

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 modules 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 anyone but users have to login or register. Users send the requests server processes then it extracts the data from the database and sends the result back to the client. Users can search for books and renew 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.

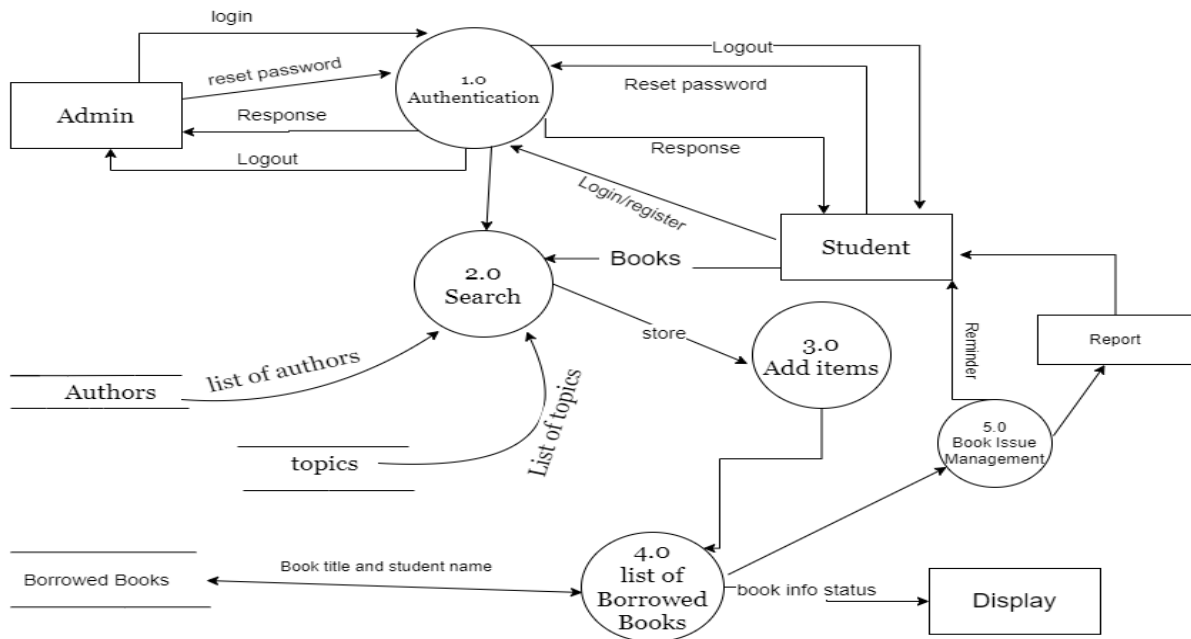
Easy search of book in the online library.

- 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.

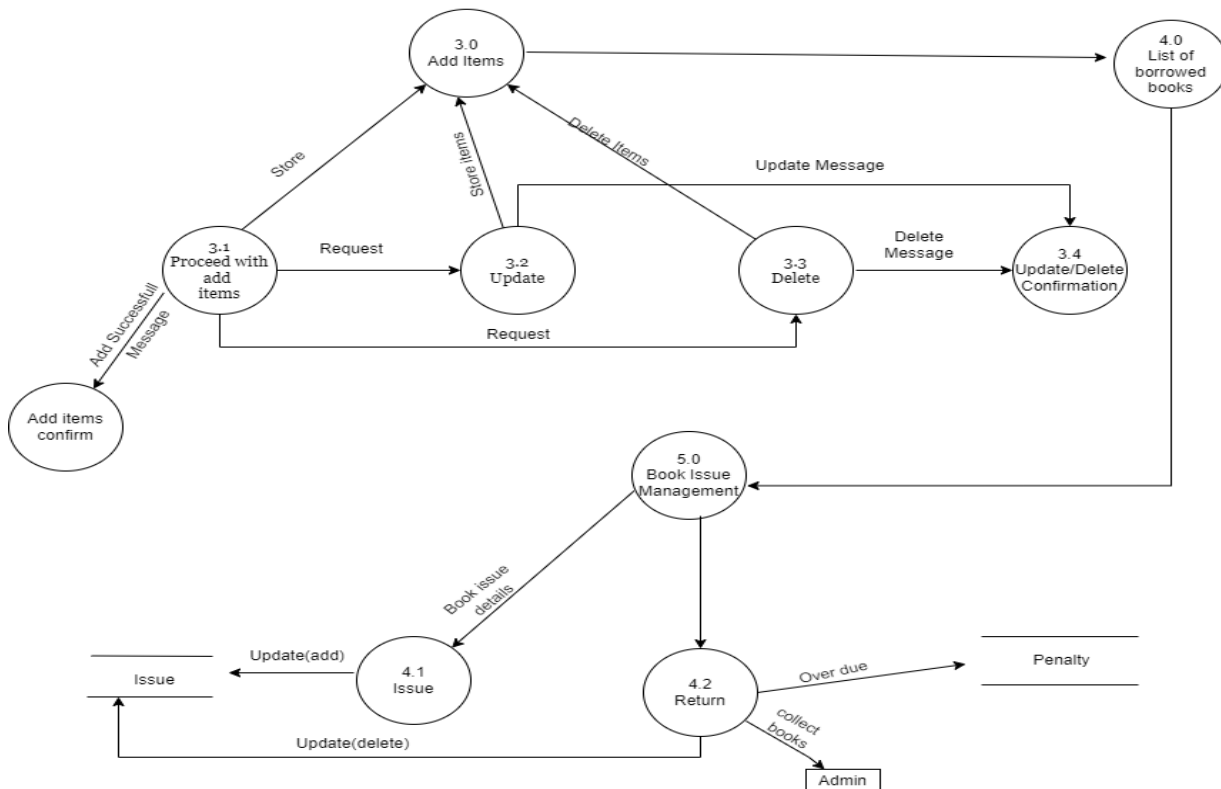
Context Diagram



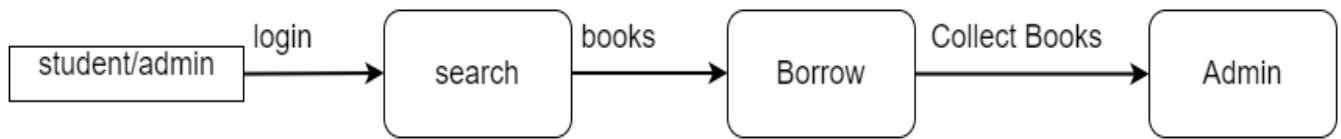
o Level :



1 level



Data Dictionary

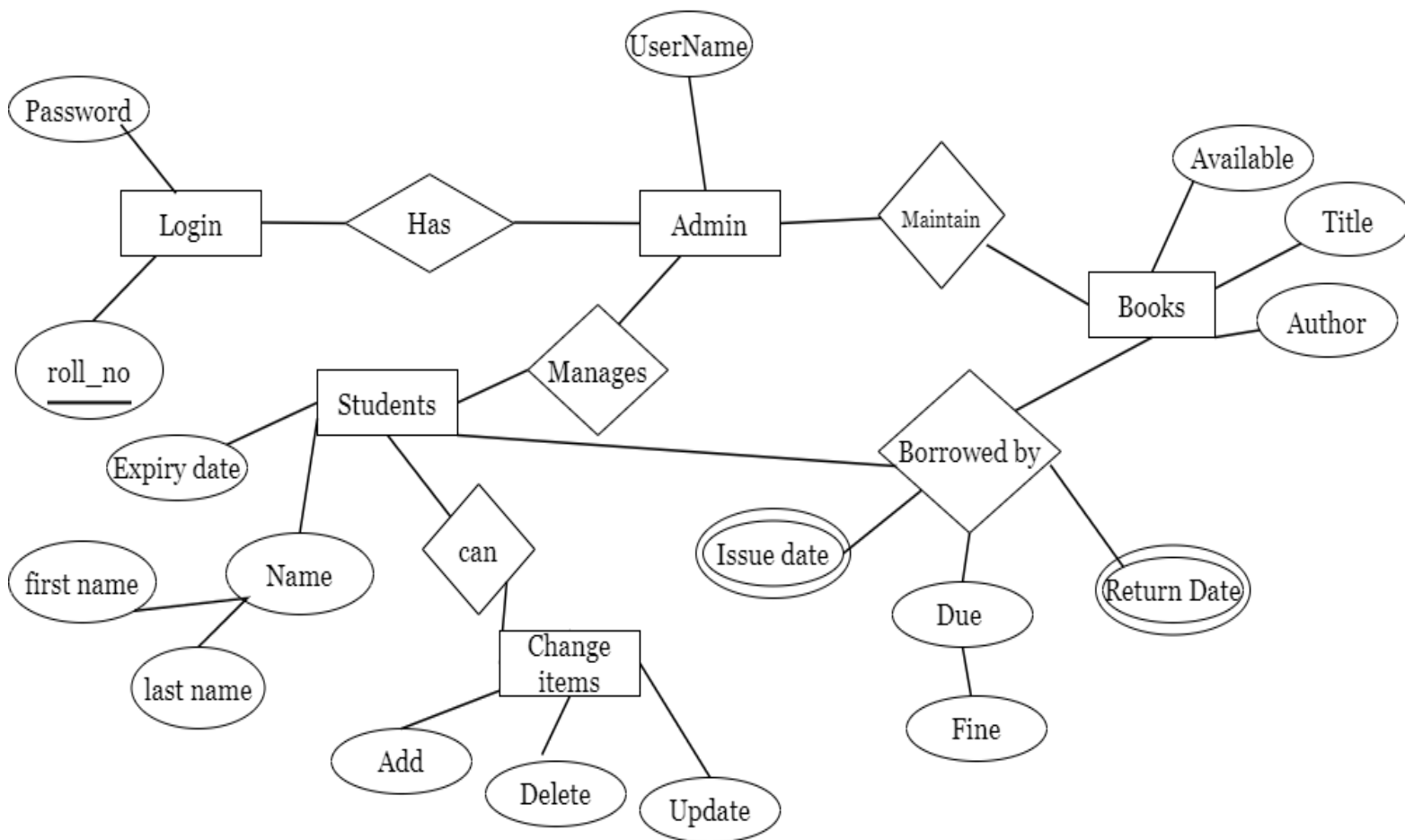


Login = UserName + password

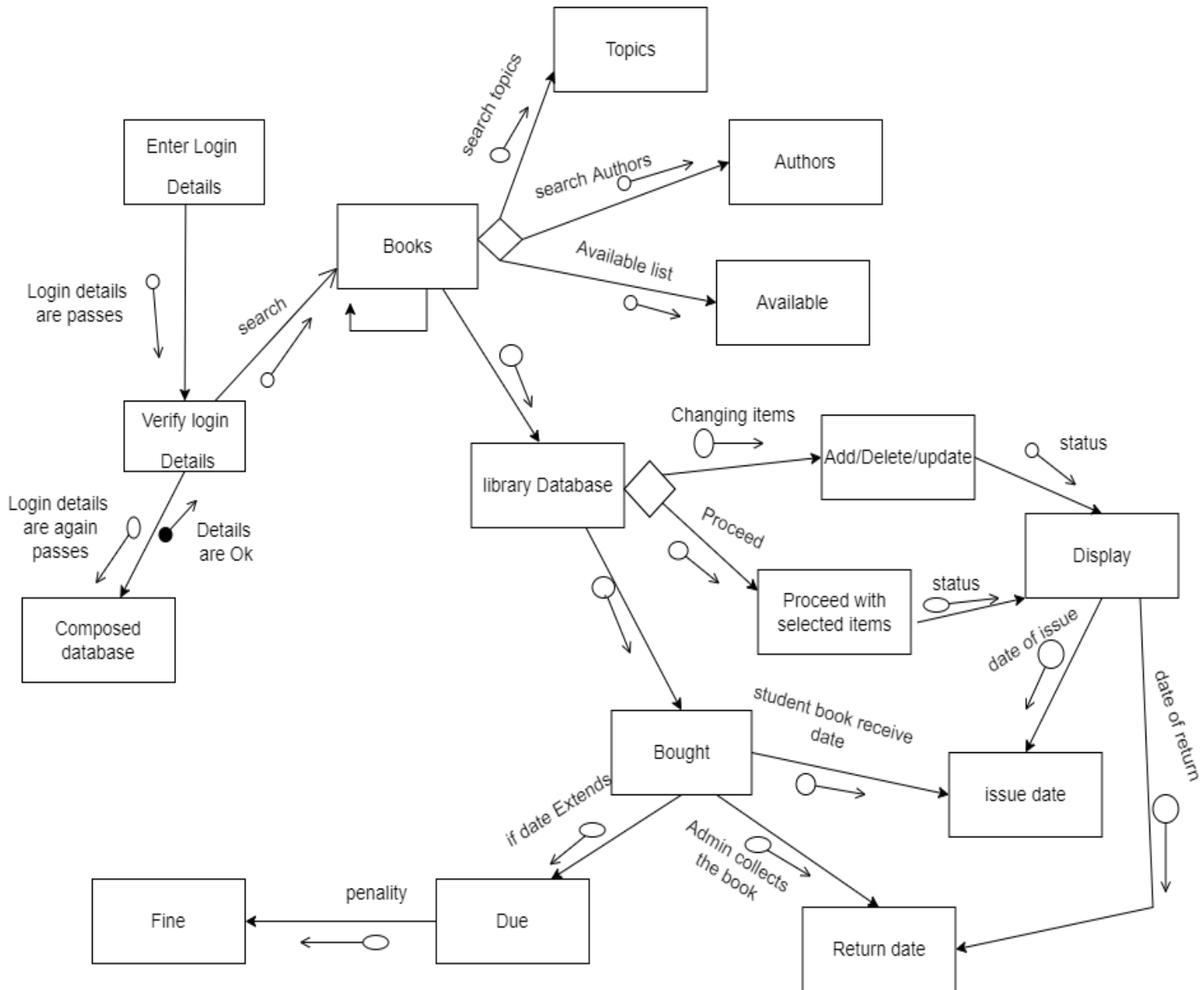
Books = List of authors + list of topics + [insert | delete | update] + display

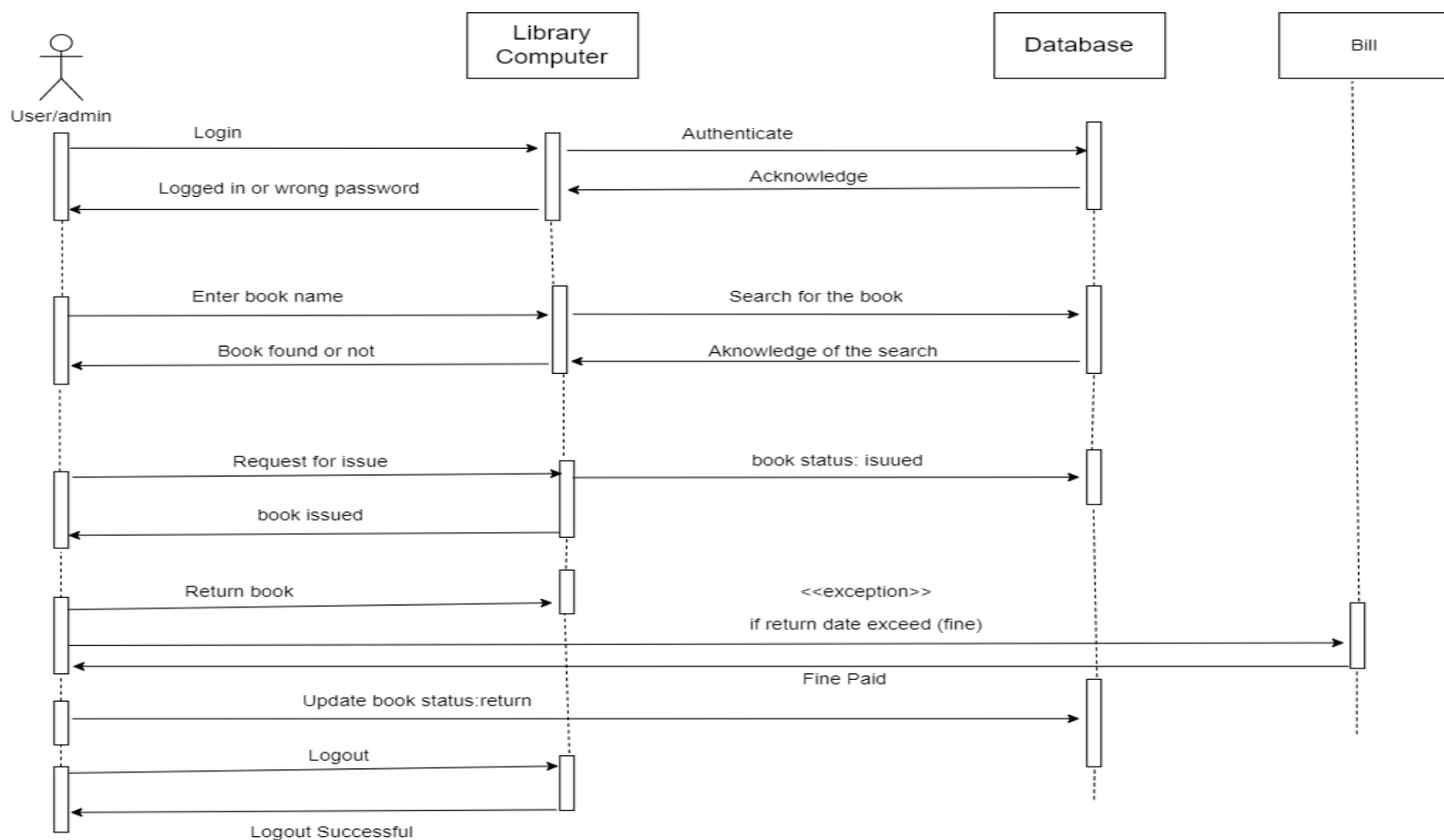
Collect Books = Username + password + return(if overdue they need to pay the fine)

ER Diagram

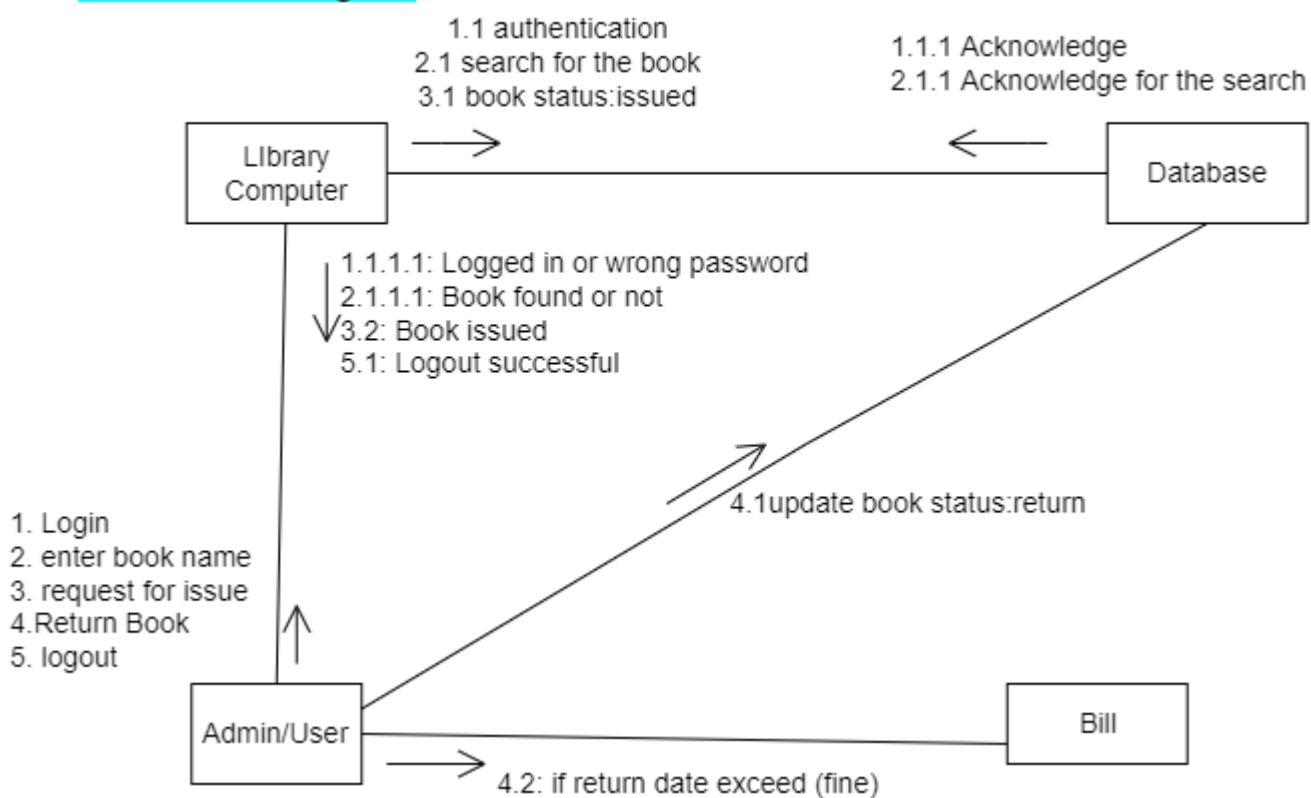


Structural Chart

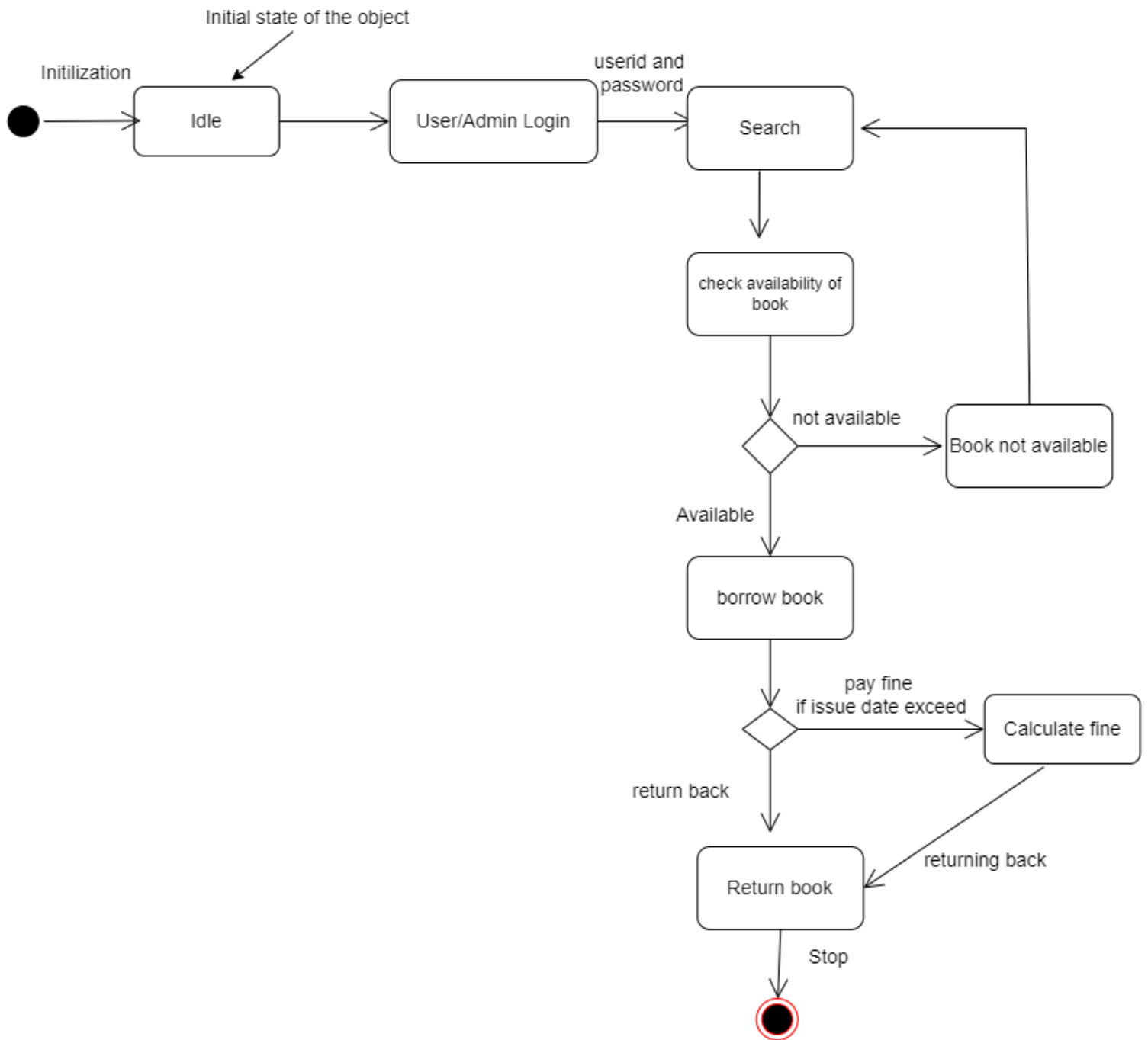




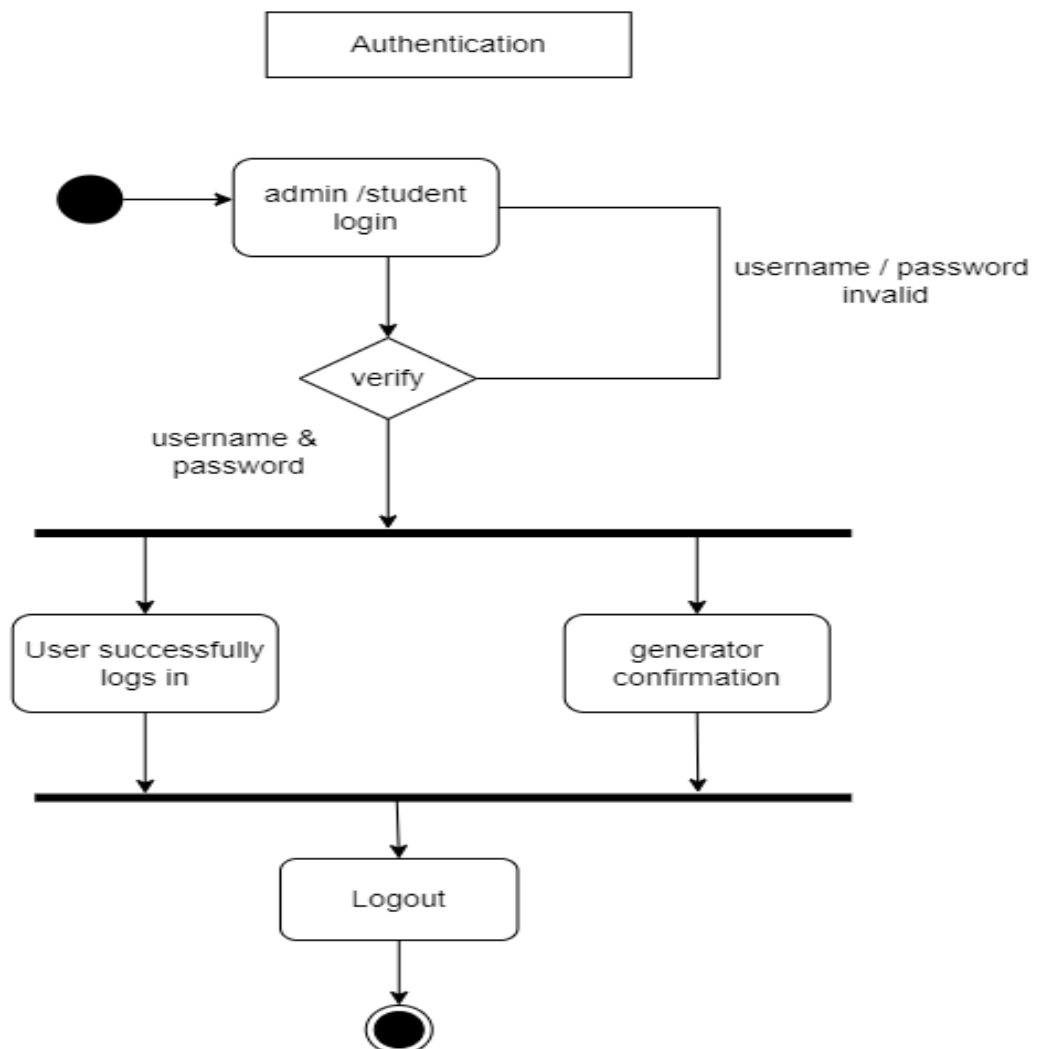
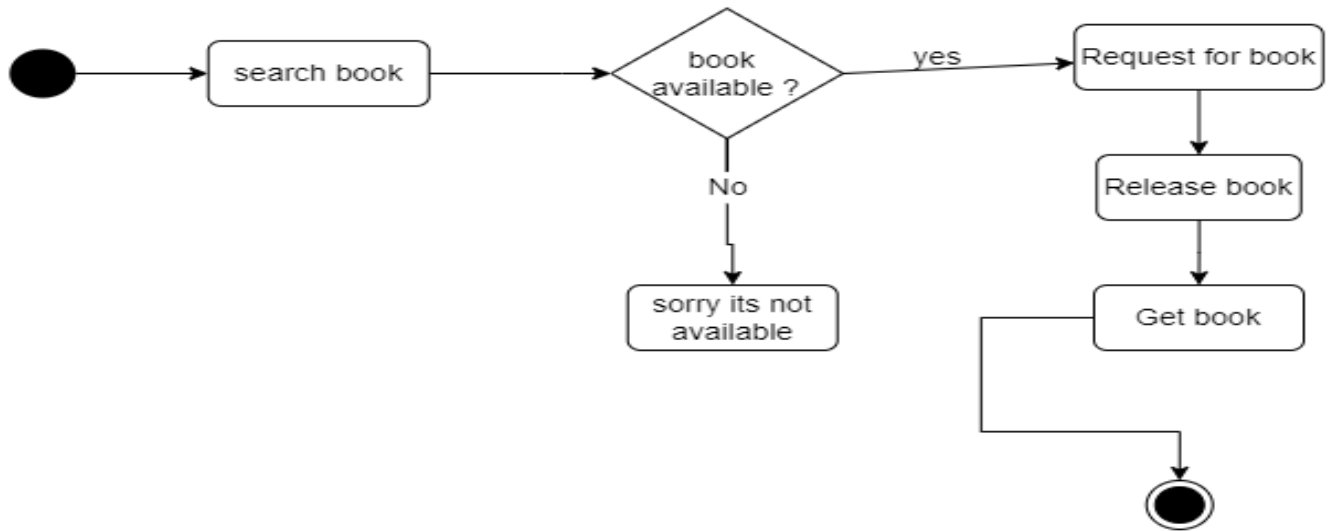
Collabroration Diagram



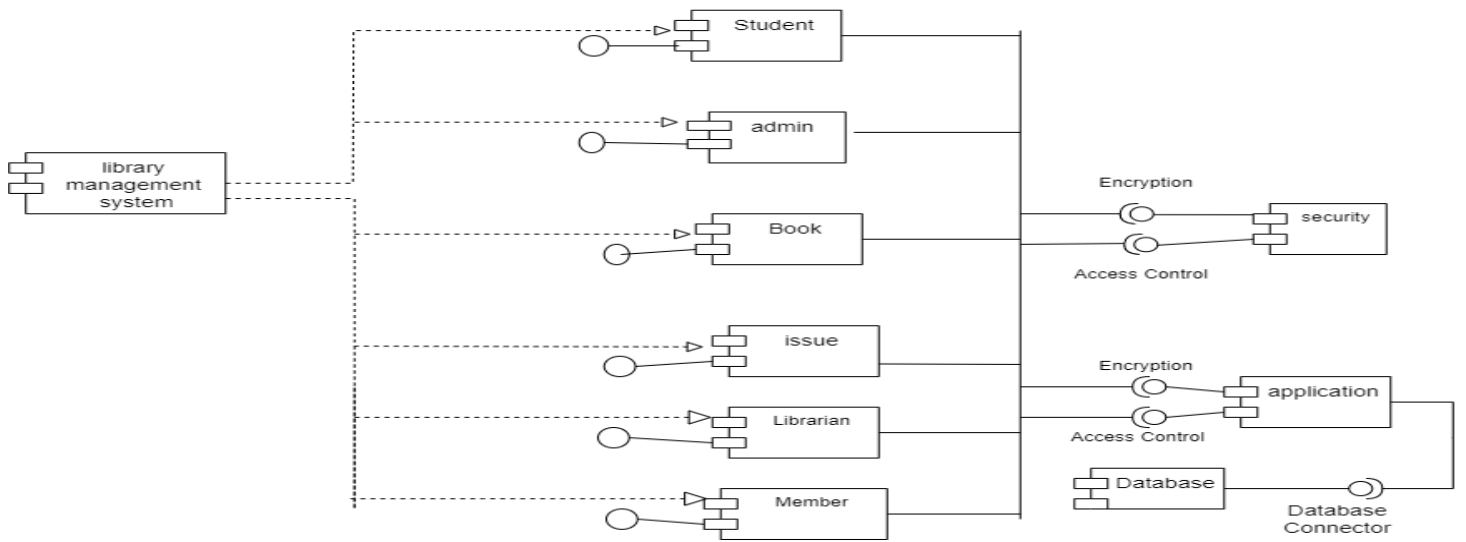
State chart Diagram



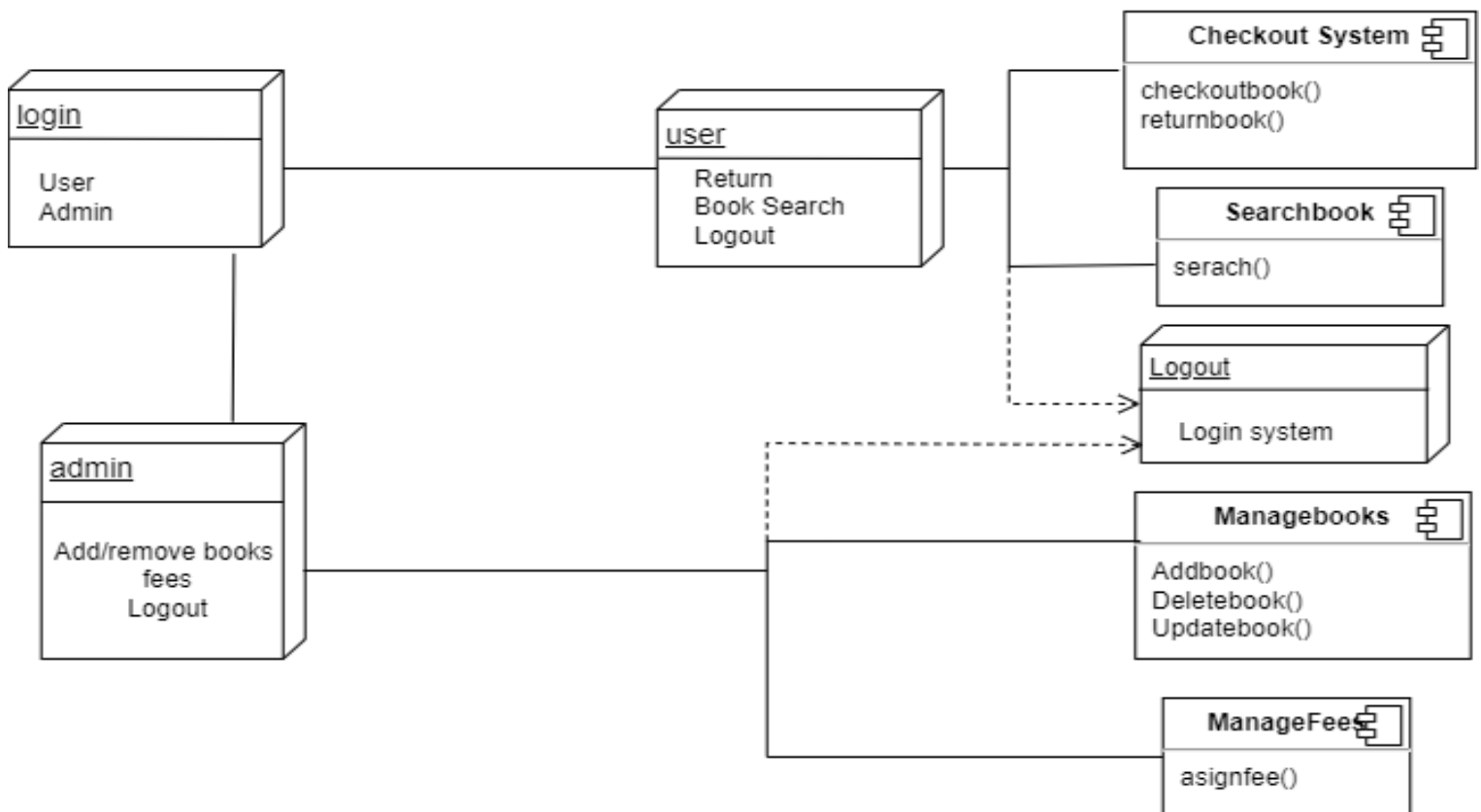
Activity Diagram



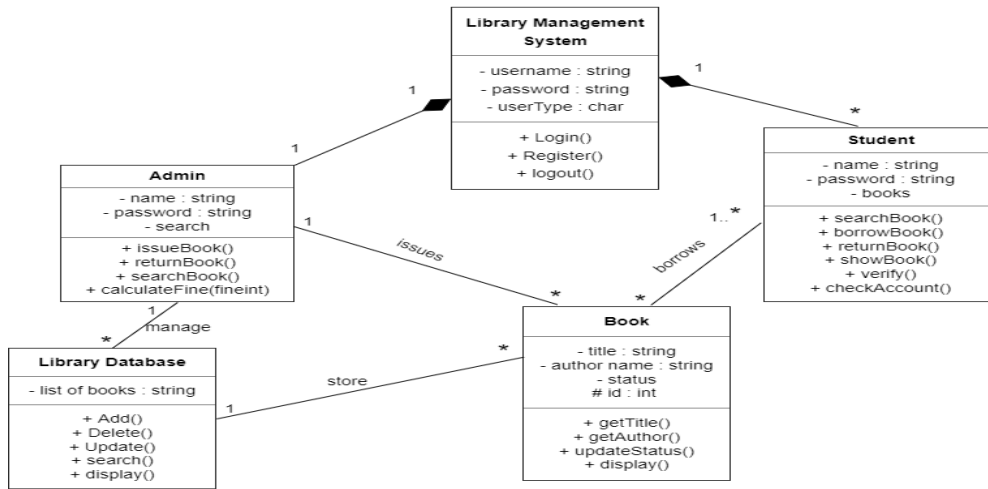
Component Diagram



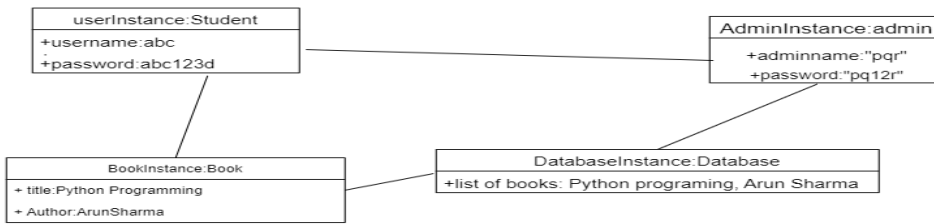
Deployment Diagram



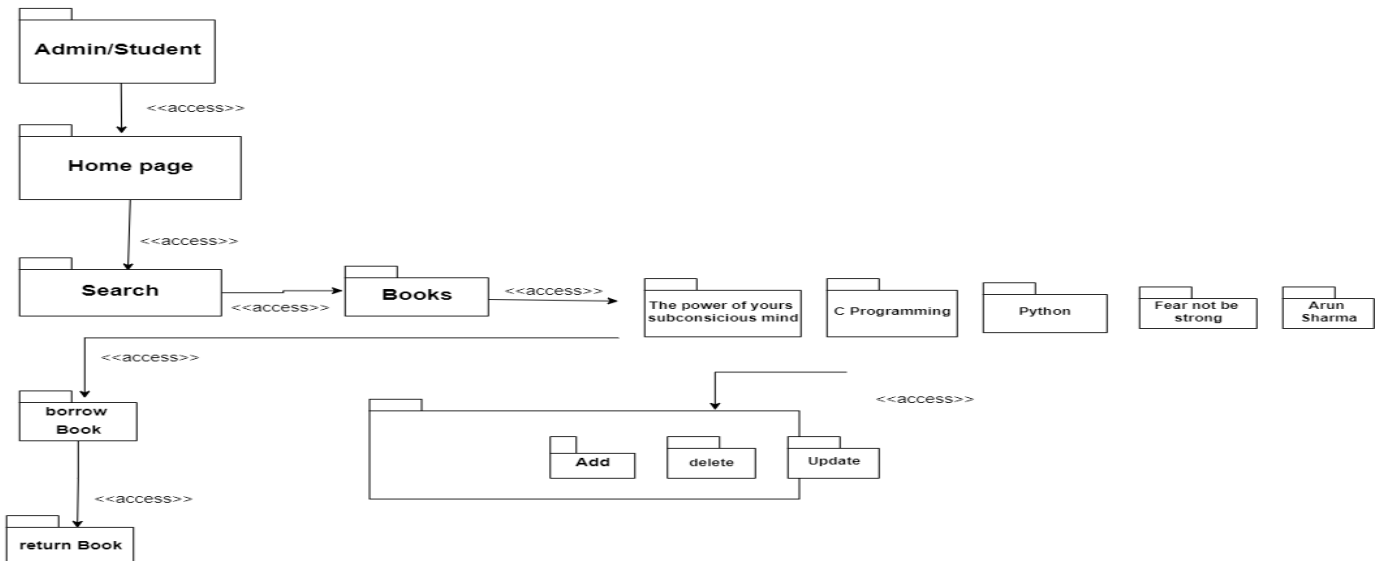
Class Diagram



Object Diagram:



Package diagram



Use case diagram

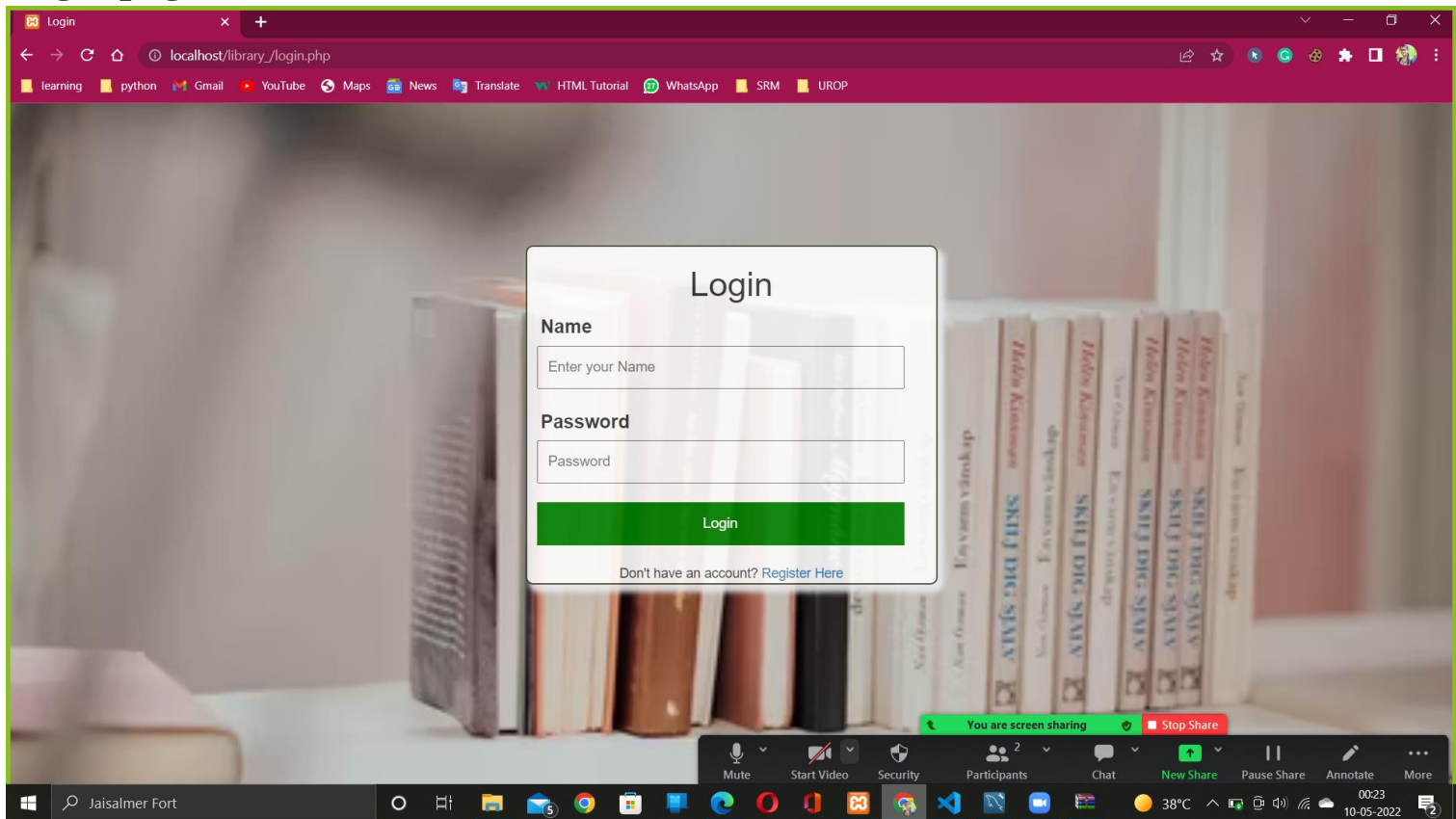


Use Case Senario:

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	<ol style="list-style-type: none">1. Student logins and logouts2. 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	<ol style="list-style-type: none">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



login

localhost/library/_login.php

learning python Gmail YouTube Maps News Translate HTML Tutorial WhatsApp SRM UROP

Login

Name

Password

Login

Don't have an account? [Register Here](#)

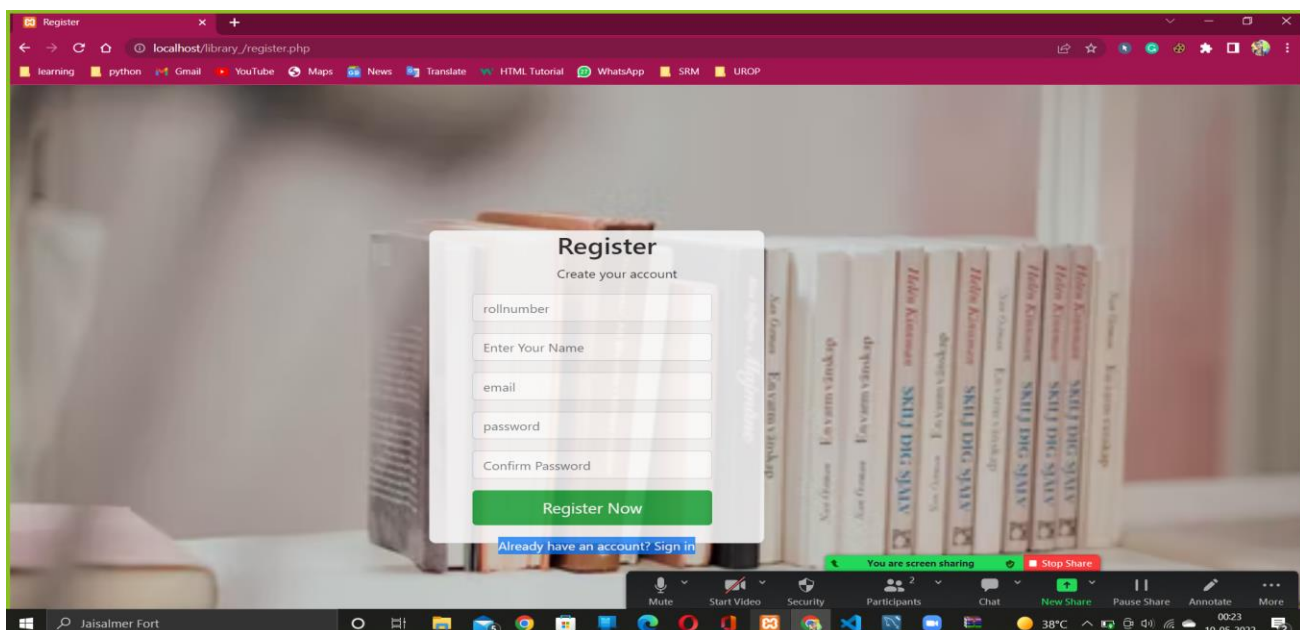
You are screen sharing Stop Share

Mute Start Video Security Participants Chat New Share Pause Share Annotate More

Jaisalmer Fort

38°C 00:23 10-05-2022

Register:



Register

localhost/library/_register.php

learning python Gmail YouTube Maps News Translate HTML Tutorial WhatsApp SRM UROP

Register

Create your account

rollnumber

email

Confirm Password

Register Now

Already have an account? [Sign in](#)

You are screen sharing Stop Share

Mute Start Video Security Participants Chat New Share Pause Share Annotate More

Jaisalmer Fort

38°C 00:23 10-05-2022

User Home Page:

Welcome

naga

Home

Issue Record

Expired list

Fines

Logout

Library Management System

Search data

id	name	Author	edition	status	available
1	Principal of electronics	V.K. Mehta, Rohit Mehta	3rd	Available	19
2	The Complete Reference C++	Herbert Schildt	4th	Available	16
3	Data Structure	Seymour Lipschutz	4th	Available	34
4					0
5	ttttttt	ggg	dddd	available	11
6	abc	xyz	daddaa	available	5

Enter Book ID

Request

User Issue Record:

Welcome

naga

Home

Issue Record

Expired list

Fines

Logout

Library Management System

Information of Borrowed Books

Username

BID

Submit

Username	Roll No	BID	Book Name	Authors Name	Edition	Issue Date	Return Date
naga	36	2	The Complete Reference C++	Herbert Schildt	4th	2022-05-09	2022-04-20
naga	36	5	ttttttt	ggg	dddd	2022-05-09	2022-04-30
naga	36	2	The Complete Reference C++	Herbert Schildt	4th	2022-05-09	2022-05-01
naga	36	5	ttttttt	ggg	dddd	2022-05-09	2022-05-08
naga	36	1	Principal of electronics	V.K. Mehta, Rohit Mehta	3rd	2022-05-09	2022-05-15
naga	36	3	Data Structure	Seymour Lipschutz	4th	2022-05-09	2022-05-16

Expired list:

Welcome

naga

Home

Issue Record

Expired list

Fines

Logout

Library Management System

RETURNED

EXPIRED

Your fine is: \$ 11473.7

Username	Roll No	BID	Book Name	Authors Name	Edition	Status	Issue Date	Return Date
naga	36	6	abc	xyz	daddaa	RETURNED	2022-05-09	2022-06-16
naga	36	2	The Complete Reference C++	Herbert Schildt	4th	RETURNED	2022-05-09	2022-05-20
naga	36	1	Principal of electronics	V.K. Mehta, Rohit Mehta	3rd	RETURNED	2022-05-09	2022-05-15
naga	36	5	ttttttt	ggg	dddd	RETURNED	2022-05-09	2022-05-08
naga	36	2	The Complete Reference C++	Herbert Schildt	4th	RETURNED	2022-05-09	2022-05-01
naga	36	5	ttttttt	ggg	dddd	RETURNED	2022-05-09	2022-04-30
naga	36	2	The Complete Reference C++	Herbert Schildt	4th	RETURNED	2022-05-09	2022-04-20

Fine:

Welcome

naga

Home

Issue Record

Expired list

Fines

Logout

Library Management System

List Of Students

Username	Bid	Returned	Days	Fines in \$	Status
naga	2	2022-05-09 8	0.8		not paid
naga	5	2022-05-09 1	0.1		not paid
naga	3	2022-05-09 19120 1912			not paid
naga	3	2022-05-09 19120 1912			not paid
naga	3	2022-05-09 19120 1912			not paid
naga	3	2022-05-09 19120 1912			not paid
naga	3	2022-05-09 19120 1912			not paid
naga	2	2022-05-09 8	0.8		not paid
naga	6	2022-05-09 0	0		not paid
naga	1	2022-05-09 0	0		not paid
naga	1	2022-05-09 0	0		not paid

Add new books:

The screenshot shows a web browser window with the URL `localhost/library/_addbook.php`. The page title is "Library Management System" and the main heading is "Add New Books". On the left is a sidebar with a "Welcome" message and a list of links: Home, Add Book, Request Book, Issue Record, Expired list, and Logout. The main content area contains a form with the following fields:

- Book Name:
- Book Author:
- Book Edition:
- Book Available:
- Quantity:

Below the fields is a blue "Add Book" button. The background of the page shows a blurred image of books on a shelf.

Requested Books:

The screenshot shows a web browser window with the URL `localhost/library/_admin_request.php`. The page title is "Library Management System". On the left is a sidebar with a "Welcome" message and a list of links: Home, Add Book, Request Book, Issue Record, Expired list, and Logout. The main content area contains a form with two input fields: "Username" and "BID (book id)", and a "Submit" button. Below the form is a table with the following data:

Username	Roll No	BID	Book Name	Authors Name	Edition	Status
naga	36	5	tttttt	ggg	dddd	available
naga	36	1	Principal of electronics	V.K. Mehta, Rohit Mehta	3rd	Available

Issue record:

Welcome
Nobonita

Home
Add Book
Request Book
Issue Record
Expired list
Logout

Library Management System

Information of Borrowed Books

Username	Roll No	BID	Book Name	Authors Name	Edition	Issue Date	Return Date
naga	36	3	Data Structure	Seymour Lipschutz	4th	2022-05-09	2022-05-16
Afifa	1510047	1	Principal of electronics	V.K. Mehta, Rohit Mehta	3rd	2022-05-09	2022-05-16
naga	36	3	Data Structure	Seymour Lipschutz	4th	2022-05-09	2022-05-16
Afifa	1510047	1	Principal of electronics	V.K. Mehta, Rohit Mehta	3rd	2022-05-09	2022-05-16
naga	36	3	Data Structure	Seymour Lipschutz	4th	2022-05-09	2022-05-16

Expired list:

Welcome
Nobonita

Home
Add Book
Request Book
Issue Record
Expired list
Logout

Library Management System

RETURNED **EXPIRED**

Username
BID
Submit

Username	Roll No	BID	Book Name	Authors Name	Edition	Status	Issue Date	Return Date
Divya Sri Yamali	15	2	The Complete Reference C++	Herbert Schildt	4th	RETURNED	2022-05-09	2022-09-21
naga	36	6	abc	xyz	daddaa	RETURNED	2022-05-09	2022-06-16
naga	36	2	The Complete Reference C++	Herbert Schildt	4th	RETURNED	2022-05-09	2022-05-20
naga	36	1	Principal of electronics	V.K. Mehta, Rohit Mehta	3rd	RETURNED	2022-05-09	2022-05-15
naga	36	5	tttttt	ggg	dddd	RETURNED	2022-05-09	2022-05-08
naga	36	2	The Complete Reference C++	Herbert Schildt	4th	RETURNED	2022-05-09	2022-05-01
naga	36	5	tttttt	ggg	dddd	RETURNED	2022-05-09	2022-04-30
meghana	12	2	The Complete Reference C++	Herbert Schildt	4th	EXPIRED	2022-05-09	2022-04-25
naga	36	2	The Complete Reference C++	Herbert Schildt	4th	RETURNED	2022-05-09	2022-04-20

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:

[HTML Styles \(w3schools.com\)](#)

[SQL CREATE DATABASE Statement \(w3schools.com\)](#)

[JavaScript DOM CSS \(w3schools.com\)](#)

<http://ignousupport.blogspot.com/p/library-management-system-project-report.html?m=1>

[CSS Multiple Backgrounds \(w3schools.com\)](#)