Software Engineering Project

LIBRARY MANAGEMENT SYSTEM

Report By

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Abstract:

In this document, we are going to discuss how the Library Management System works and what are the various functionalities, and modulus that are used. Library means where users can find all the books at one place. It is a web-based application it can be accessed by any were but users have to login or register. Users send the requests server process then it extracts the data from the database and sends the result back to the client. Users can search for books and renewal books online. They can recommend new books by just sending messages to the librarian from anywhere in the college. They can view the issue and return dates of any book and due they have to pay. This system generates reports that can be used in analysing the library performance. Thus, the management can take appropriate steps to improve the facilities.

Introduction:

Software design involves three technical activities - design, coding, implementation, and testing that are required to build and verify the software. Firstly, find out all the requirements that are gathered from the user and then design in the form of flow chart UML diagrams these make the process easy to build the next level. The whole process is all about is User/admin login server verifying whether the details are present in a database or not it validates. Users can search the book by author names, topics, and subjects' users can add to the book or delete. Admin can modify the database add/delete/update these operations can be done. If the user adds a book the issue date will be produced if the book is not returned on the due then a penalty will be added he needs to pay the bill these are included in the project.

Literature review.

Various problems of physical system are described below: -

- If one is not very careful then there is a possibility of issuing more than one book to a user.
- There is a possibility of issuing a book to a user, whose membership is not there.
- When a user requests for a book, one has to physically check for the presence of a book in the library
- Answering management query is a time-consuming process.
- Daily keeping a manual record of changes taking place in the library such as book being issued, book being returned etc can become cumbersome if the library size is bigger.

- Avoid the manual work.

These are most concerned issues.

System Requirements:

Hardware Requirements:
There are various hardware components with which the machine is required to interact. To be able to run the system, the minimum required requirements of the hardware for this system are:

- Keyboard,Mouse
- PC with 250 GB hard disk
- Ram with memory 256MB or more

Software Requirements:
In order to perform various different functions, this software needs to interact with various other software's. So, there are certain software interface requirements that need to be fulfilled which are listed as follows: -

- Front End: HTML,CSS,PHP,JavaScript
- Database MySQL
- Server XAMPP

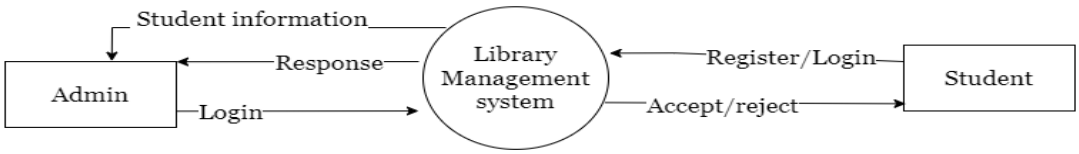
Proposed System

The LIBRARY MANAGEMENT SYSTEM is a software application which avoids more manual hours in taking the book, that need to spend in record keeping and generating reports. Maintaining of user details is complex in manual system in terms of agreements, royalty and activities. This all have to be maintained in ledgers or books. Co-coordinators needs to verify each record for small information also.

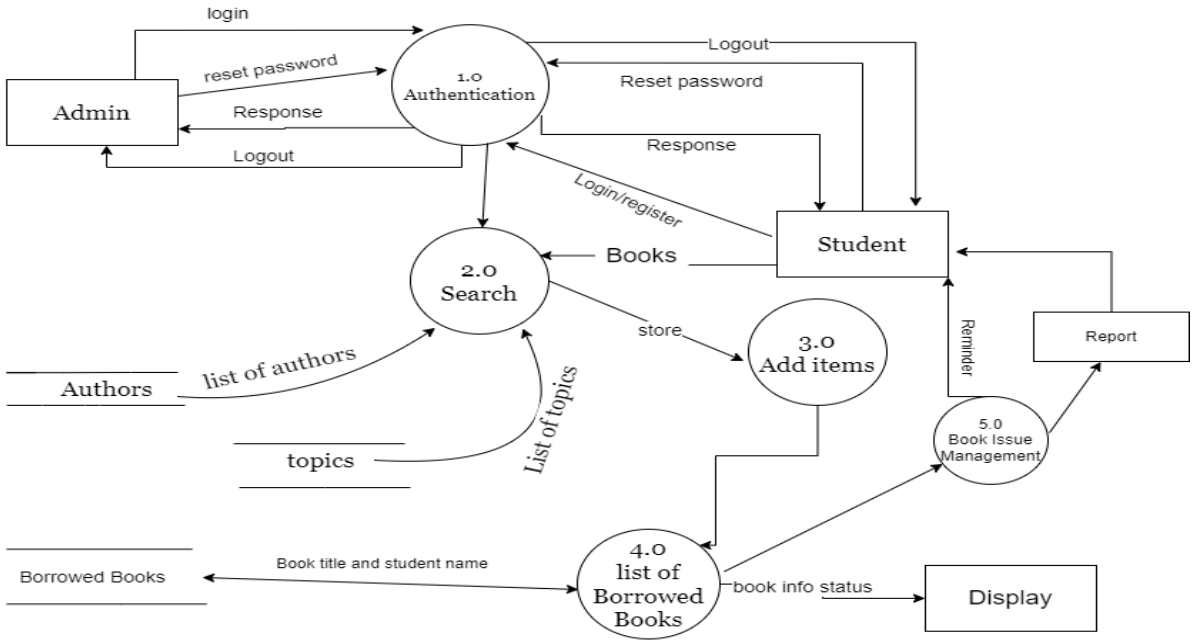
Easy search of book in the online library.

- Easy search of book in the online library.
- Avoid the manual work.
- User need not go to the library for Issue any kind of book, he can renewal the book online.

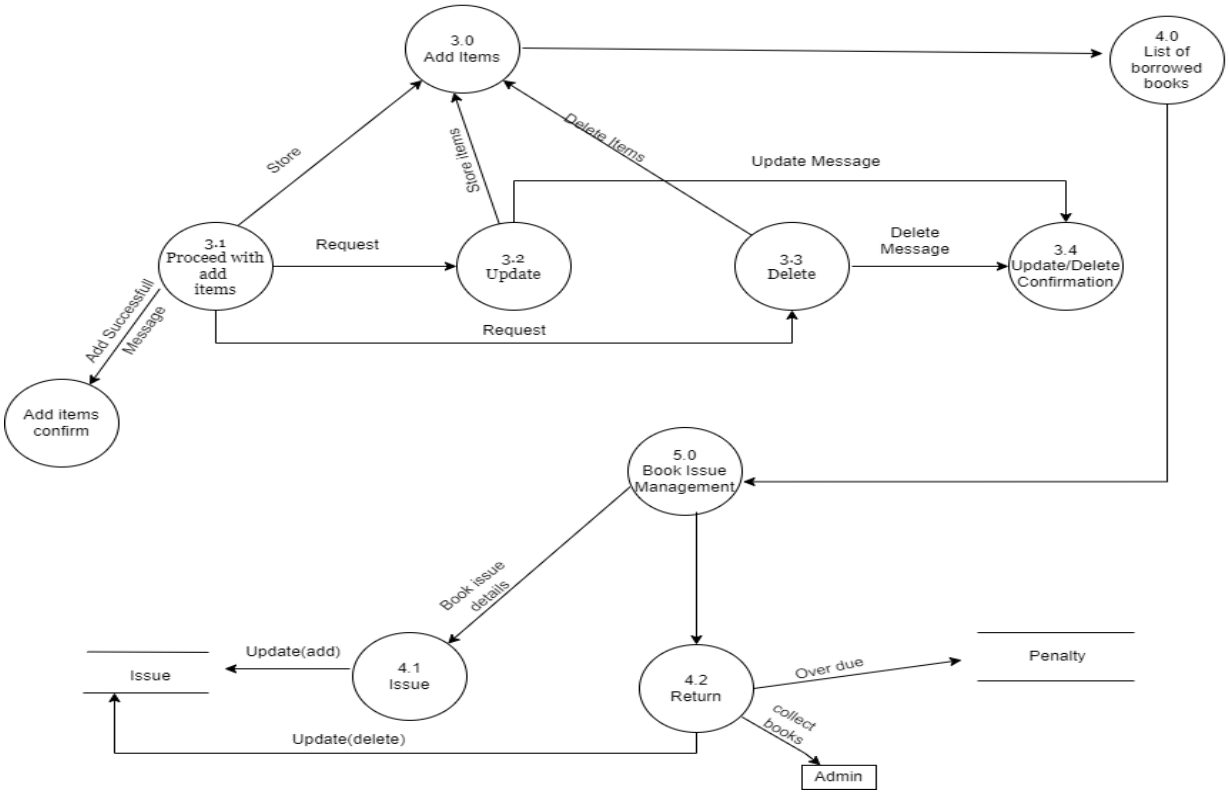
Context Diagram



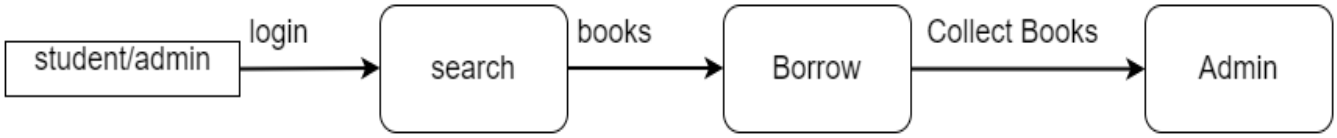
o Level :



1 level



Data Dictionary

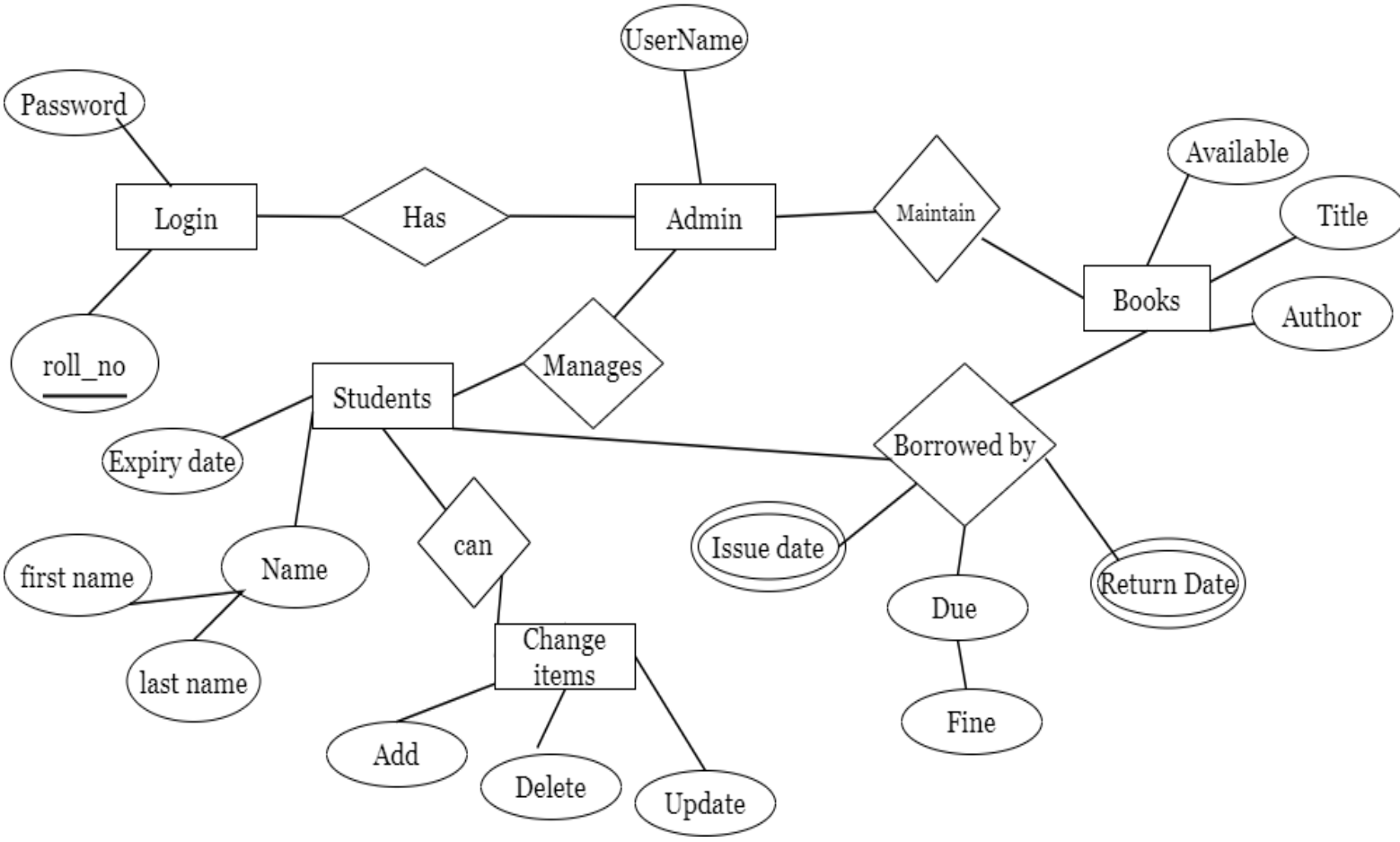


Login = UserName + password

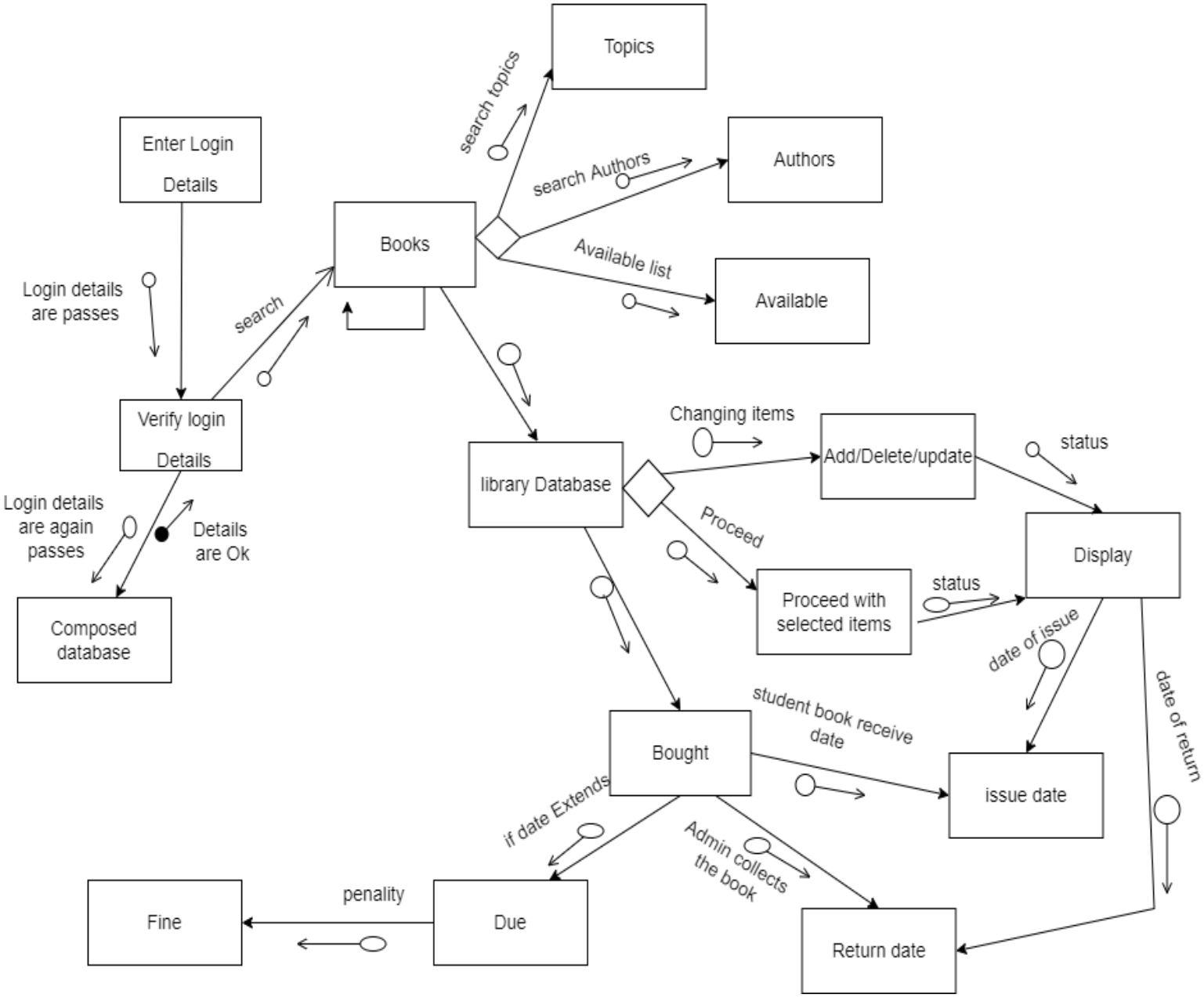
Books = List of authors + list of topics + [insert | delete | update] + display

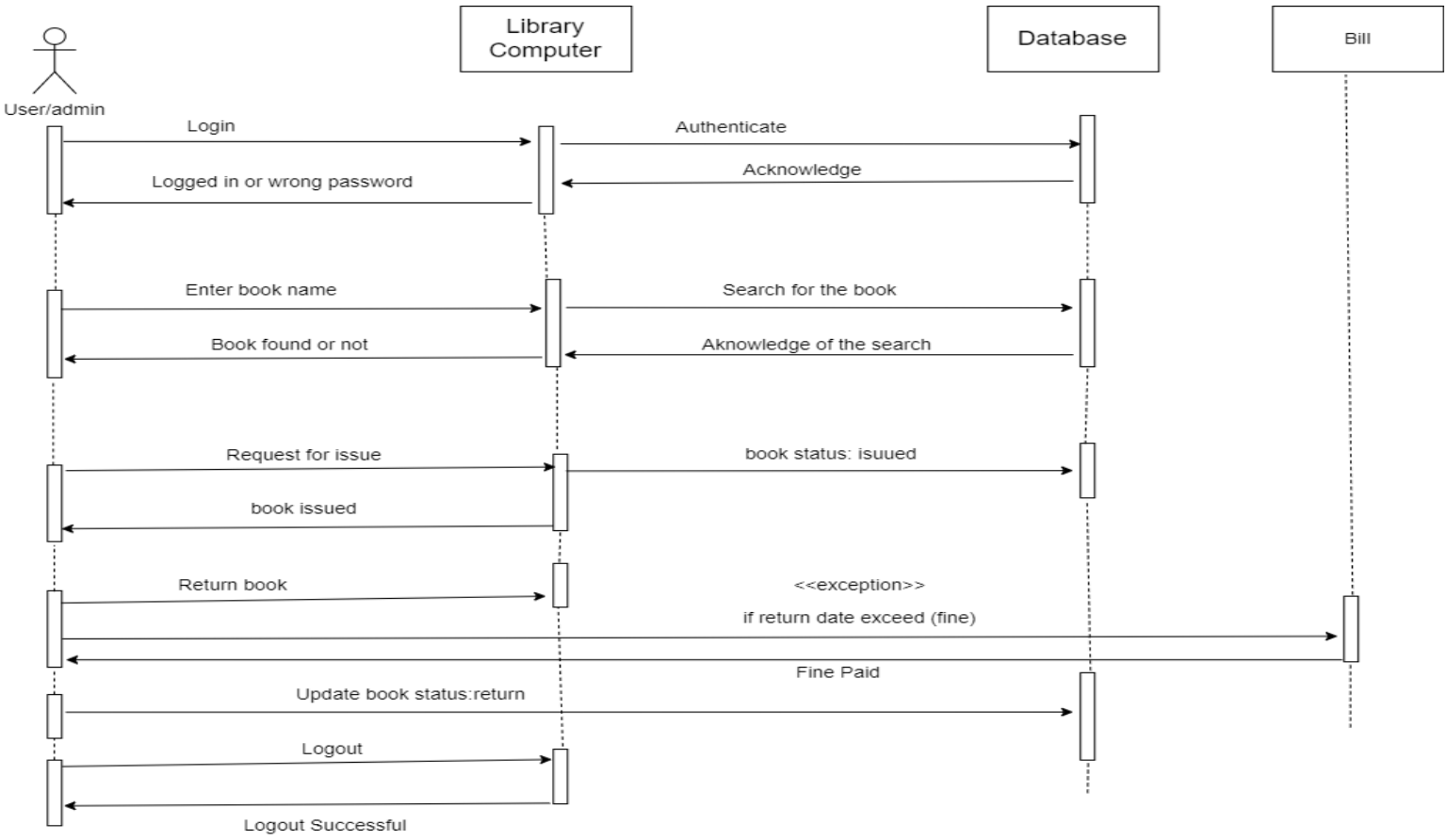
Collect Books = Username + password + return(if overdue they need to pay the fine)

ER Diagram

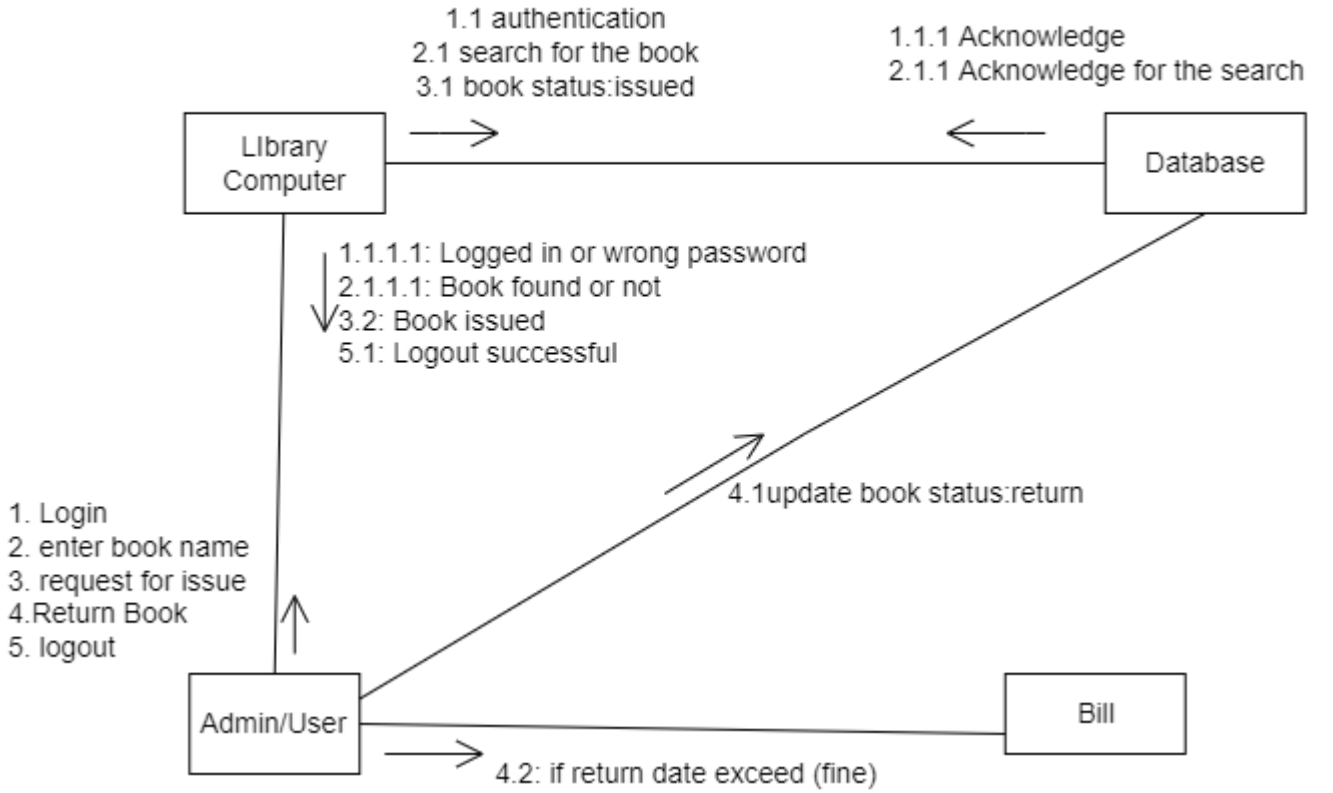


Structural Chart

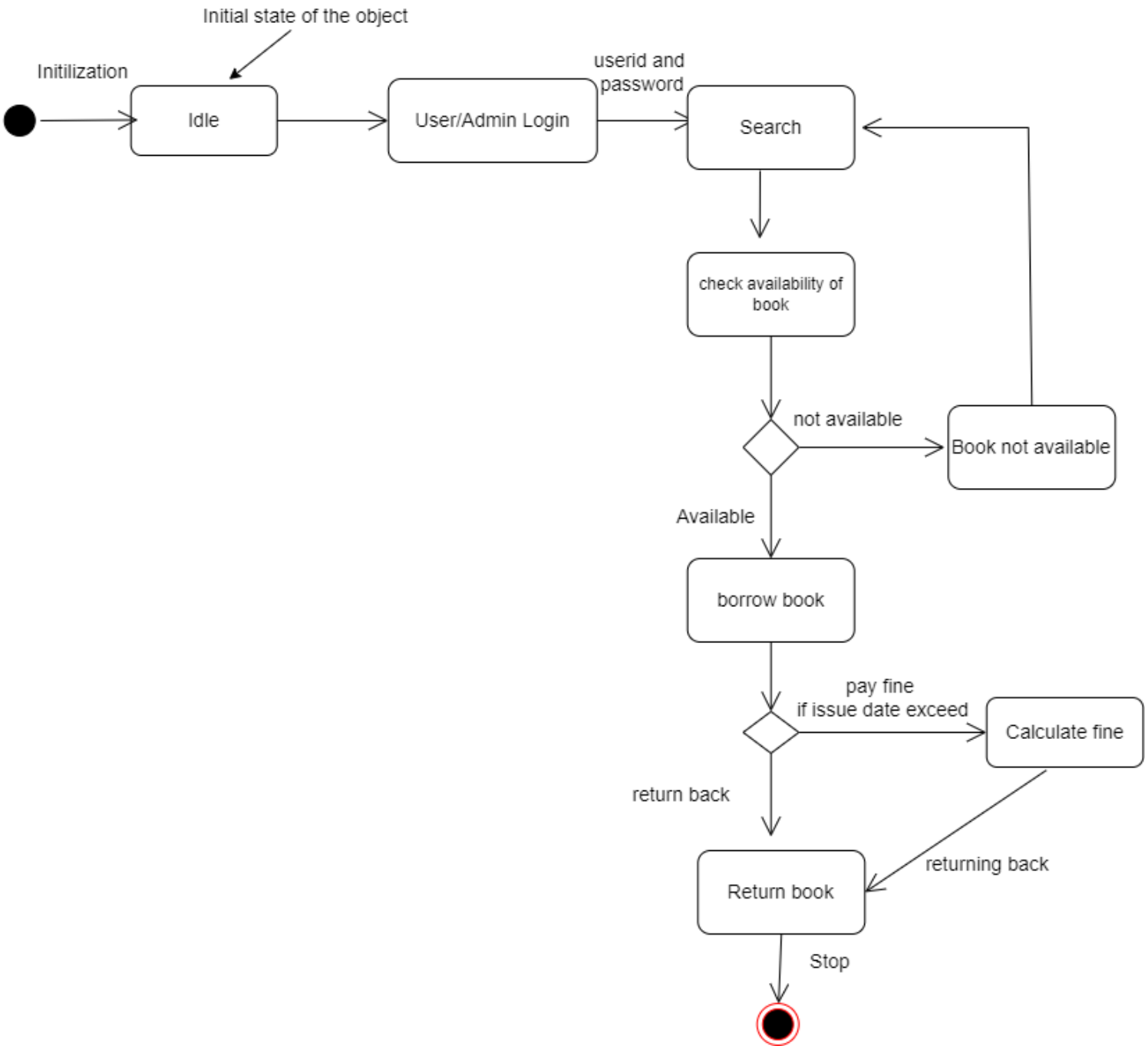




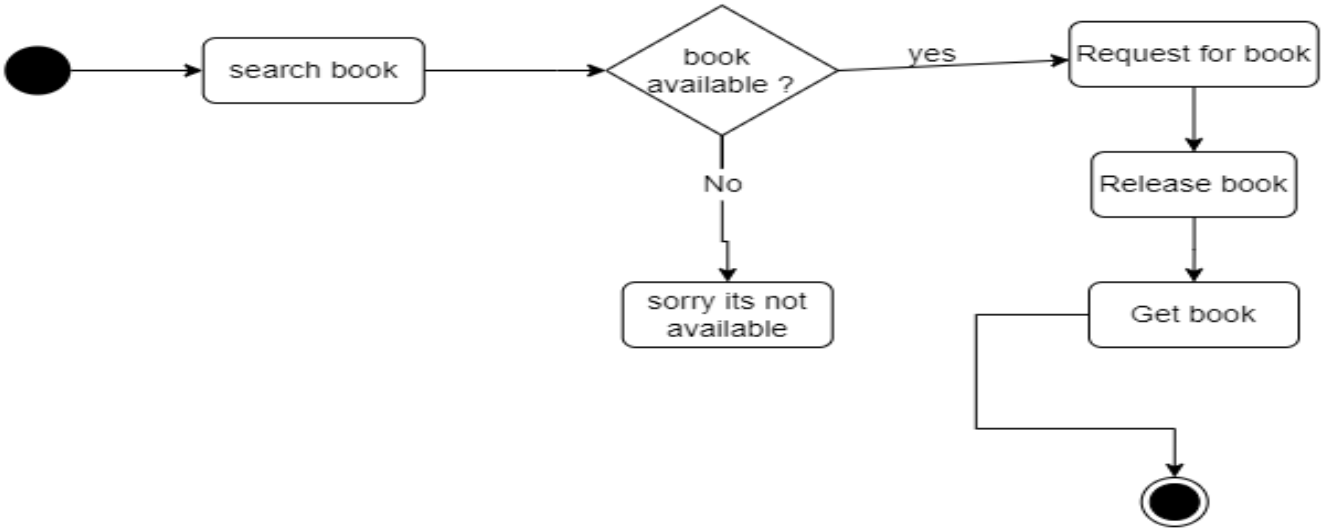
Collabration Diagram

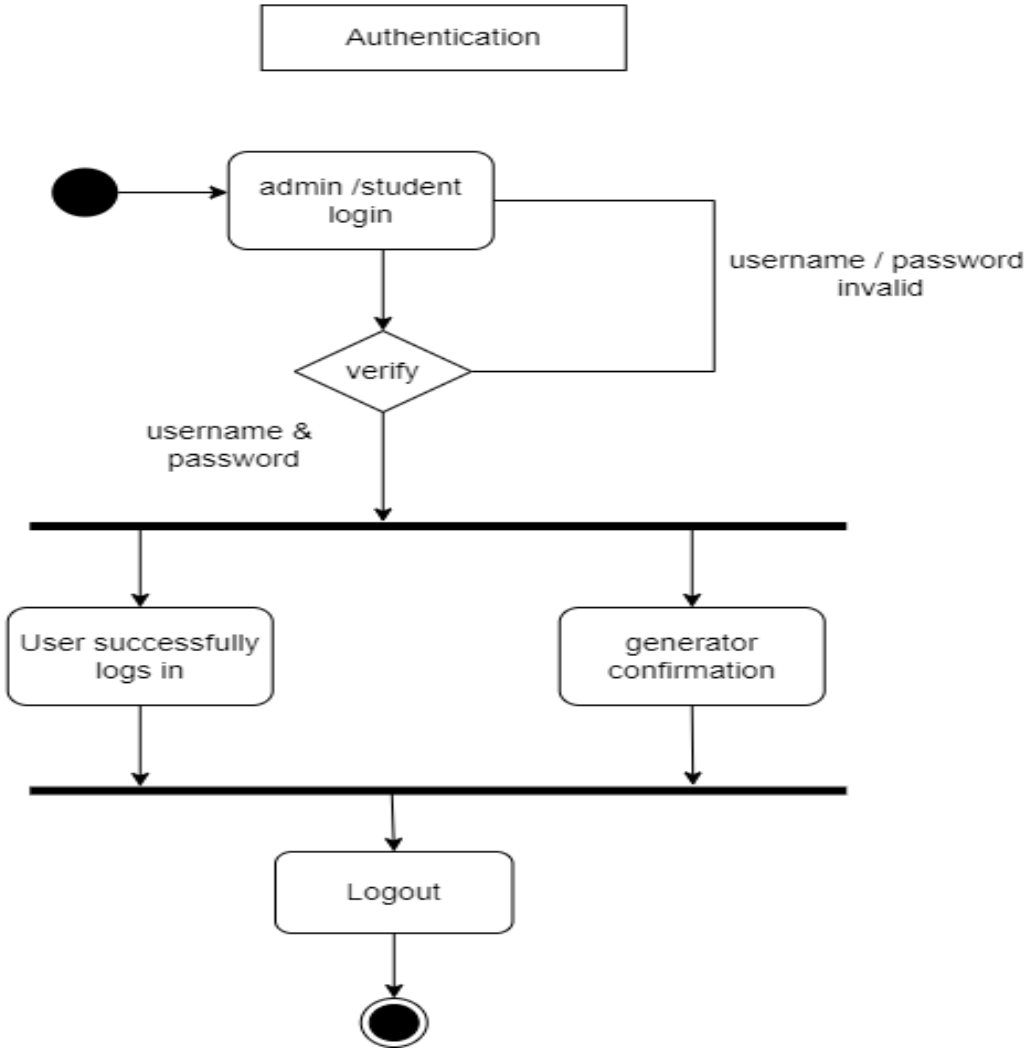


State chart Diagram

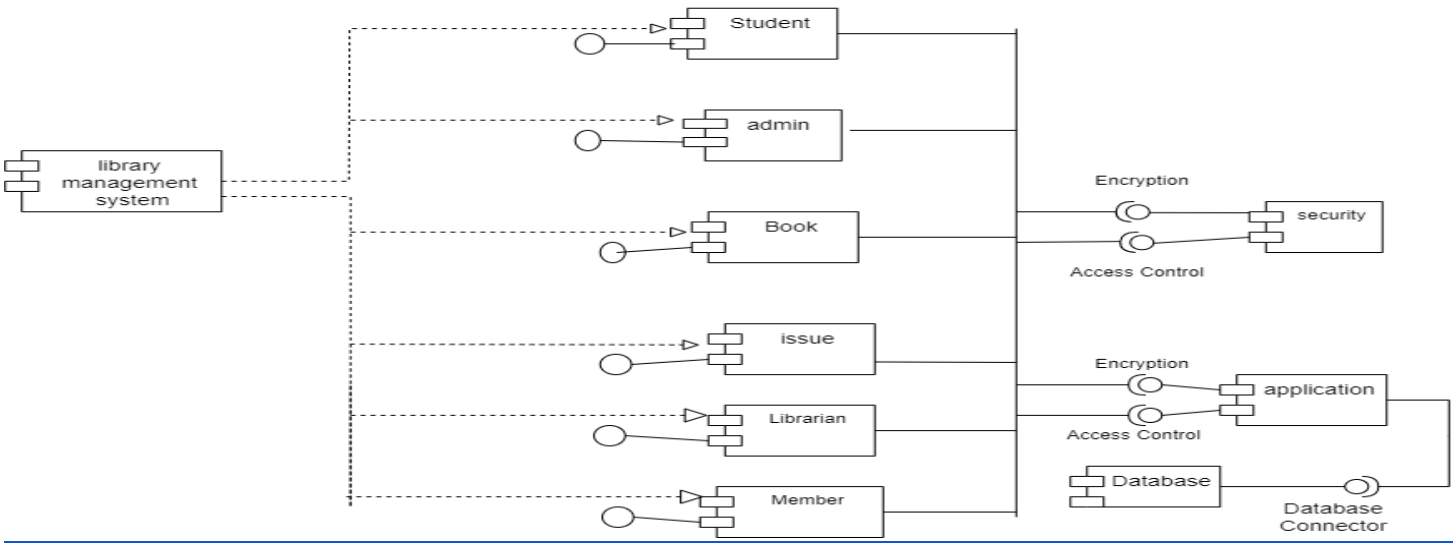


Activity Diagram

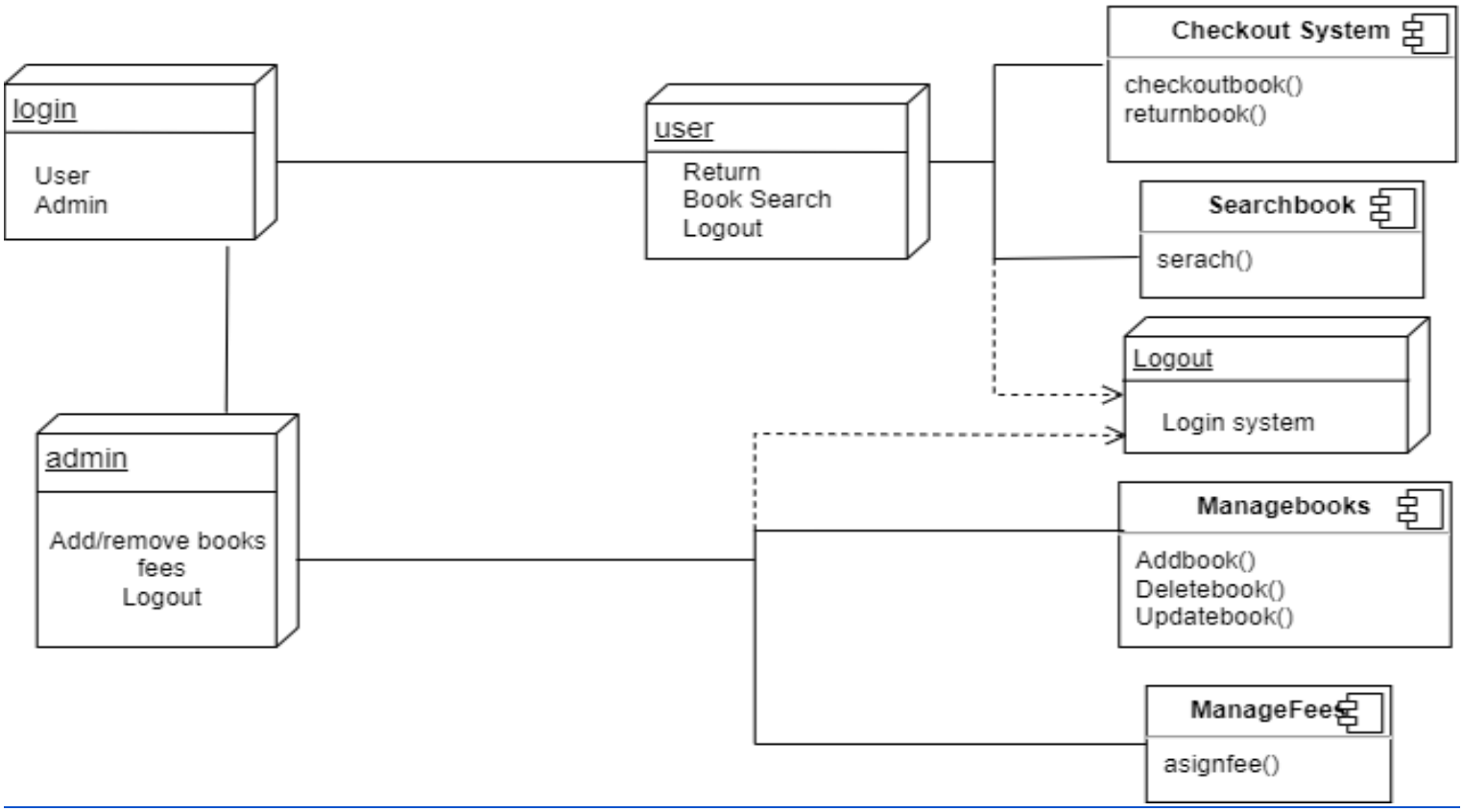




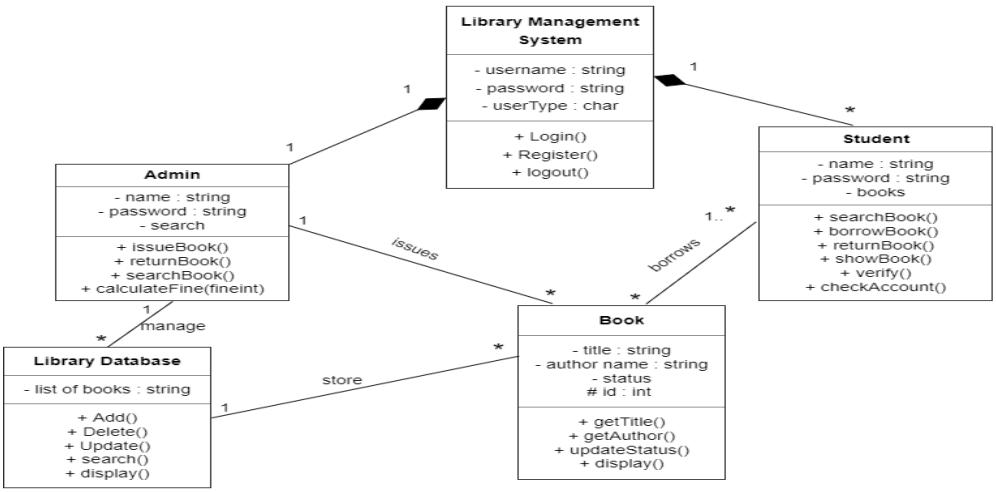
Component Diagram



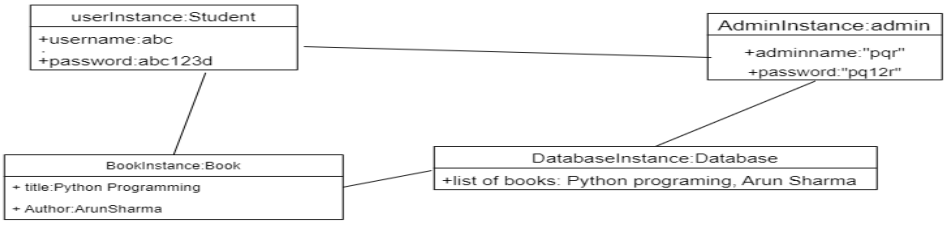
Deployment Diagram



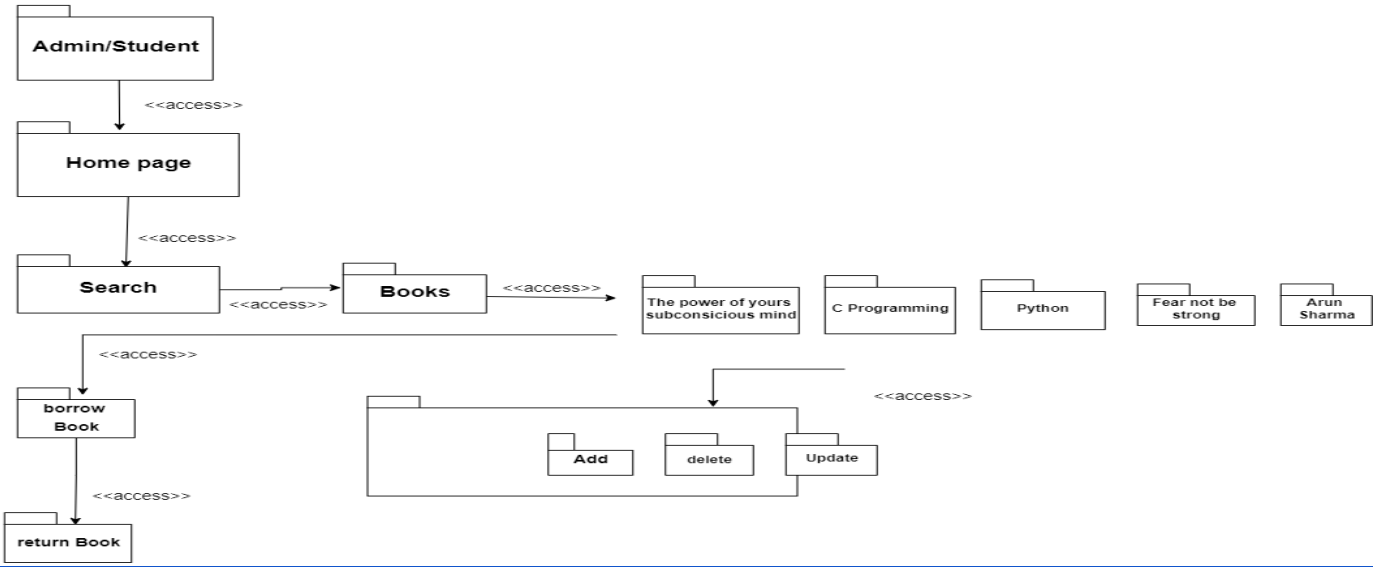
Class Diagram



Object Diagram:



Package diagram



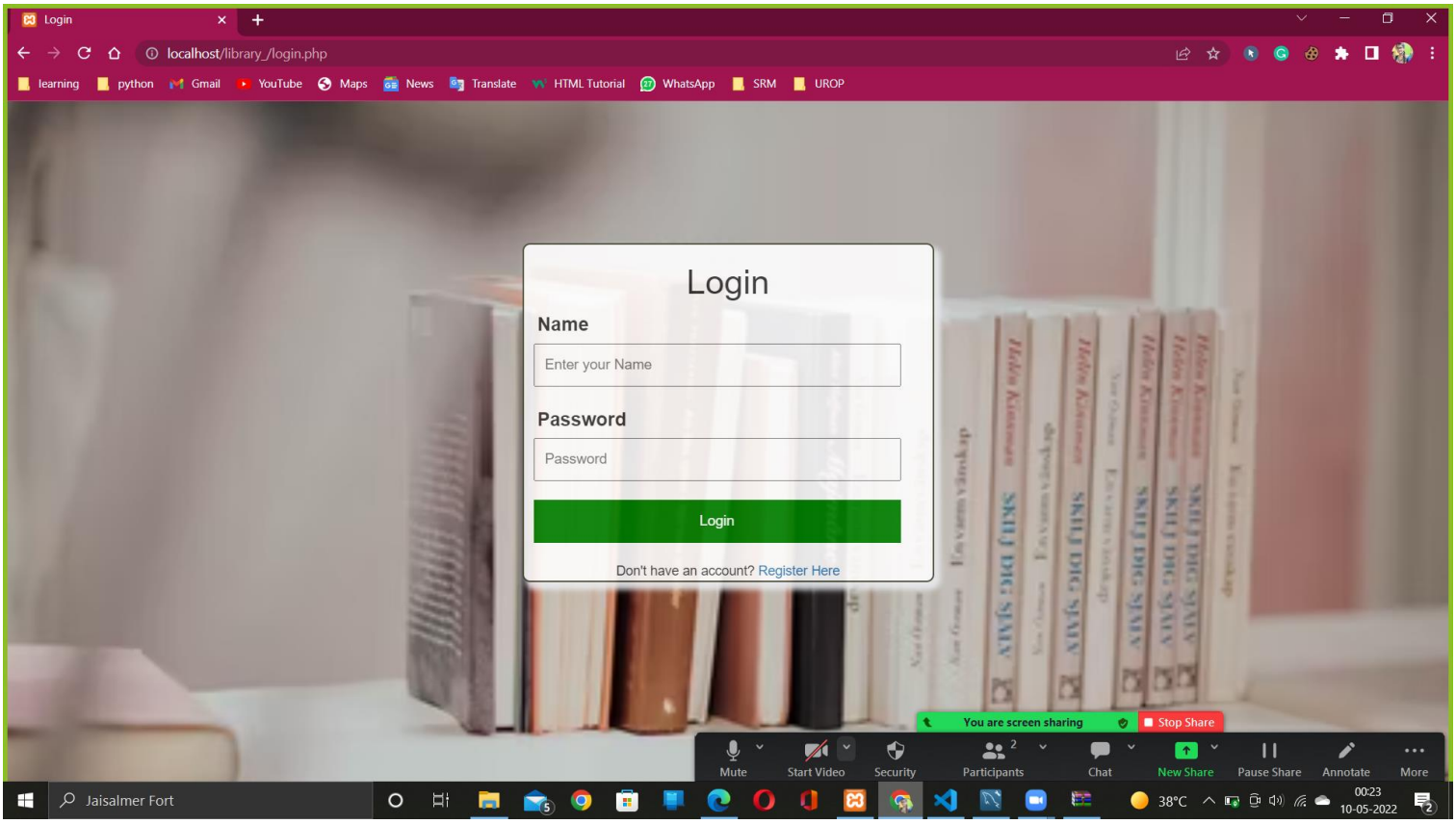
Use case diagram

Use Case Senario:

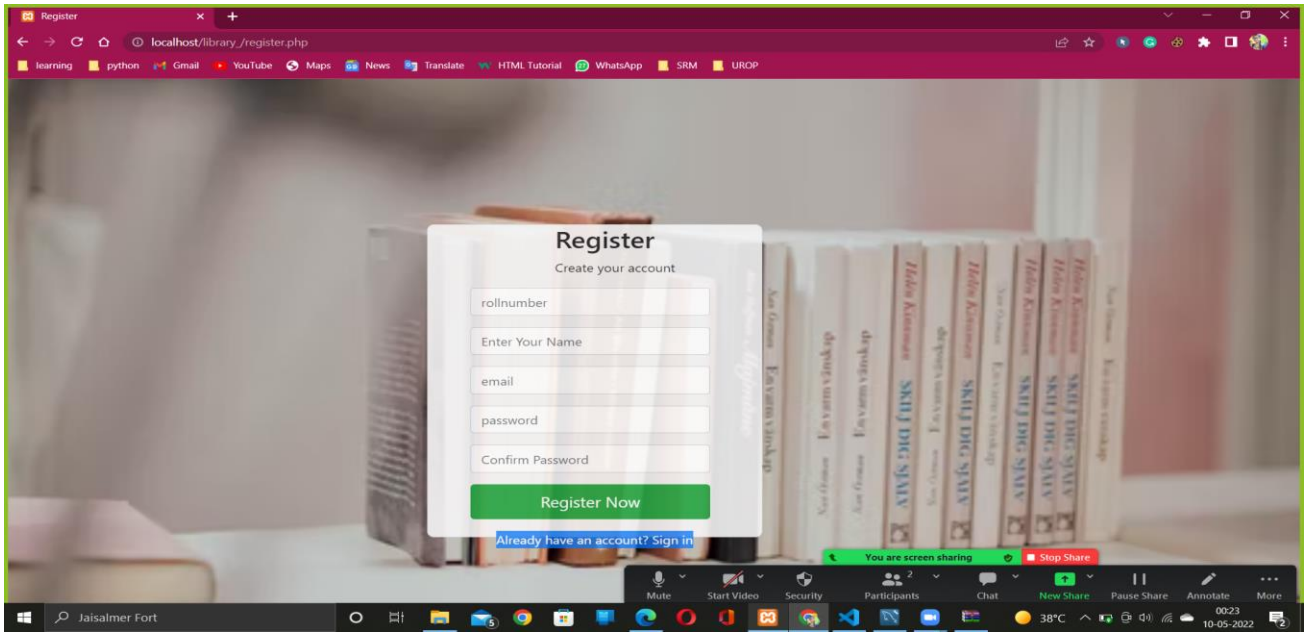
Use Case ID	UC-1
Use Case	Search and borrow books
Actors	(P) Student, admin
Descriptio	Students select the books he or she wants to borrow
Pre-Conditions	login website screen is on
Flow of Events	1. Student logins and logouts 2. Database verifies whether the login details are invalid or not. if valid then the website opens. 3. Students search the books with the help of a list of authors and a list of titles. 4. Admin manages the books(add/delete/update). 5. If a student wants books, he can take a new book and, if he wants to return, he can renew the books or return. 6. If the return book validity time exceeds then, they should pay some charges.
Post-Conditions	Information of returned book or entered of an issued book in database
Alternative Flows	1. If the password is incorrect then that member doesn't go to the website. 2. if the book search is unsuccessful, then that book cannot be viewed or edited.

Results:

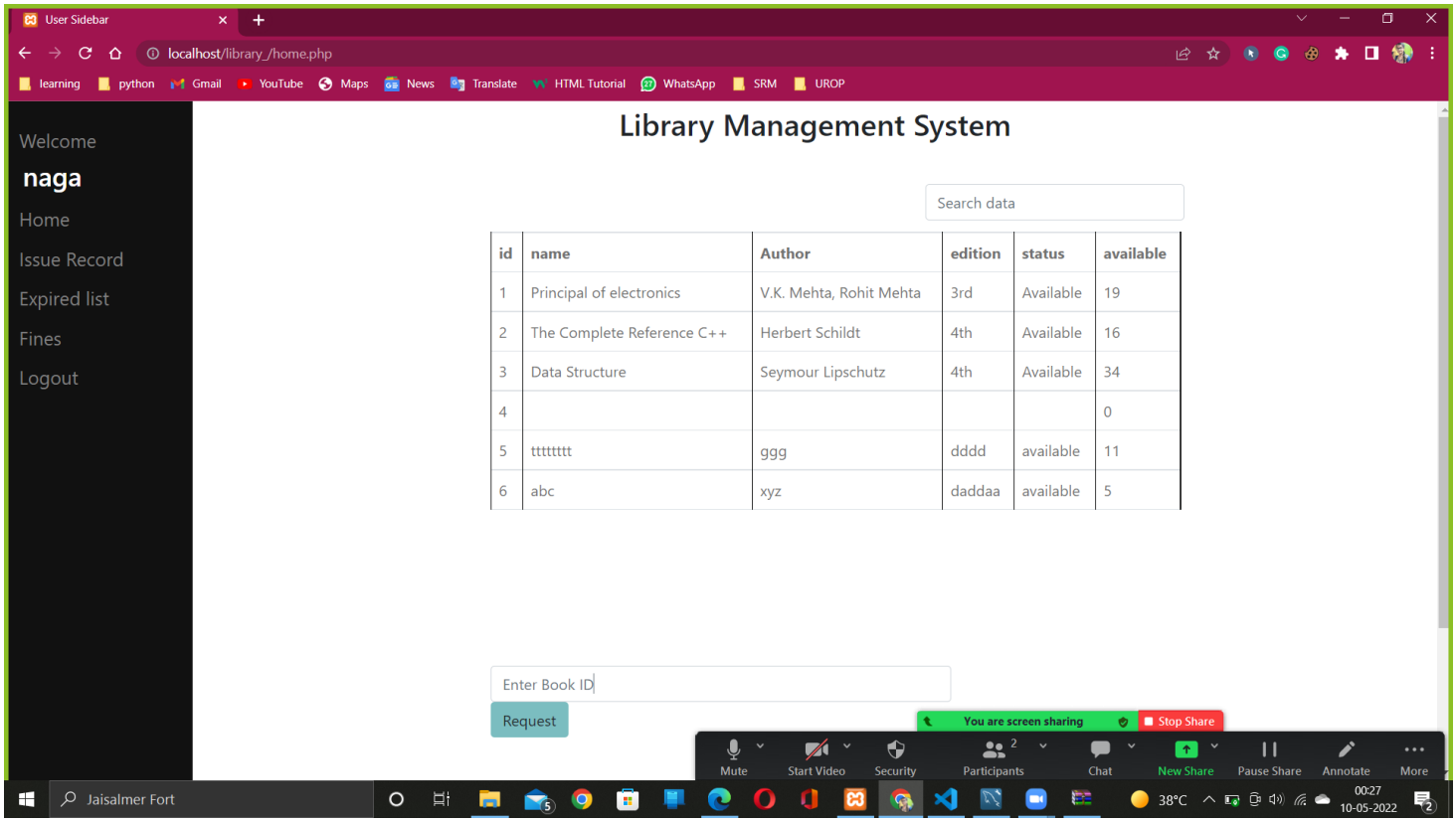
Login page



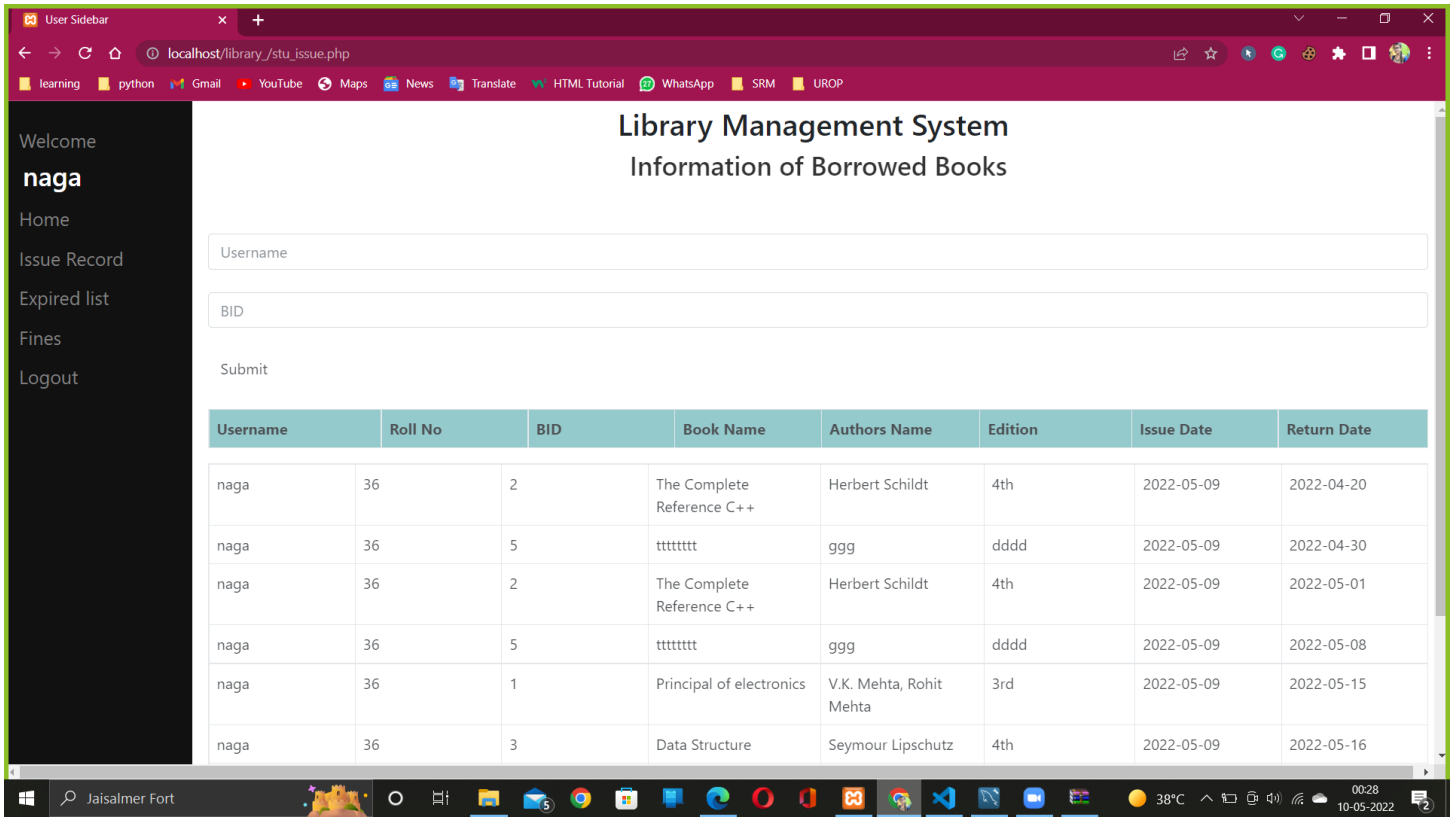
Register:



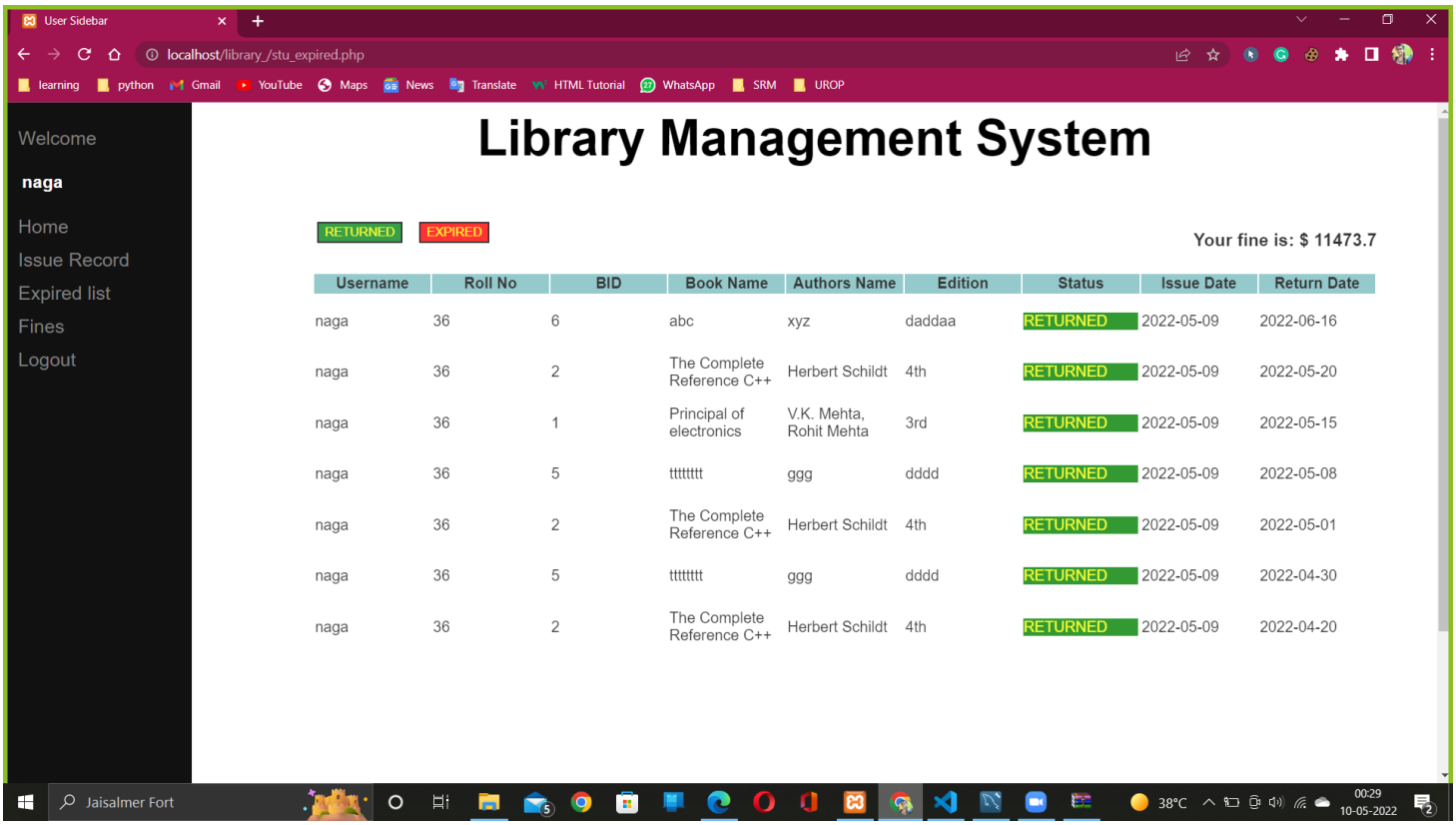
User Home Page:



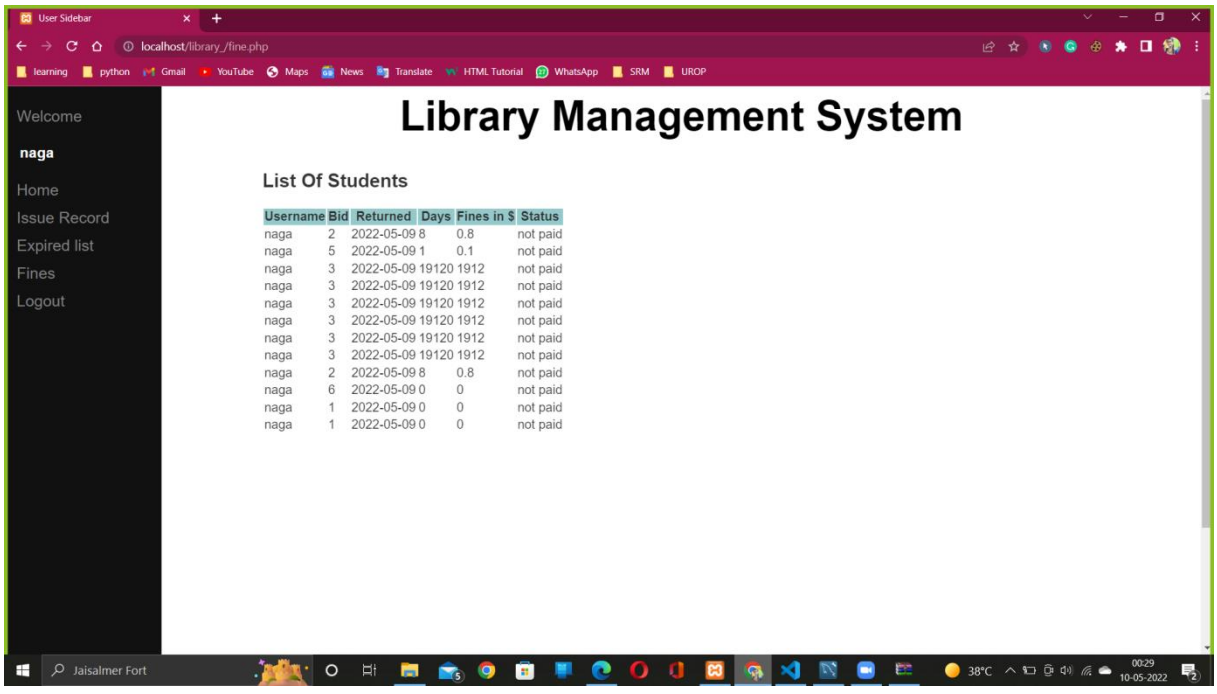
User Issue Record:



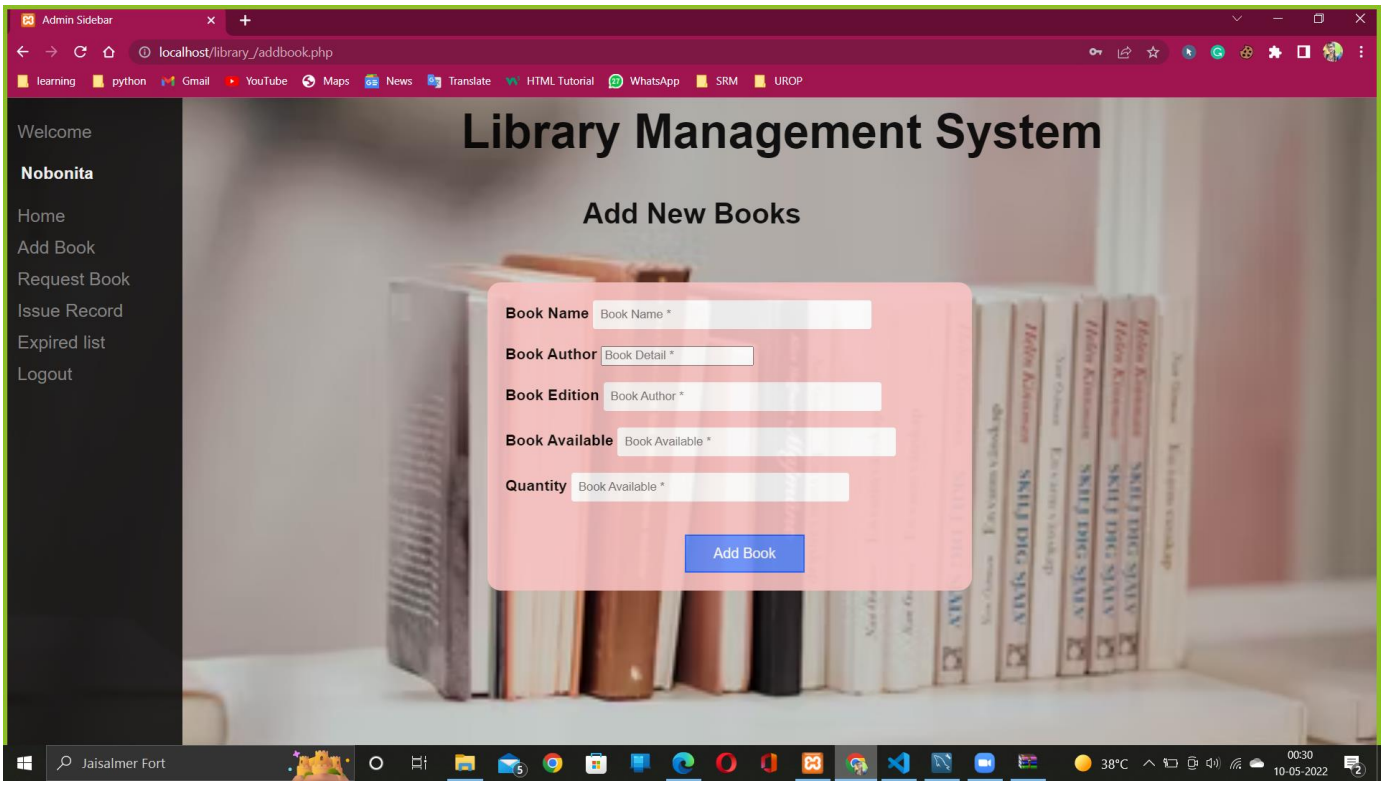
Expired list:



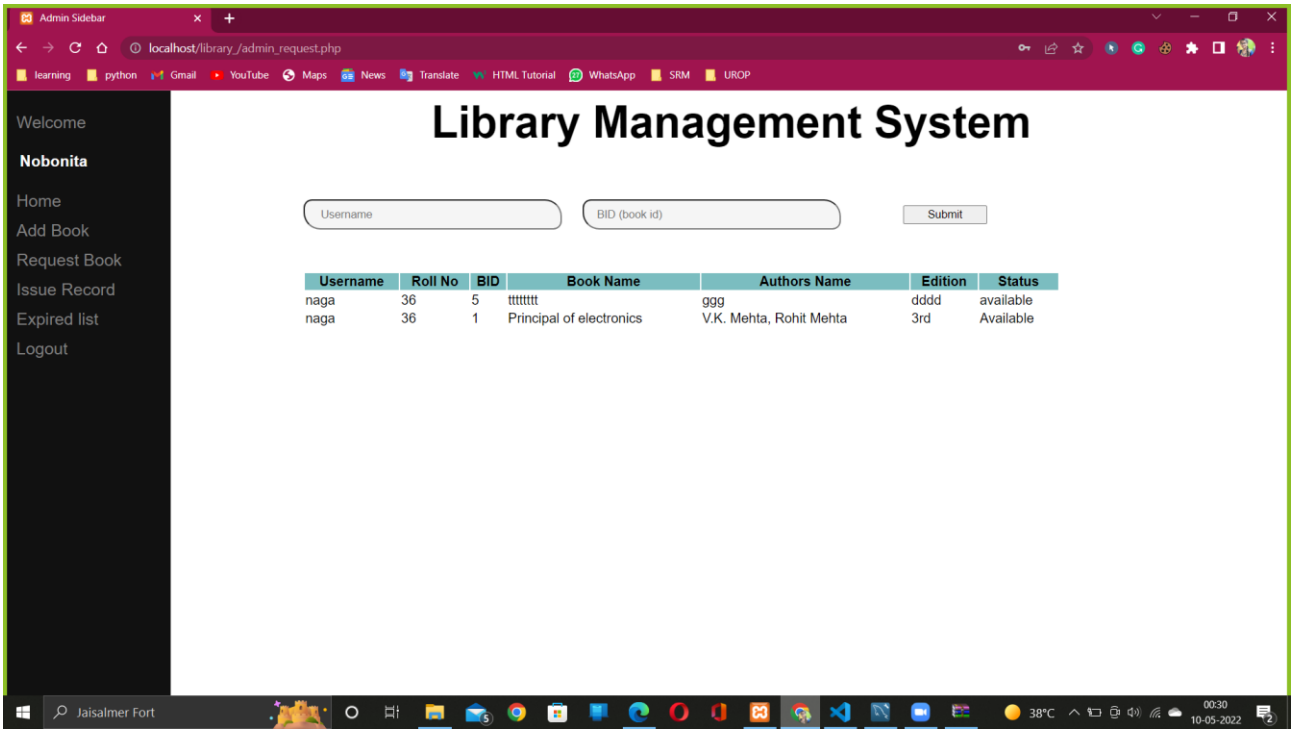
Fine:



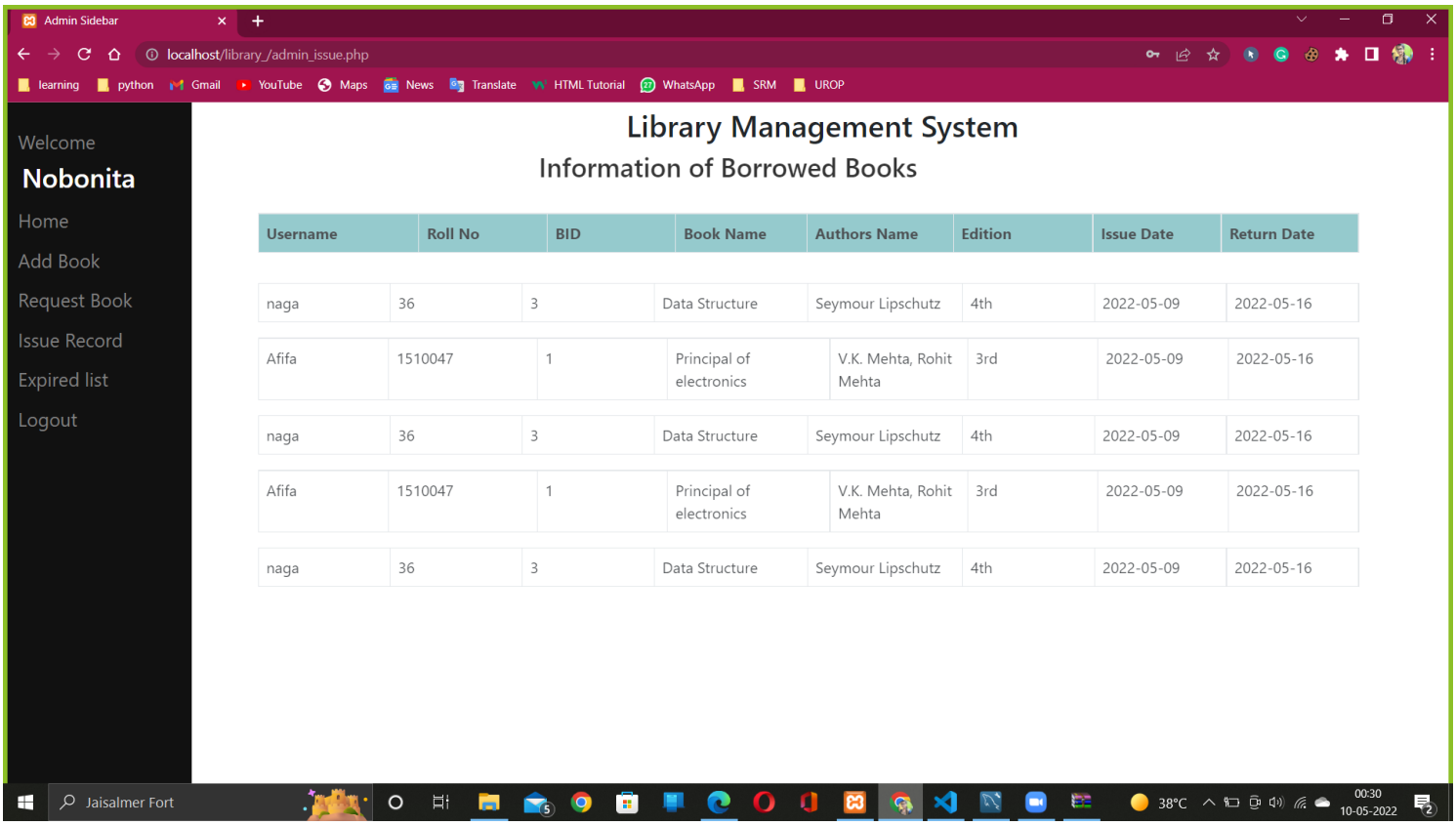
Add new books:



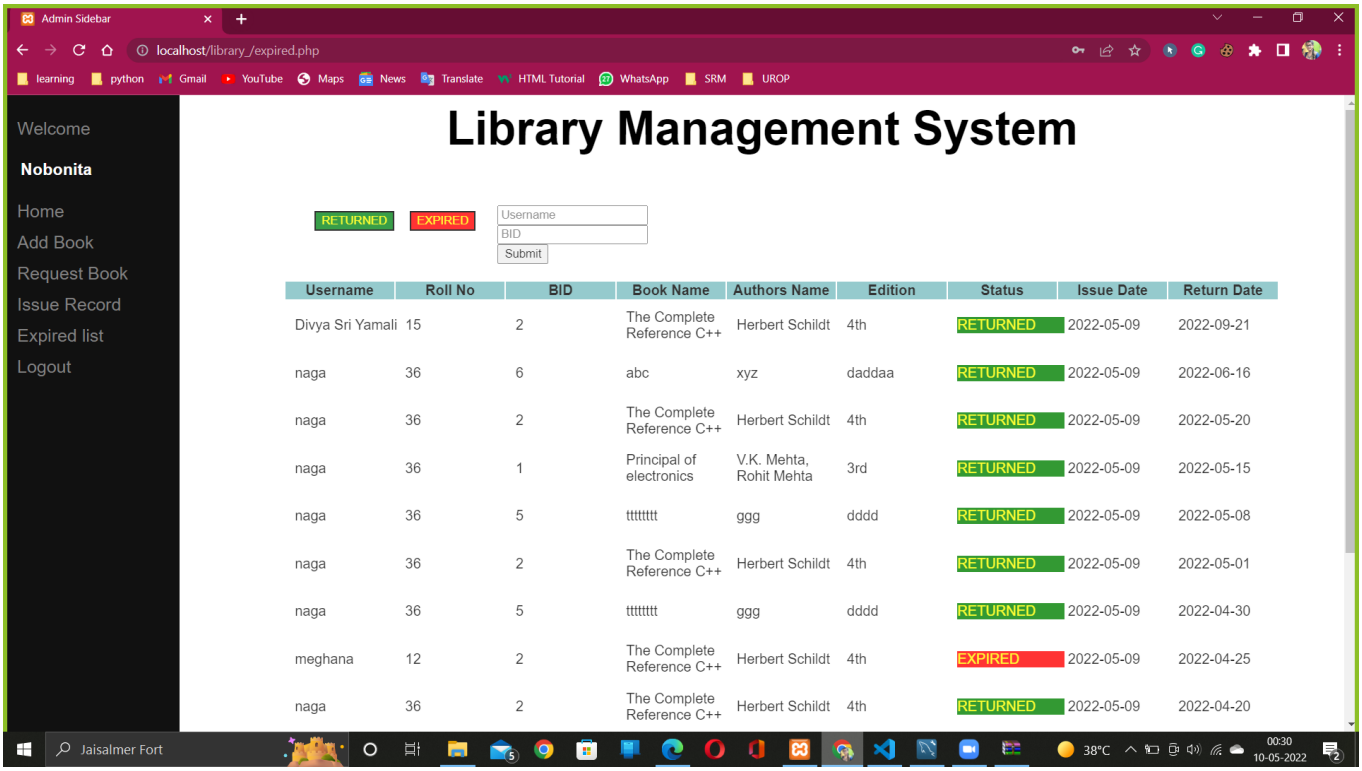
Requsted Books:



Issue record:



Expired list:



Conclusion:

The "LIBRARY MANAGEMENT SYSTEM" process was computerised to decrease human mistakes and increase efficiency, which would benefit both students and library staff. It brings the entire process online so that students can search for books. It also includes a student login feature so that students may login and monitor the status of books issued as well as request books. If the number of entries is quite vast, the user may just enter in the search term and obtain the results right away. Each student has a unique ID that allows them to check out any book from the library. The librarian may check the user information, fine payment, and book information using the ID.

References:

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