

# Experiment 3

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## Library Management System

### **Problem Statement:**

- The case study titled Library Management System is library management software for the purpose of monitoring and controlling the transactions (of books) in a library.
- This case study on the library management system gives us the complete information about the library and the daily transactions done in a Library.
- Maintaining the record of new s and retrieve the details of books available in the library (focusing on operations in a library like adding new member, new books, and up new information, searching books and members, facility to borrow and return books).
- An attractive user interface, combined with strong searching, insertion and reporting capabilities.
- Report generation facility of library system (also to generate/print hard copy).

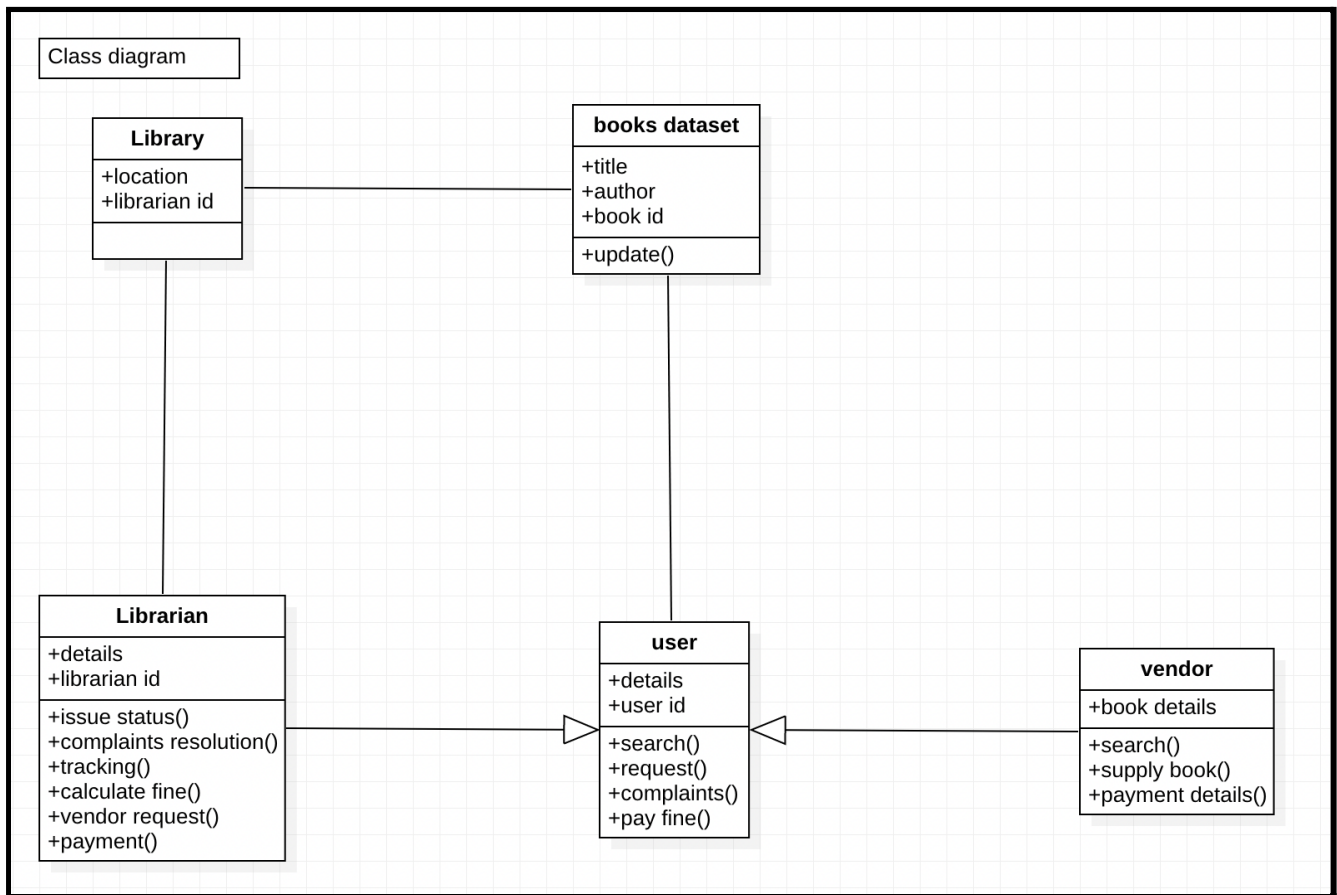
The following are the brief description on the functions achieved through this case study:

**Librarian:** To maintain and update the records and also to cater the needs of the users.

**Reader:** Need books to read and also places various requests to the librarian.

**Vendor:** To provide and meet the requirement of the prescribed books.

## Class Diagram



## State Chart Diagram

### Transitions:

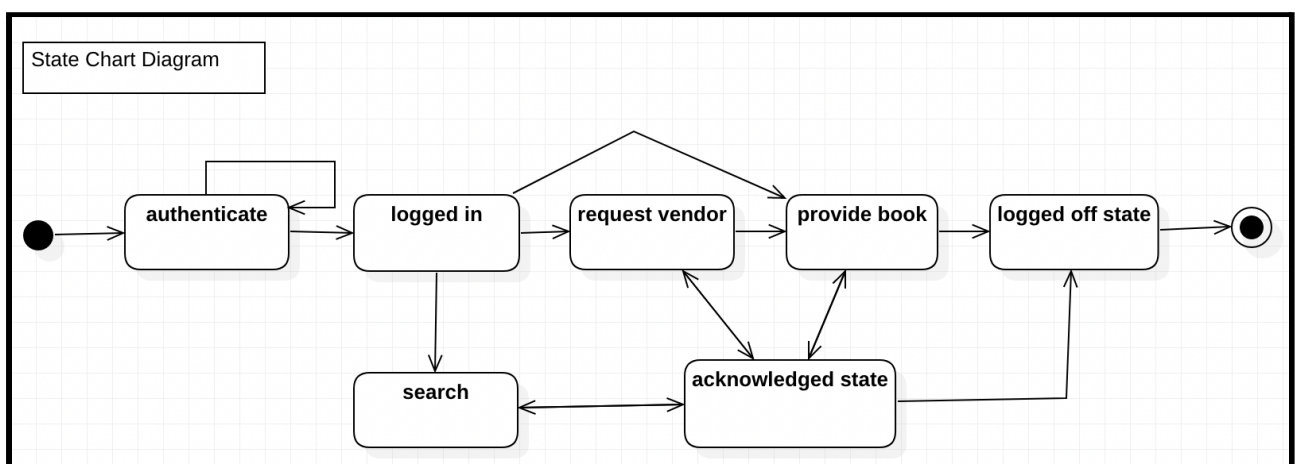
Authenticate ---> Logged in

Logged in ---> Search <---> Acknowledgement

Logged in ---> Request Vendor <---> Provide Book <---> Acknowledgement

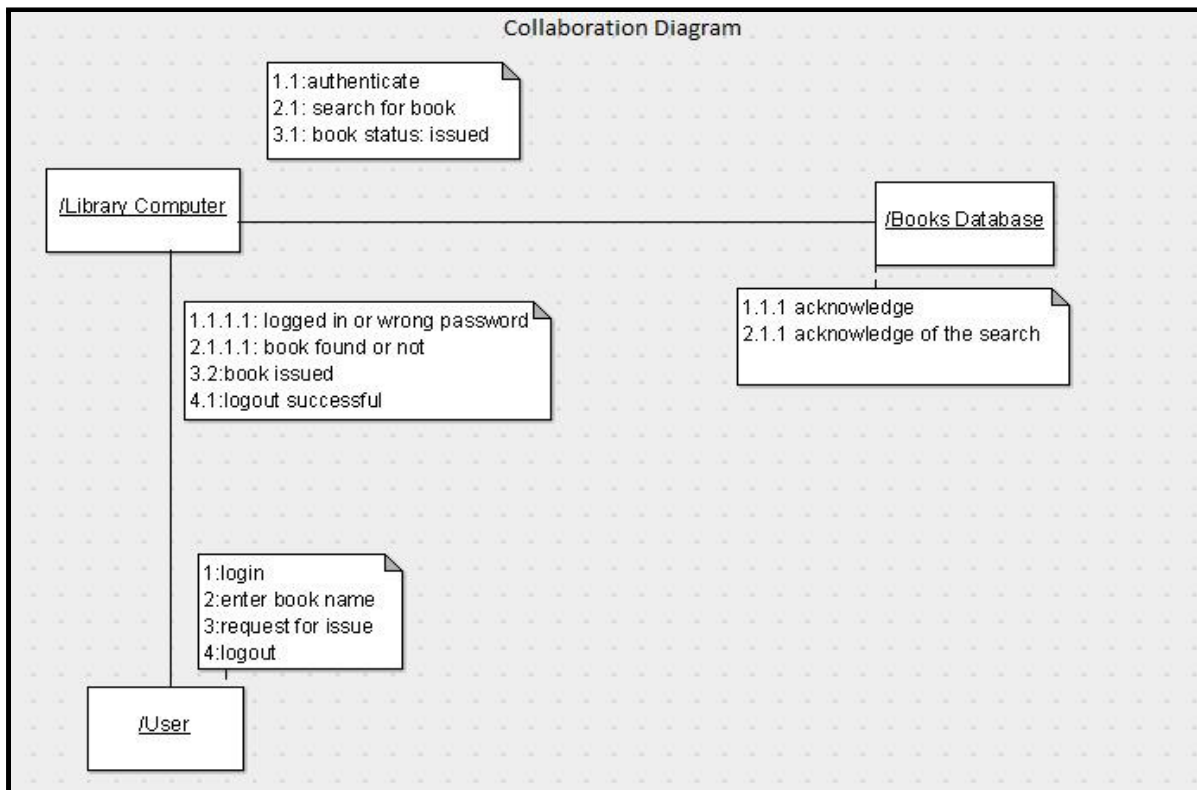
Logged in ---> Provide Book <---> Acknowledgement

Acknowledgement ---> Logged off



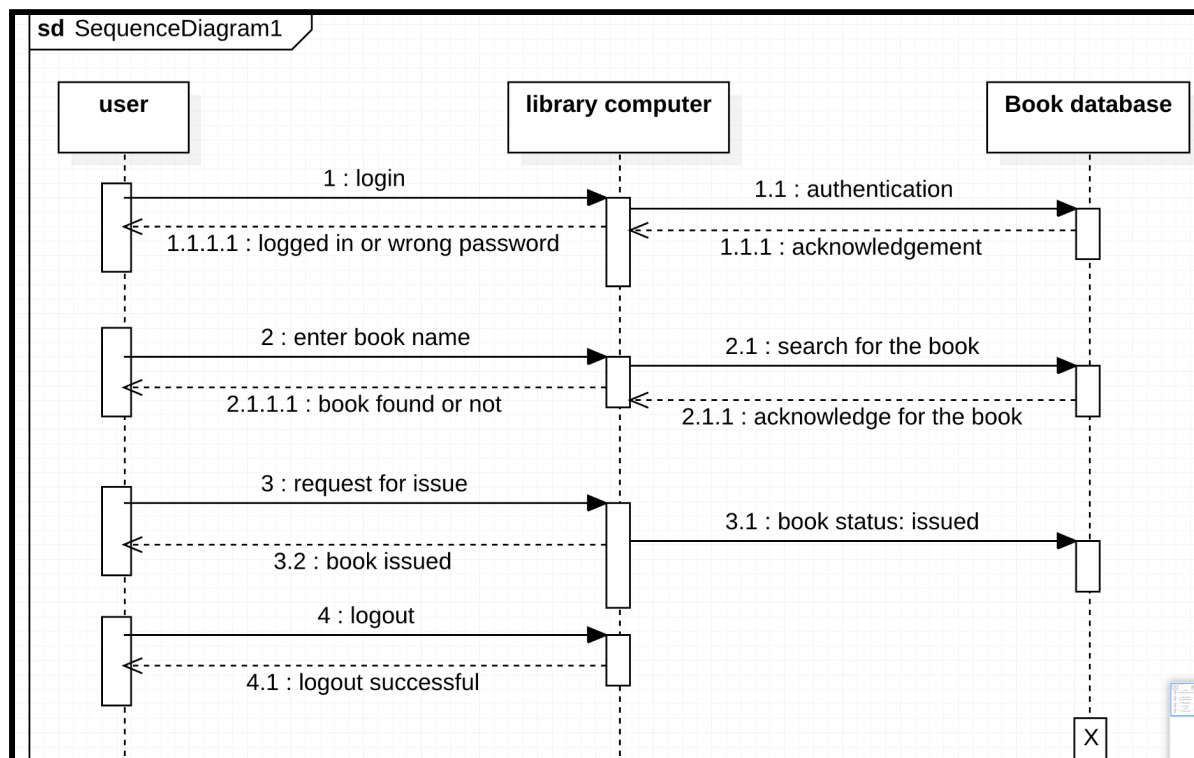
## Collaboration Diagram

Collaboration Diagram for searching for a book and issuing it as per the request by the user from the librarian:

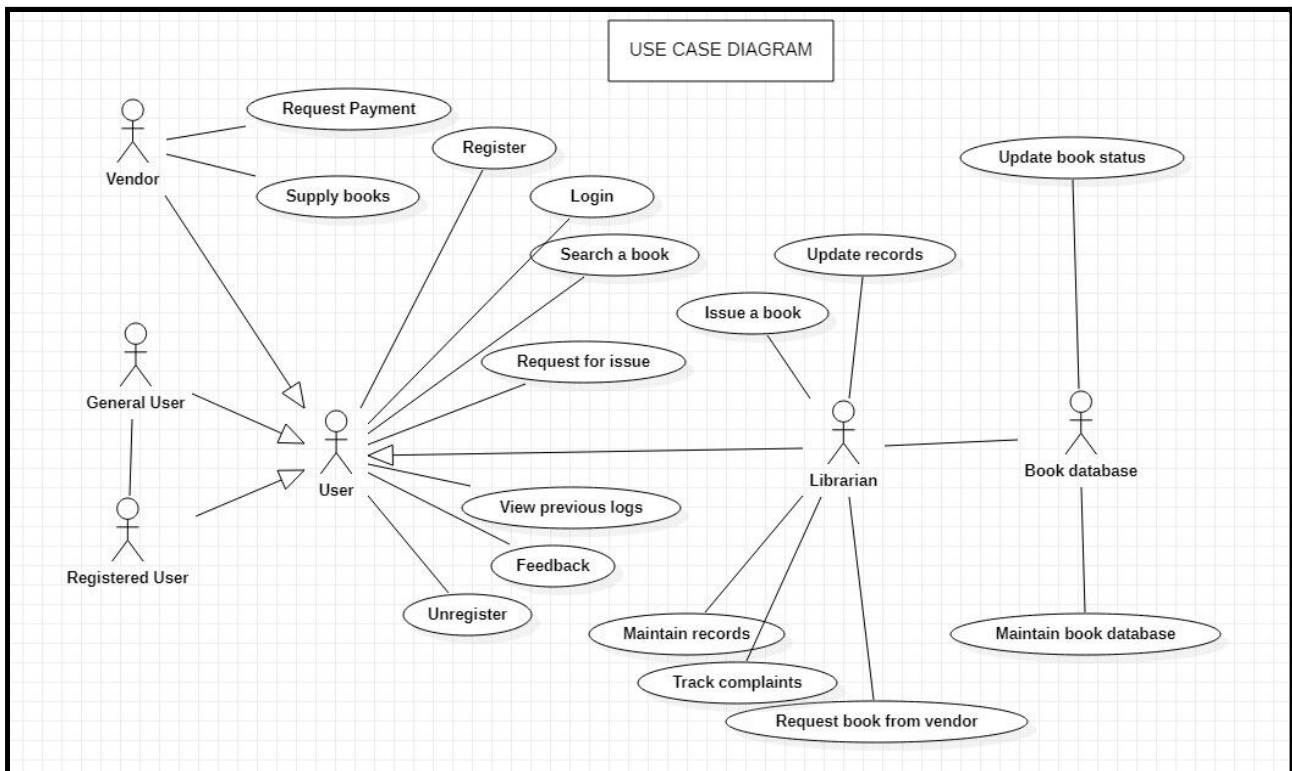


## Sequence Diagram

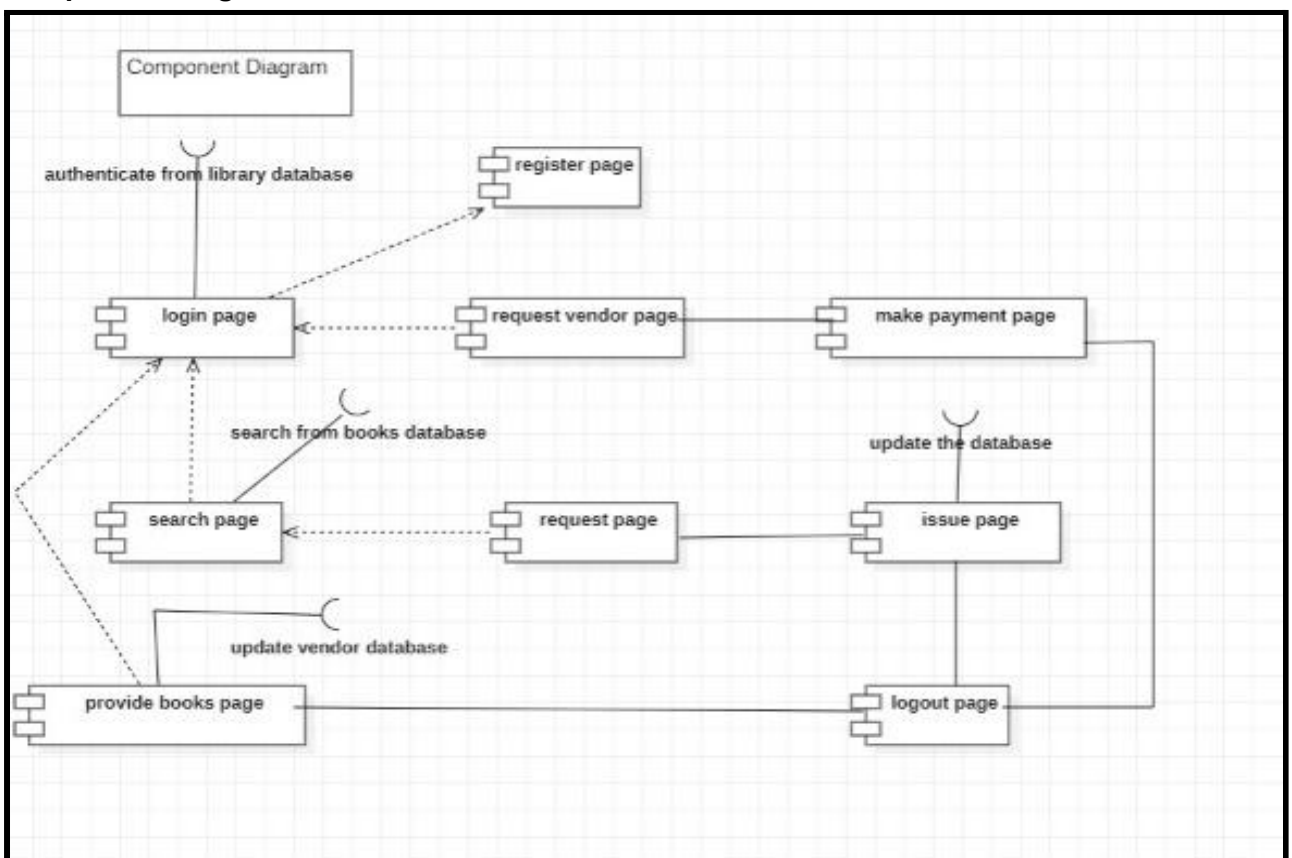
Sequence diagram for searching a book and issuing it as per the request by the user from the librarian:



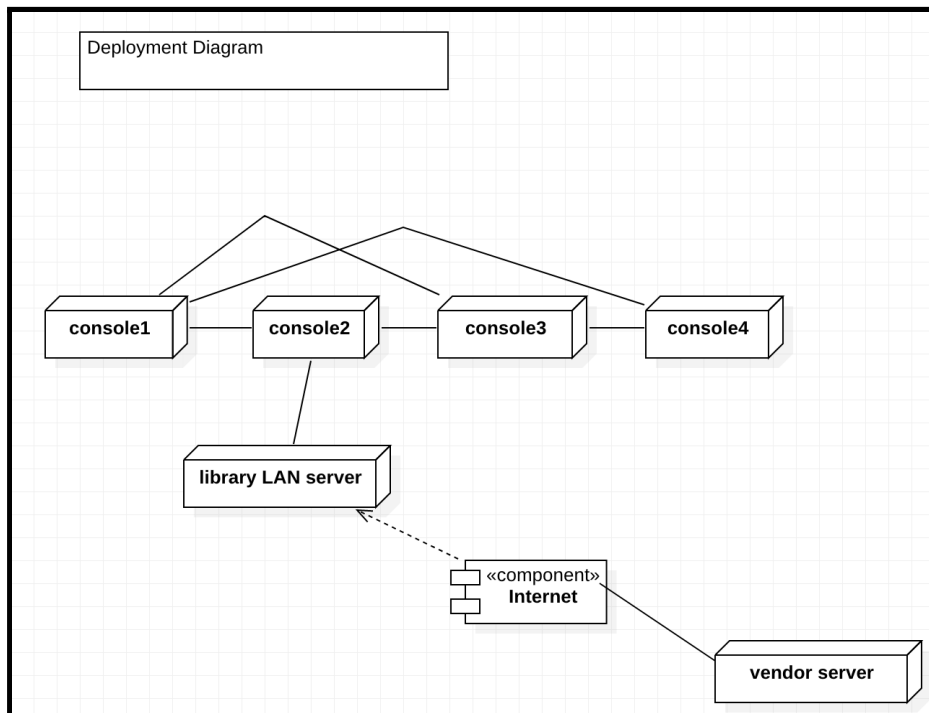
## Use-case Diagram



## Component Diagram



## Deployment Diagram



## Activity Diagram

### Activities:

- User Login and Authentication
- Search book operation for Reader
- Acknowledge and Issue books to the users by the Librarian
- Provide books requested by the Librarian from the Vendor
- Bill payment from the Librarian to the Vendor
- Status of the books updated in the Books Database

