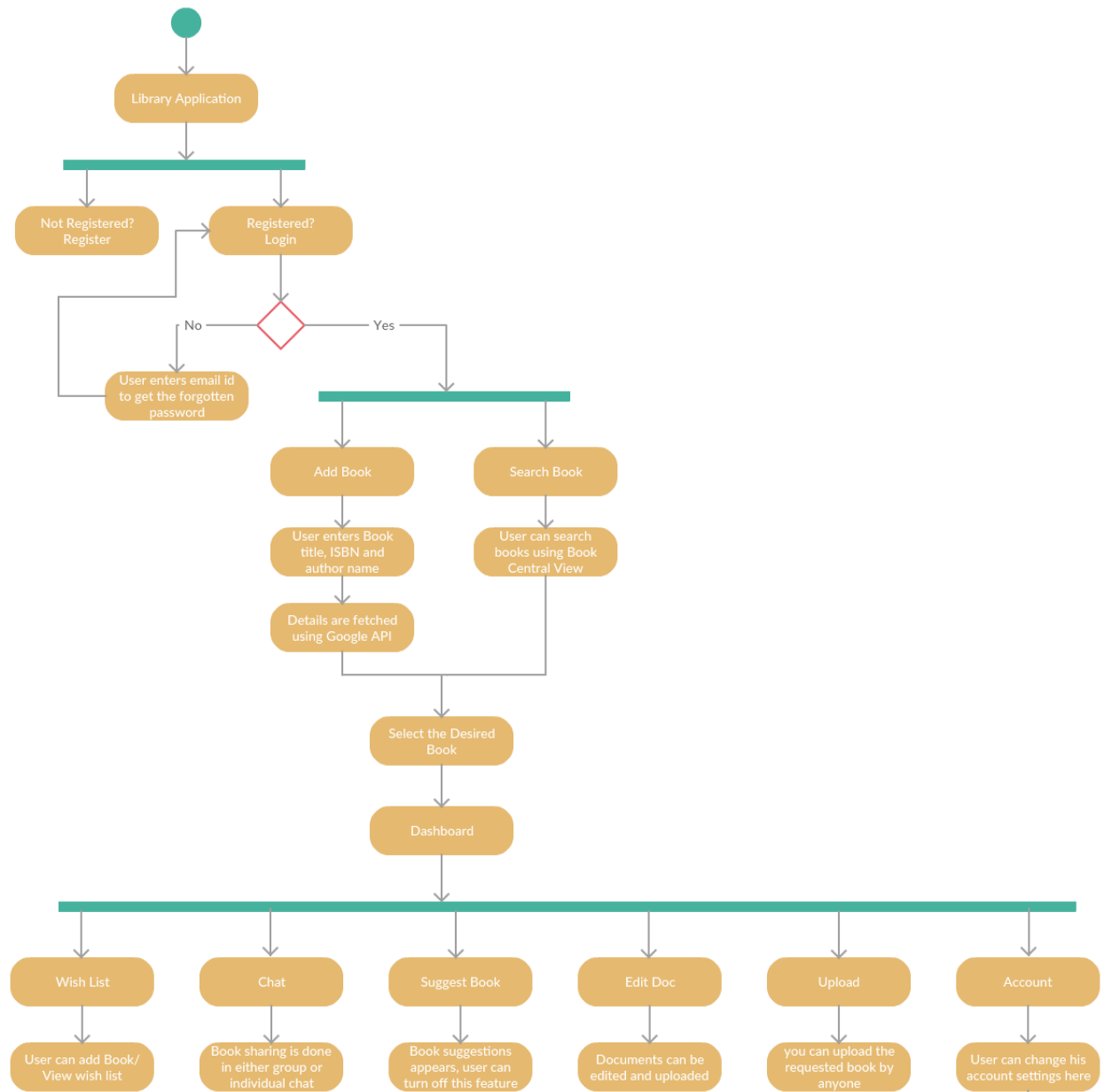
Use Case Diagram:



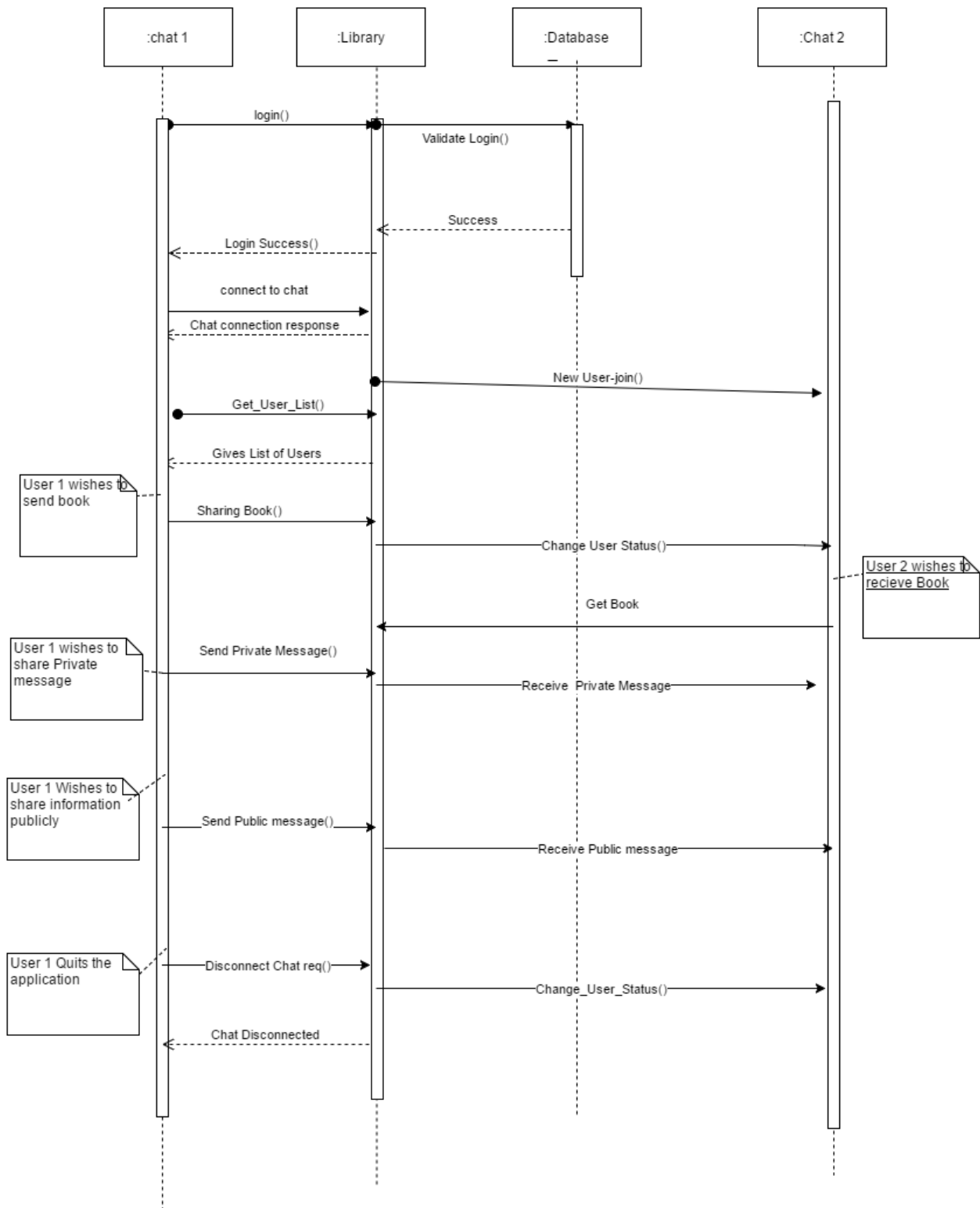
Class Diagram:

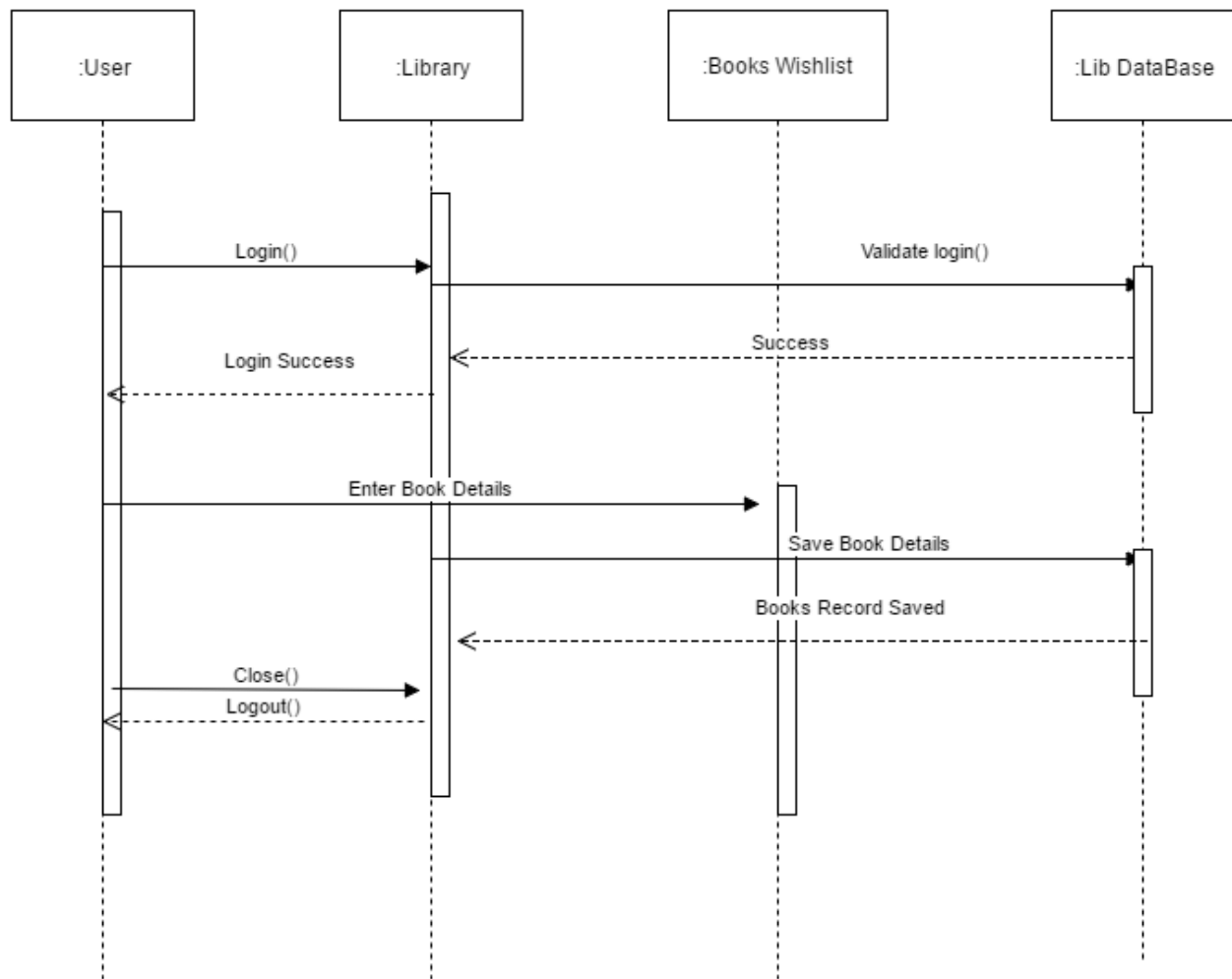


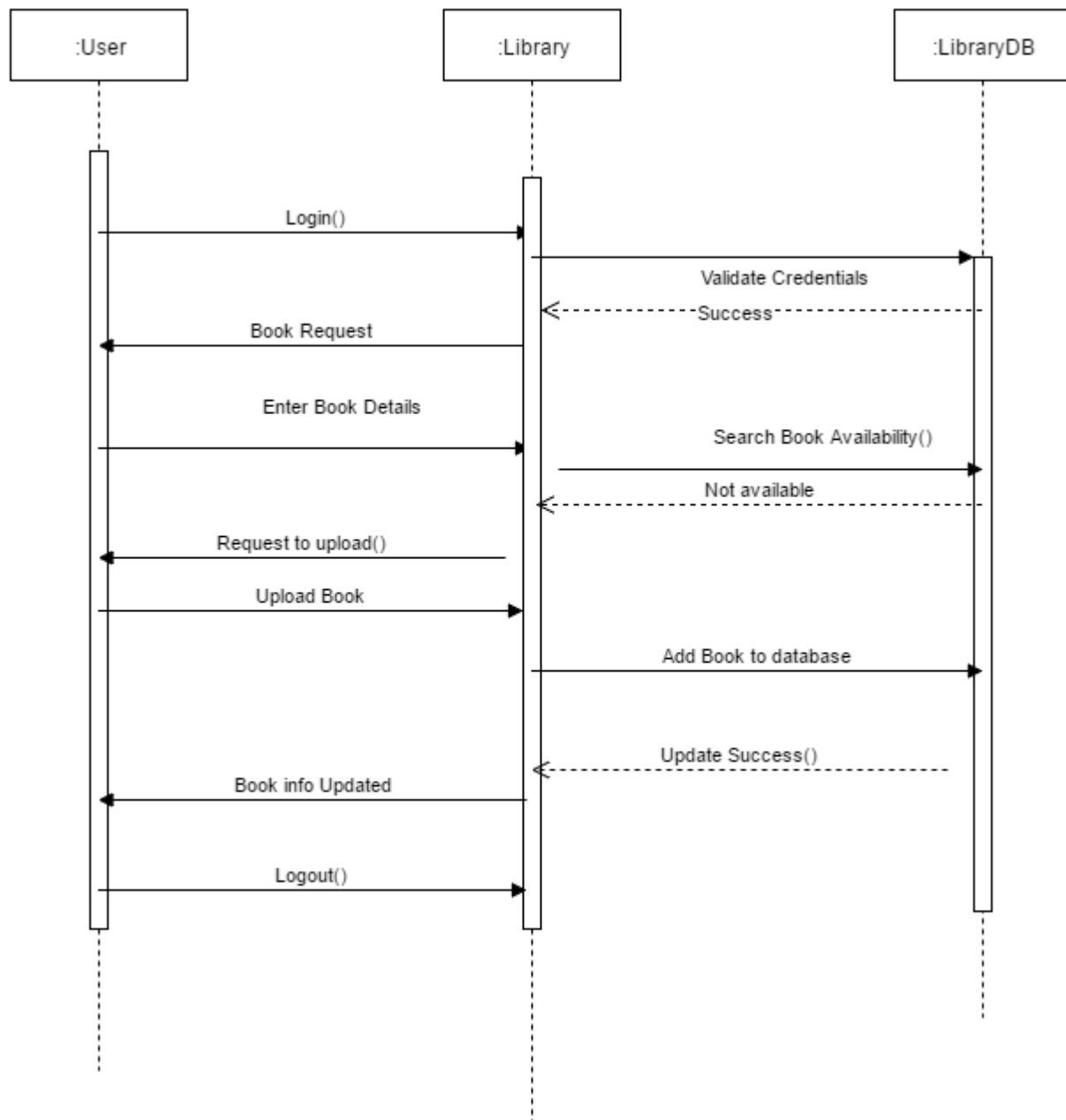
Activity Diagram:



Sequential Diagrams:







The Design pattern suitable for cloud library use case is the **Façade Design Pattern**.

It simplifies the interface for a sub system. In the case of cloud library use case, Façade pattern gives a virtual layer between the interface on top and the API implementation at bottom. Façade gives a comprehensive view of what the API should be and it is the view from the perspective of the app developer and end user. As, we had divided the architecture into presentation layer which depicts the view of the system, Application layer which provides the required REST services and Data Access layer which supports networking, data storage etc. Thus, Façade Design pattern will be suitable for the application.