SOFTWARE ENGINERRING

PROJECT REPORT ON

LIBRARY MANAGEMENT SYSTEM

Submitted by

AP19110010008 Desu Yasaswini

AP19110010009 Sindhu Medarametla

AP19110010068 Vamsee Chilukuri

AP19110010072 Girish Neelisetti

for the course

CSE 305 – Software Engineering

Guided by

Dr. Arnab Mitra

SRM UNIVERSITY, AMARAVATI

ANDHRA PRADESH

Table of Contents

S

Abstract

Library is a place where all the books are available. Library management system is all about the development of the computerized system that helps us in our daily work. This program has basic features that are useful for the librarian.

The main objective of this library management system is organizing and managing the library tasks. Its main objective is to help the admin in monitoring the whole system. In the login page we have login and the availability of books so that the user can get access to the available books without login in. The admin will have to login to the website. After logging into his account, the admin can perform various tasks by the generated options such as availability of books, details of the new books, updates of books, issue of books, books returning details, due dates, details of the books borrowed by the user.

Hence, the library management system is being developed to help the admin to help him maintain the library in the best way possible. And this report is going to include system planning, requirement analysis, proposed scheme, results or screenshots, system design, programming, system testing, evaluation of the project and reference.

Introduction

The main objective of the project on Library Management System is to manage the details of students, Book issues, book returns, librarian, suggestions, and query portal for rectifying the problems and maintain detailed report about books and author details in a digital methodology for betterment of users.

The purpose of the Library Management System is to automate the pre-existing manual book-entry system with the help of computerized equipment. So that their valuable data/information can be stored for a longer period with easily accessing and manipulating the same.

As described above this project mainly focuses on an error-free, secure, reliable, and fast management system. It can assist the user to concentrate on the information about the books present in the library, their authors, their members of the library to whom books are issued. Maintenance of all these works manually is a very difficult task. So, by owning to the advancement of technology, it is designed to computerize the operations performed over information like members, books issues, and returns, checking the availability of books in the library, searching for a particular book as well as a member or user, and all other operations. This computerization of the library helps in many instances of its maintenances. It reduces the workload of management as most of the manual work done is reduced. Basically, the project describes how to manage for good performance and better services for the clients.

Literature Review

Library [2] is regarded as the brain of any institutes, of course many institutes understand the importance of the library to the growth of the institute and their esteem users which we categorically call the students. The library management system is a library management software for monitoring and controlling the transactions in a library.

Before the advent of computer in modern age there are different methods of keeping records in the library. Records are kept in the library on shelves and each shelf are labelled in an alphabetical or numerical order, our task is replacing it with the automated system to issue, return books and also can create new admin for the library and also can view available books in the library in order to avoid the long-standing queues.

As comparison with the library system of our university [1] we have an additional feature that the students can check the available books and also the number of books available in the library and also there is a website for the students who can surf through the features and books of different genres and can request books needed. [3] is developed using WordPress, which is opensource, it mostly doesn't require any HTML code, its needs PHP code to manage a website.

In [4] this provides admin login, add and update books, choice selection, fine calculation, but it failed to provide user login in their website. The LMS project rejects the utilization of administrative work by dealing with all the book data. The admin can continue refreshing the framework by giving new books appearance in the framework and their accessibility.

[5] This is completely dynamic Library Management System, because under this system we can configured a day limit to keep a book, how many fines charge late return of book per day, how many book can be issue by single user etc. [7] An automated library system contains various function like circulation, cataloguing, serials and OPAC which works on common database. Human error can be minimized because the records are entered only once and changes were synchronously affected in the database too [8]. [10] Earnshaw talked about the old libraries and the problems with keeping records in his piece. A book was helpful irreducible information deposit that can be read reviewed, criticised, and provided the foundation for expansion of its ideas into further volumes.

[9] Information is no longer exclusively library-centric but is also network-centric. The centre of gravity has moved from information provision to information access. Online search (via engines such as Google) is replacing physical search. Combining the best of both worlds i.e., the traditional library and the online search – to meet the developing requirements of users is a key challenge for the future.

System Requirements

Hardware Interfaces

- Processor: Dual-core CPU
- Hard Disk: 40GB
- RAM: 256MB or more

Software Interfaces

- This software is developed using HTML 5.0/ CSS W3 and JS ES2015 as the front end. Xampp Server (Maria DB) as the back end to store the database.
- Operating System: Windows 7 and above.
- Language: HTML 5.0/ CSS W3, JS ES2015 (front end), PHP 7.4 (middle ware).
- Database: Xampp Server: Maria Database (back end).

Communications Interfaces

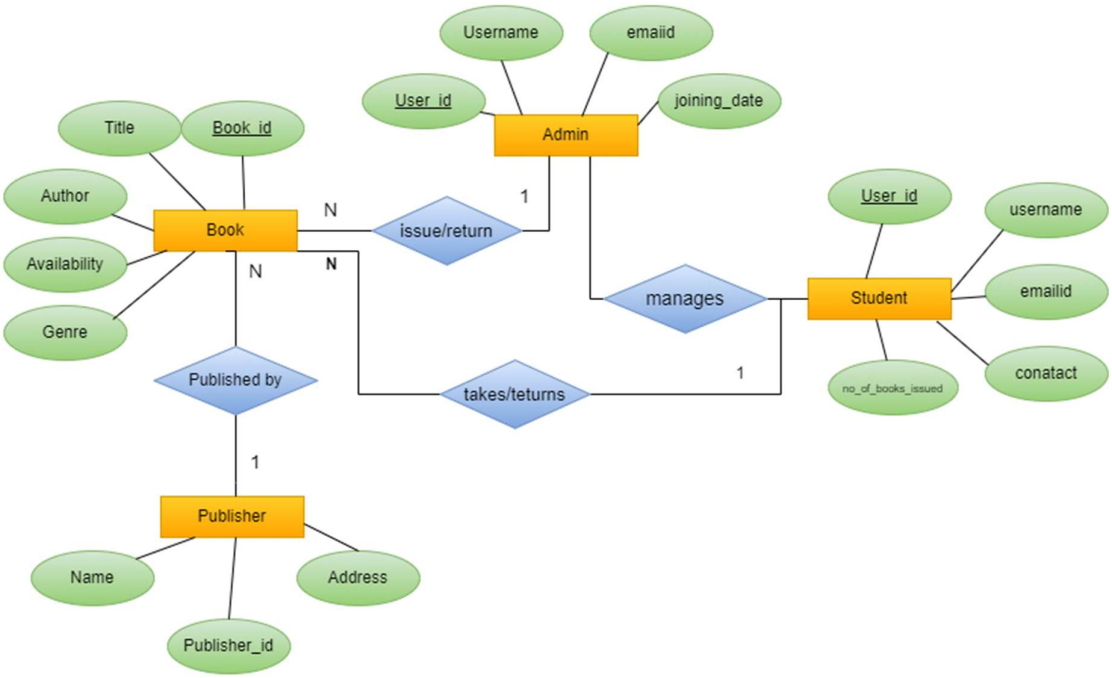
The online Library System will be connected through the local host server

Login Credentials:

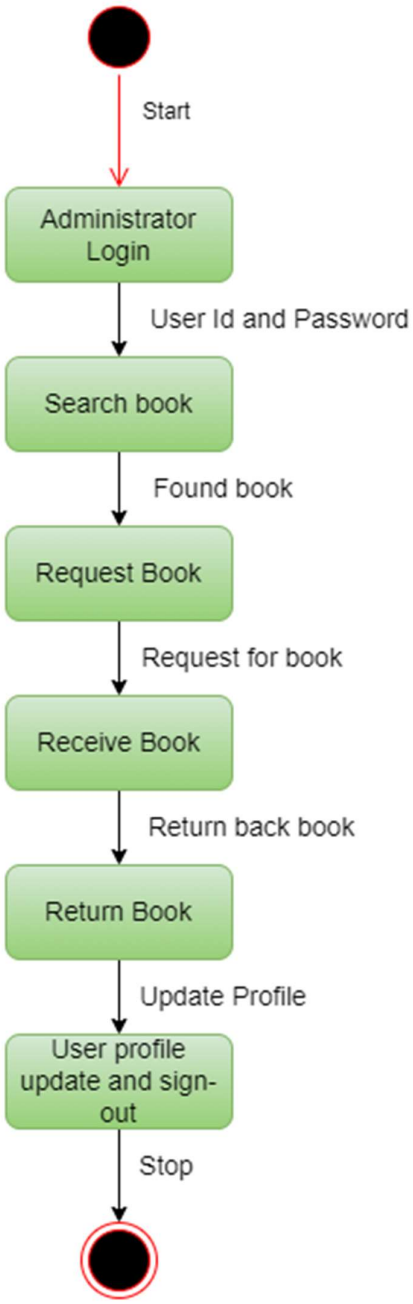
Username: admin
Password: test123

Proposed Scheme

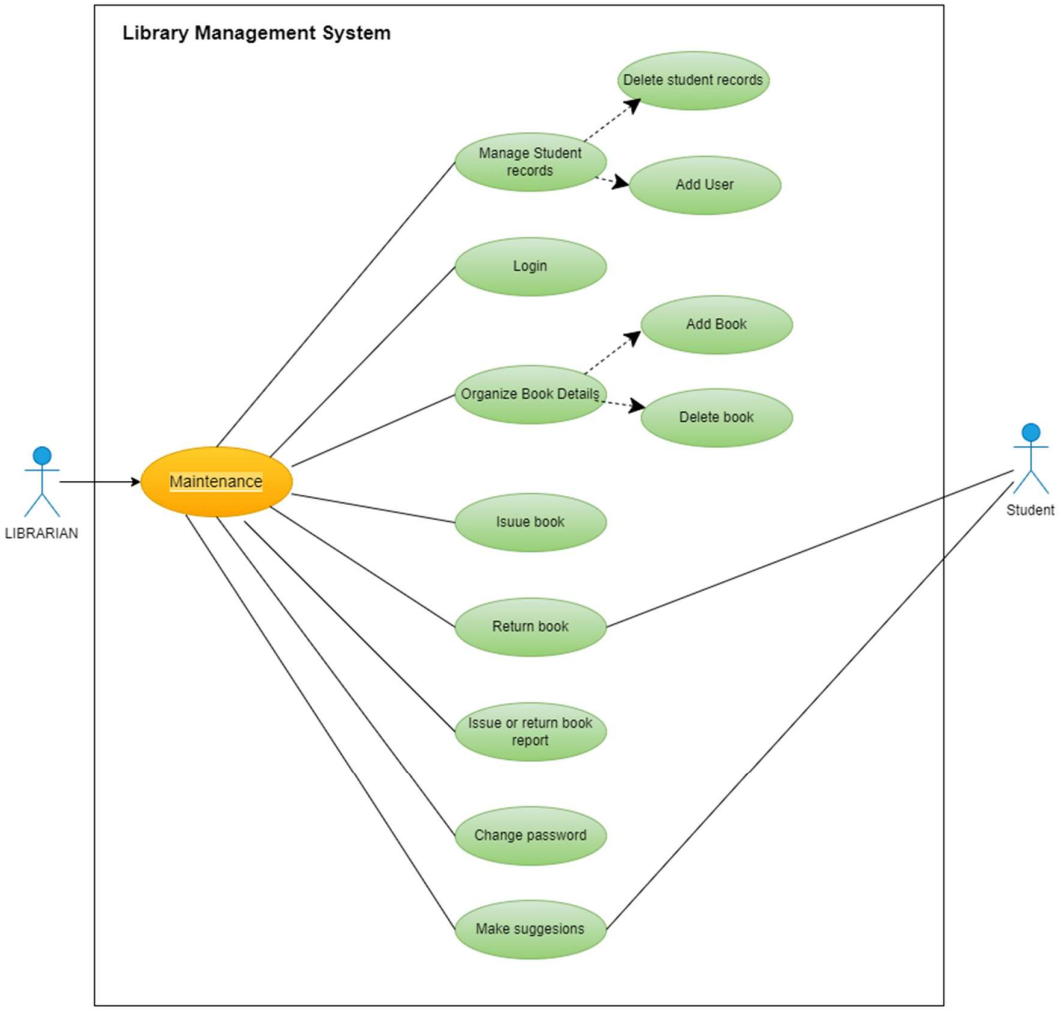
ER Diagram



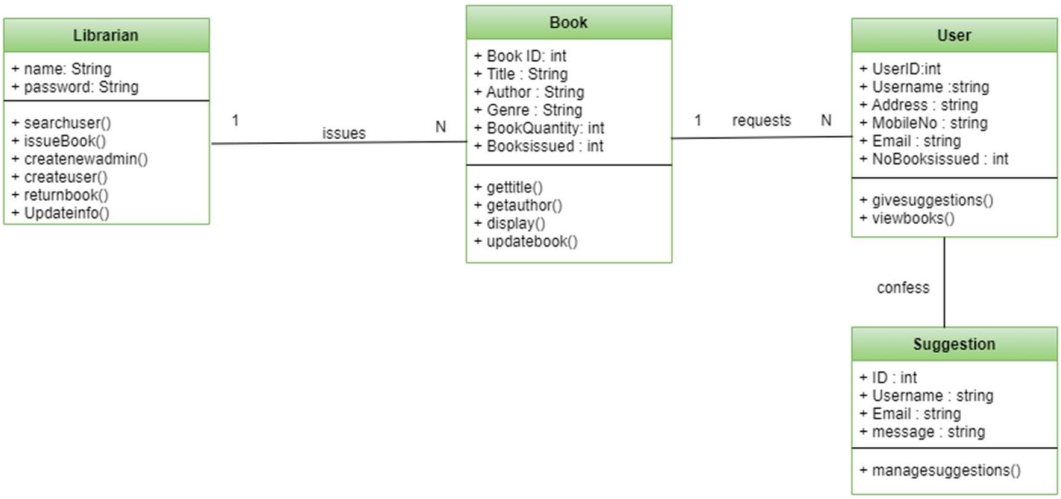
State Chart


Start
Administrator Login
User Id and Password
Search book
Found book
Request Book
Request for book
Receive Book
Return back book
Return Book
Update Profile
User profile update and sign-out
Stop

Use case diagram

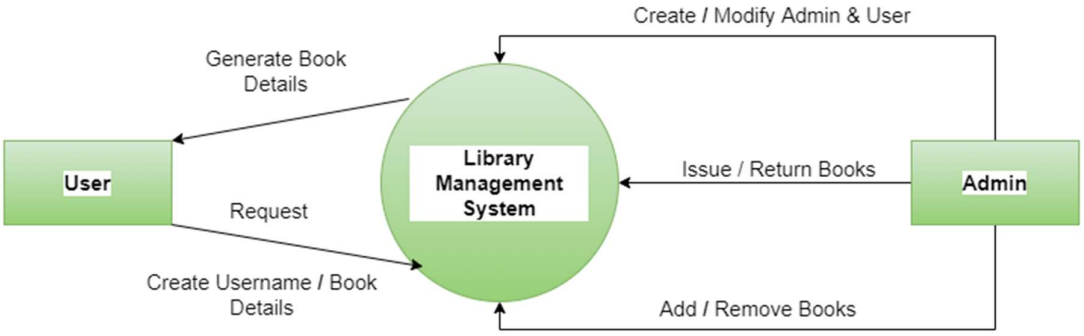


Class Diagram

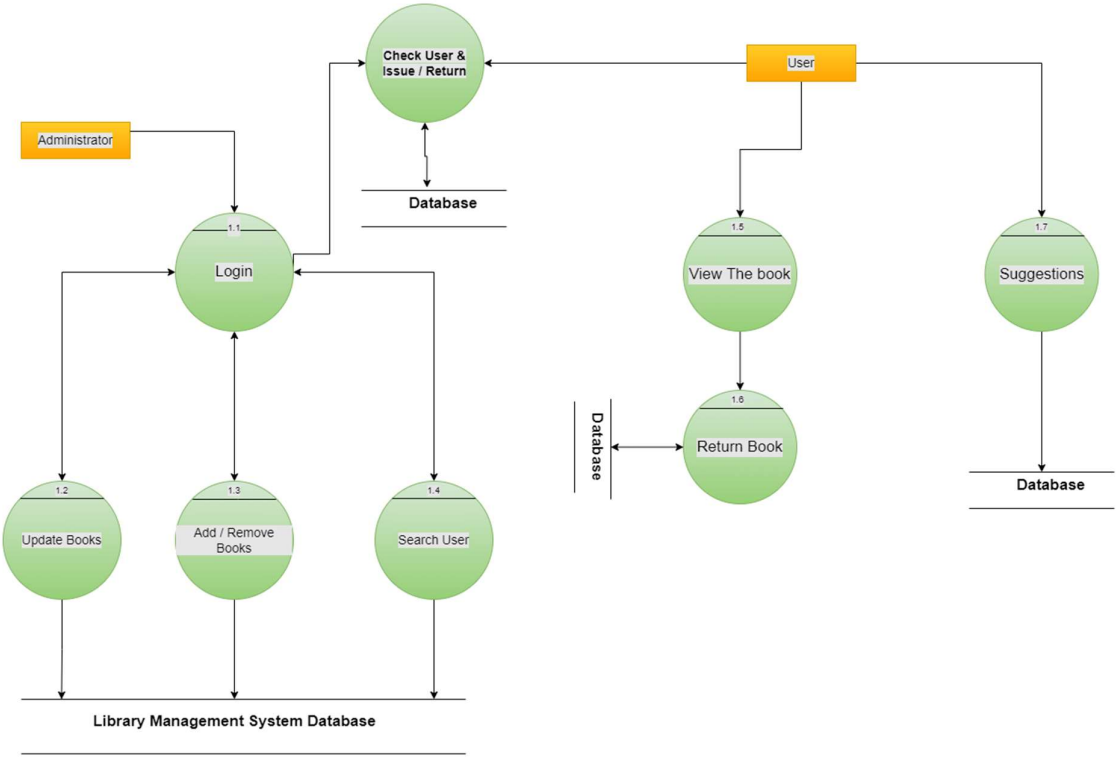


Data Flow Diagram

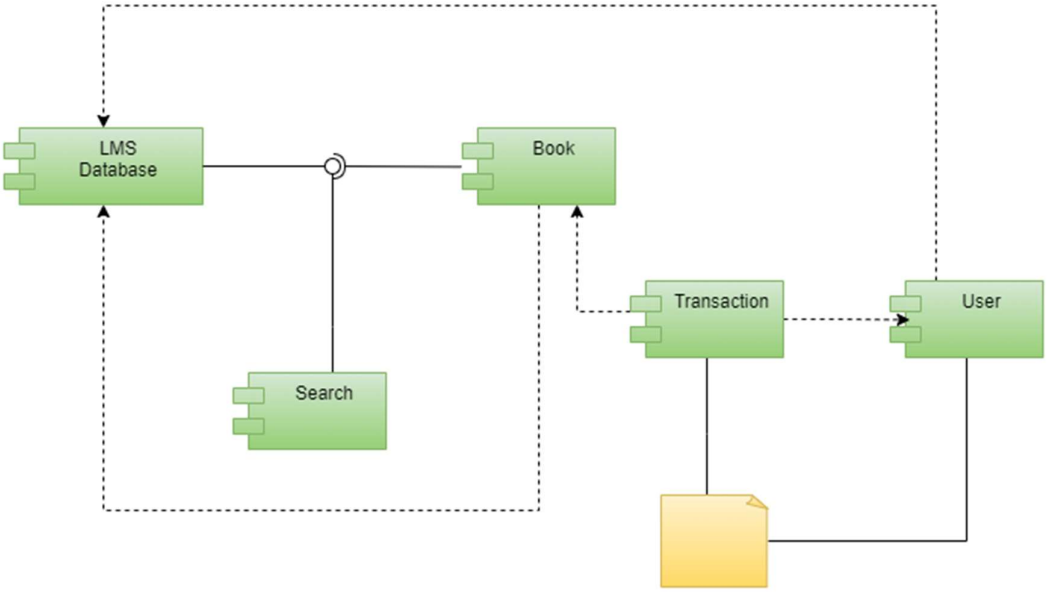
Level-0 DFD



Level-1 DFD

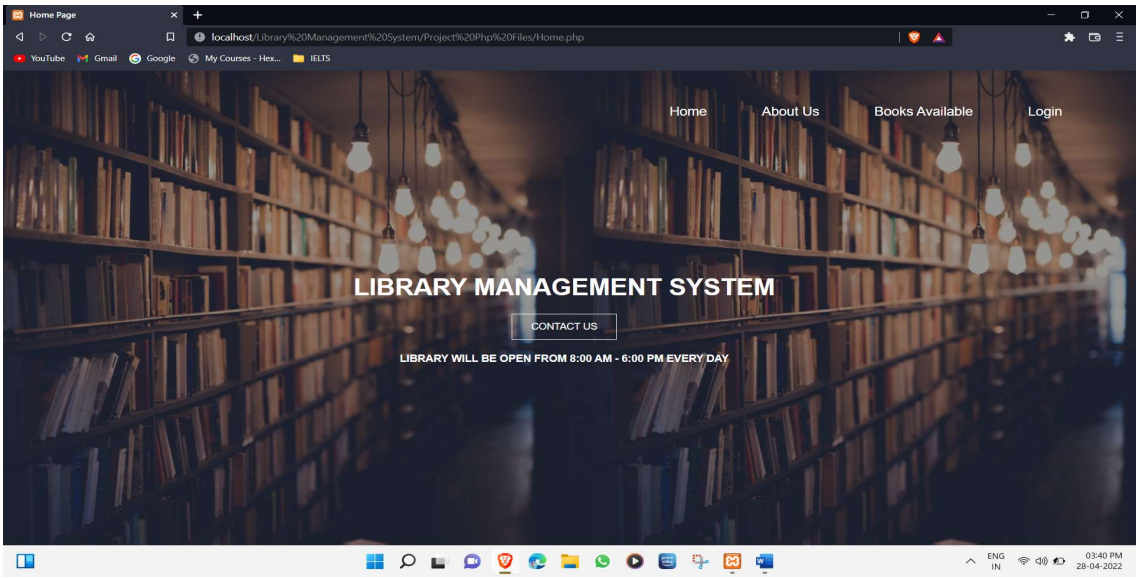


Component Diagram

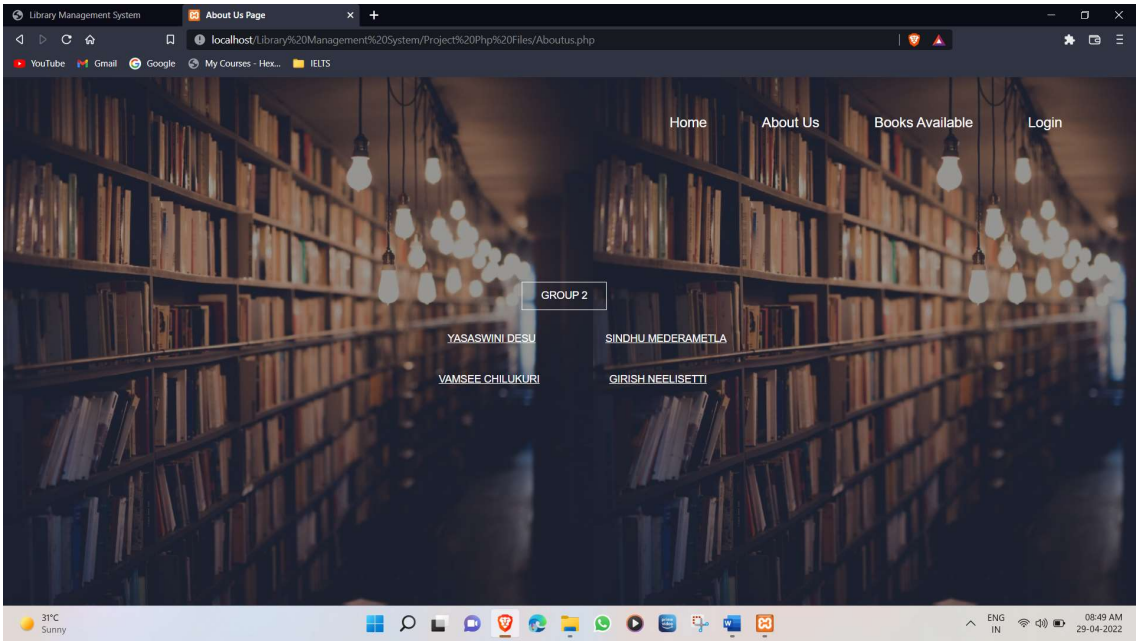


Results and Screenshots

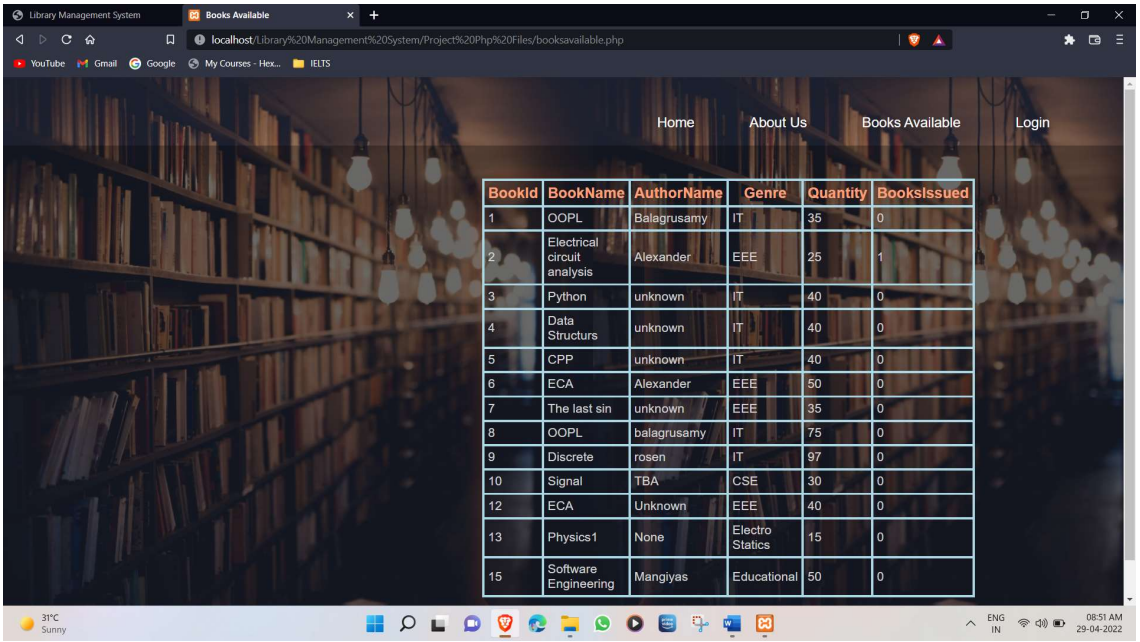
LMS Home Page:



About us:

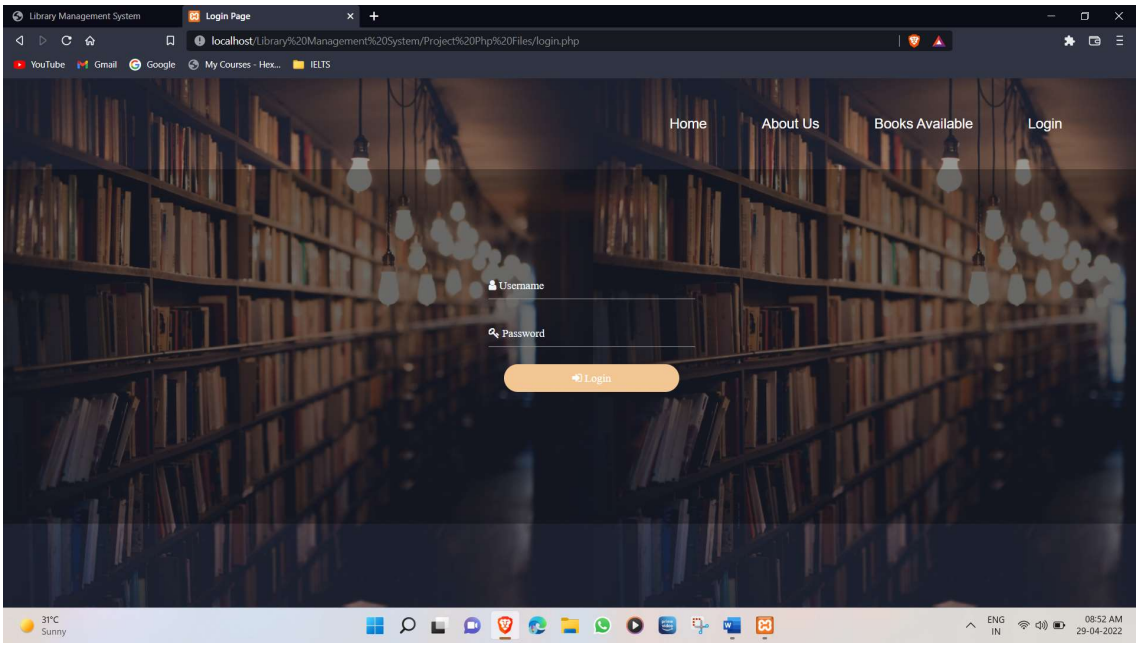


Books Available:

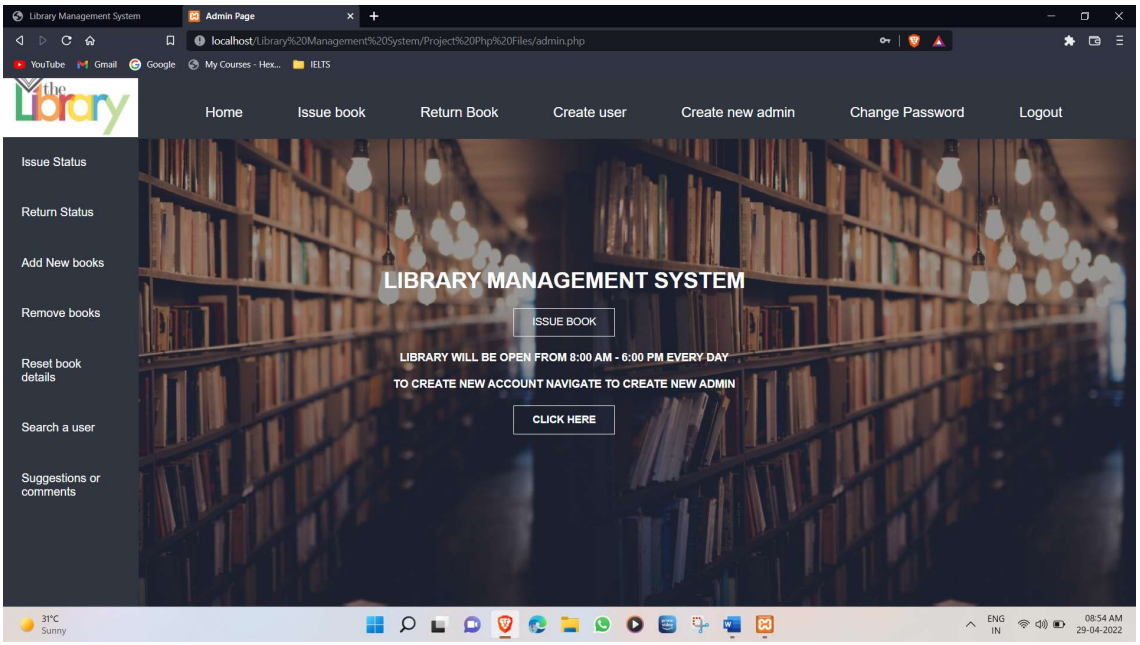


BookId	BookName	AuthorName	Genre	Quantity	BooksIssued
1	OOPL	Balagrusamy	IT	35	0
2	Electrical circuit analysis	Alexander	EEE	25	1
3	Python	unknown	IT	40	0
4	Data Structurs	unknown	IT	40	0
5	CPP	unknown	IT	40	0
6	ECA	Alexander	EEE	50	0
7	The last sin	unknown	EEE	35	0
8	OOPL	balagrusamy	IT	75	0
9	Discrete	rosen	IT	97	0
10	Signal	TBA	CSE	30	0
12	ECA	Unknown	EEE	40	0
13	Physics1	None	Electro Statics	15	0
15	Software Engineering	Mangiyas	Educational	50	0

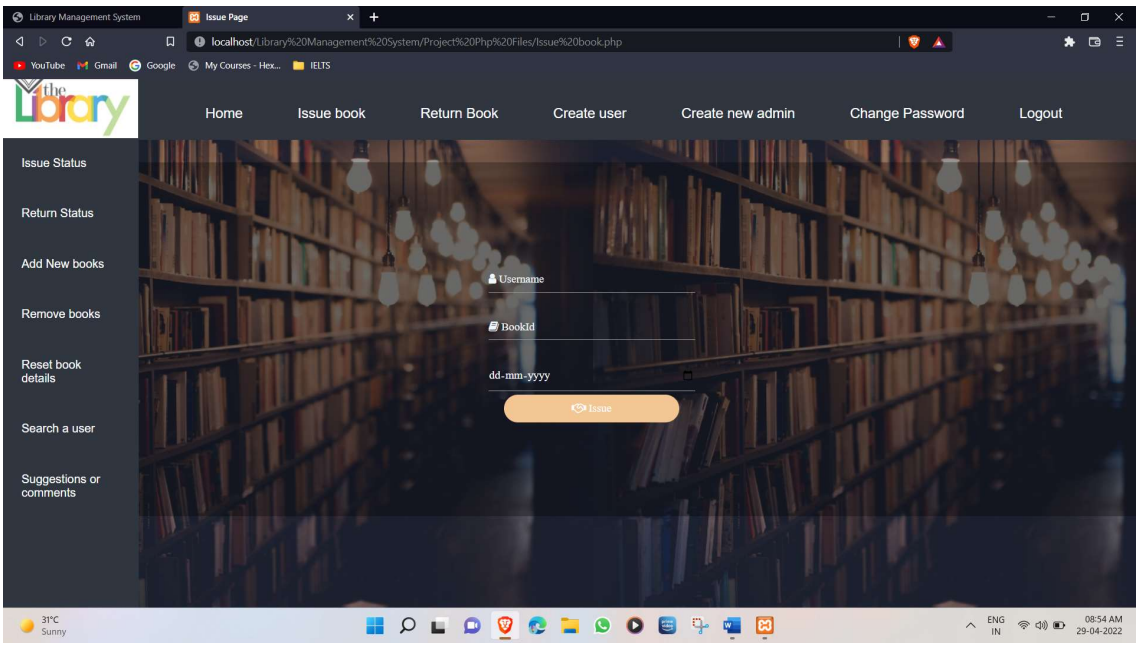
Login



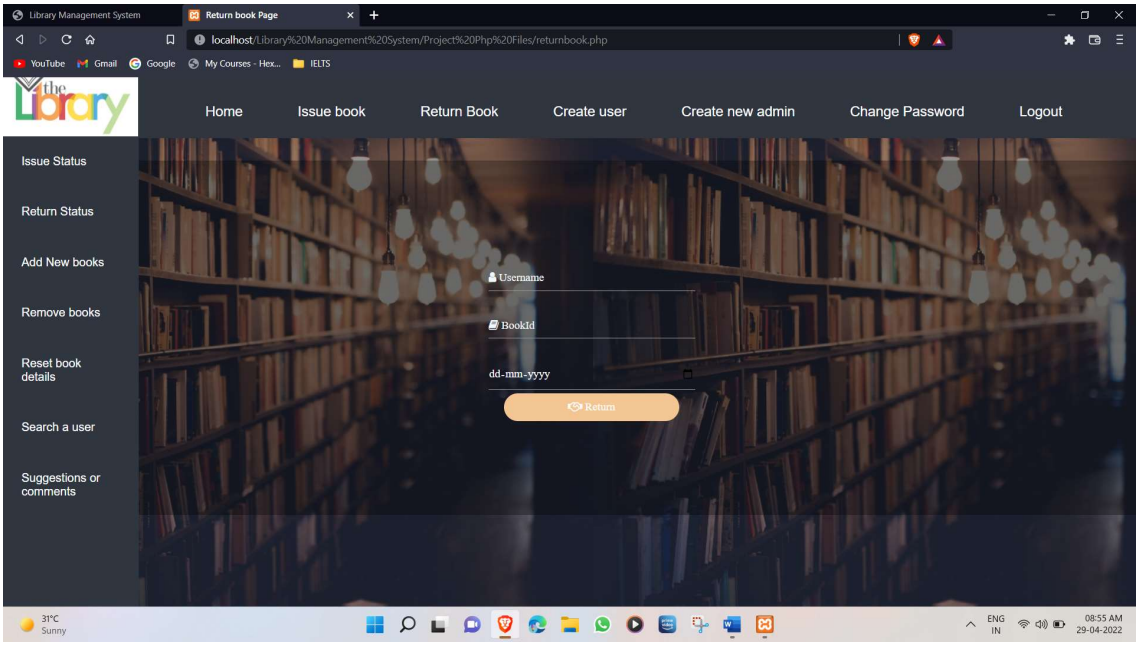
Admin Page:



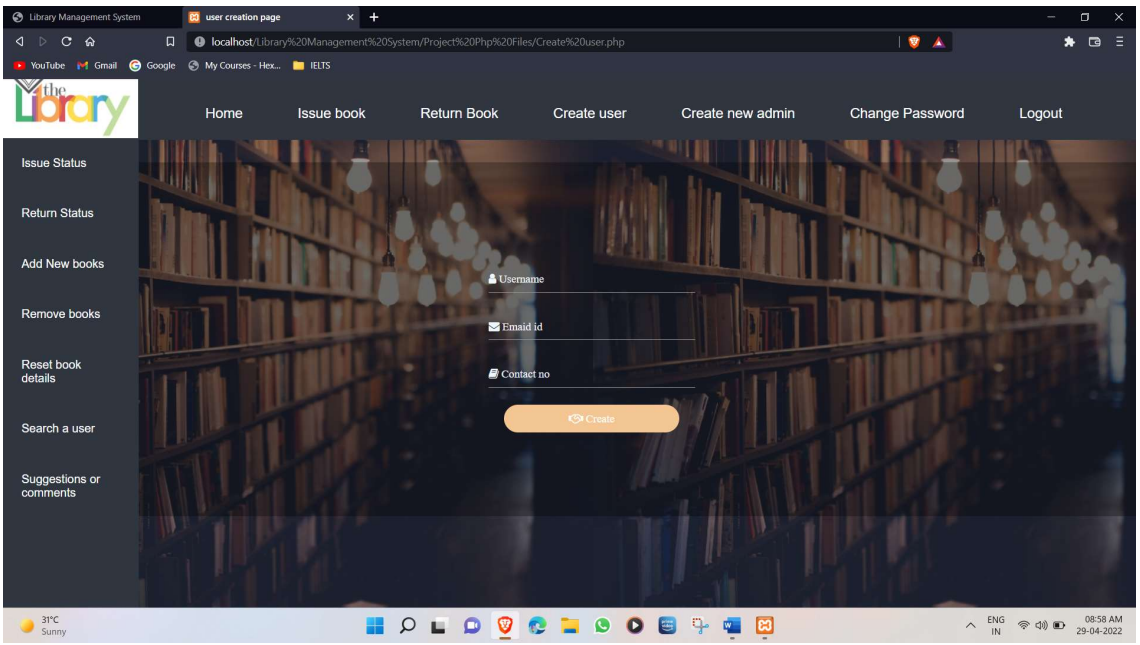
Issue Book:



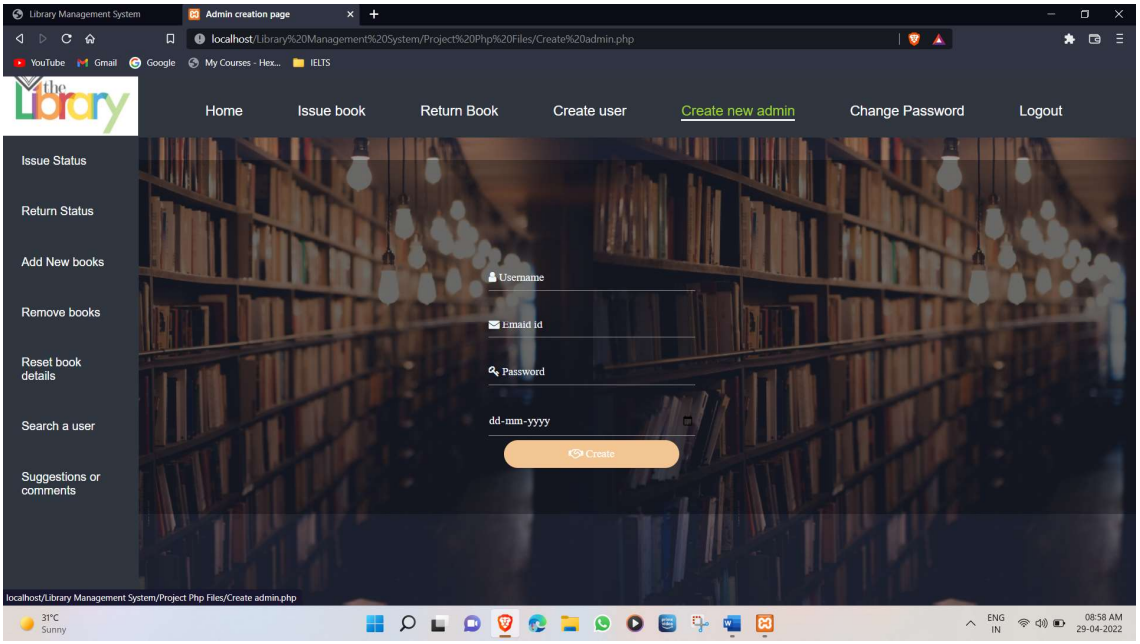
Return Book:



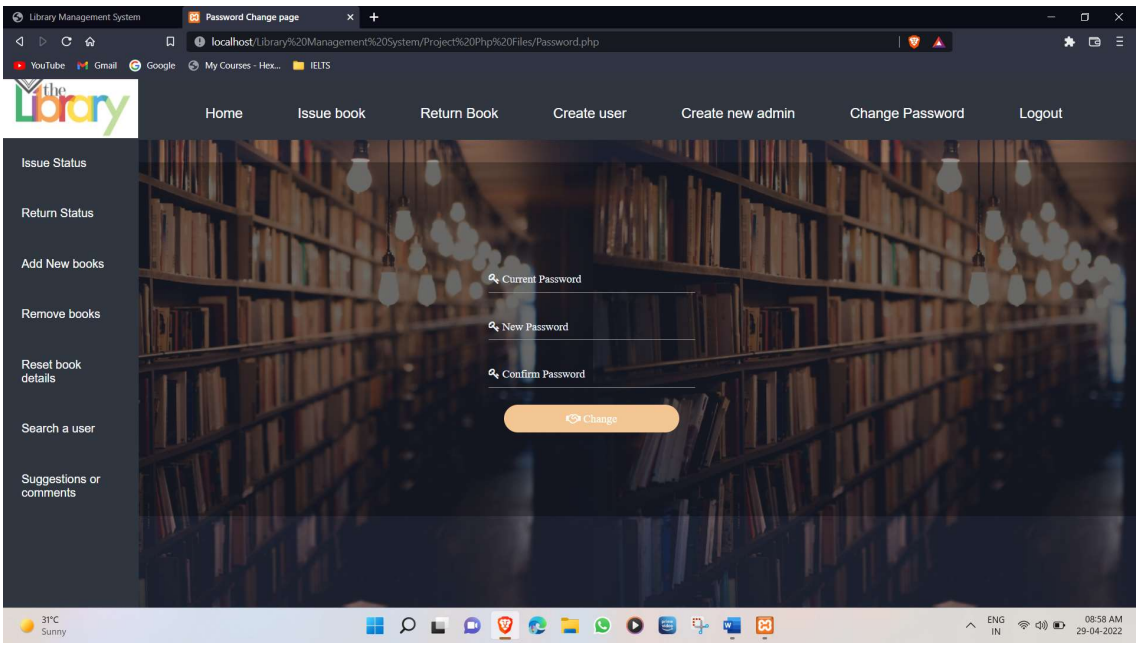
Create User:



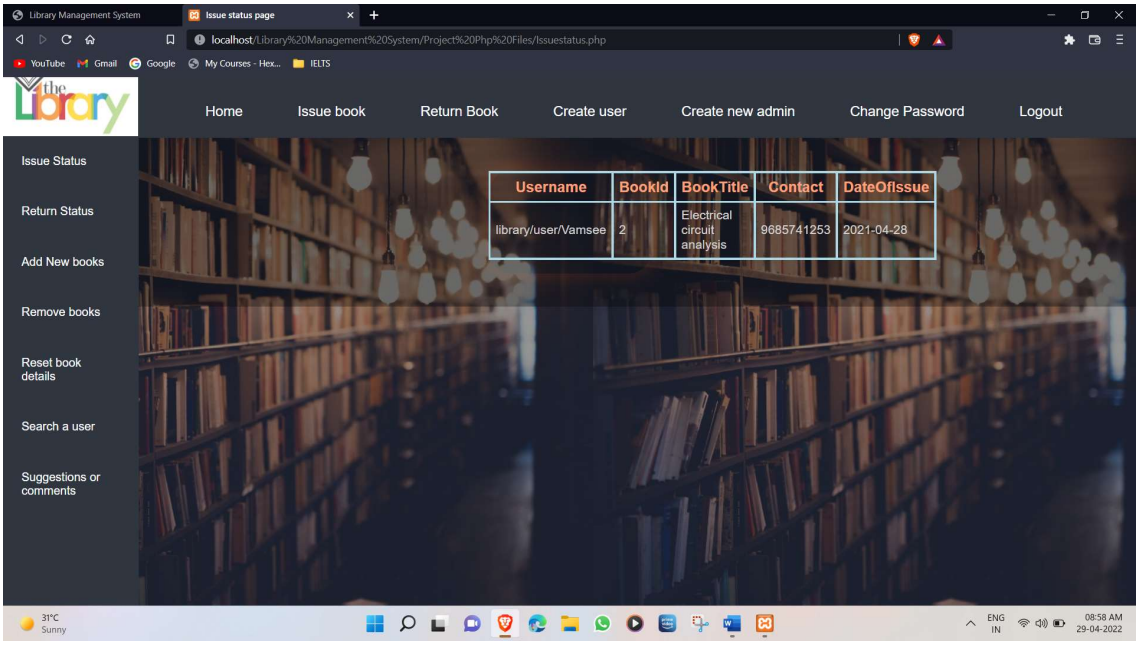
Create New Admin:



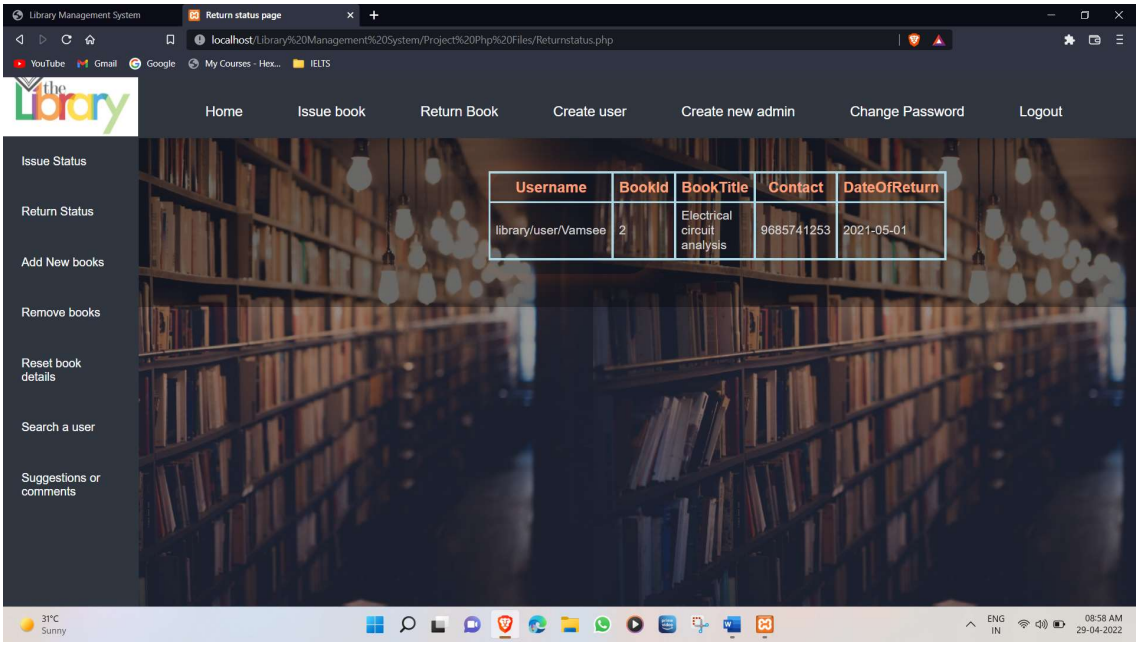
Change Password:



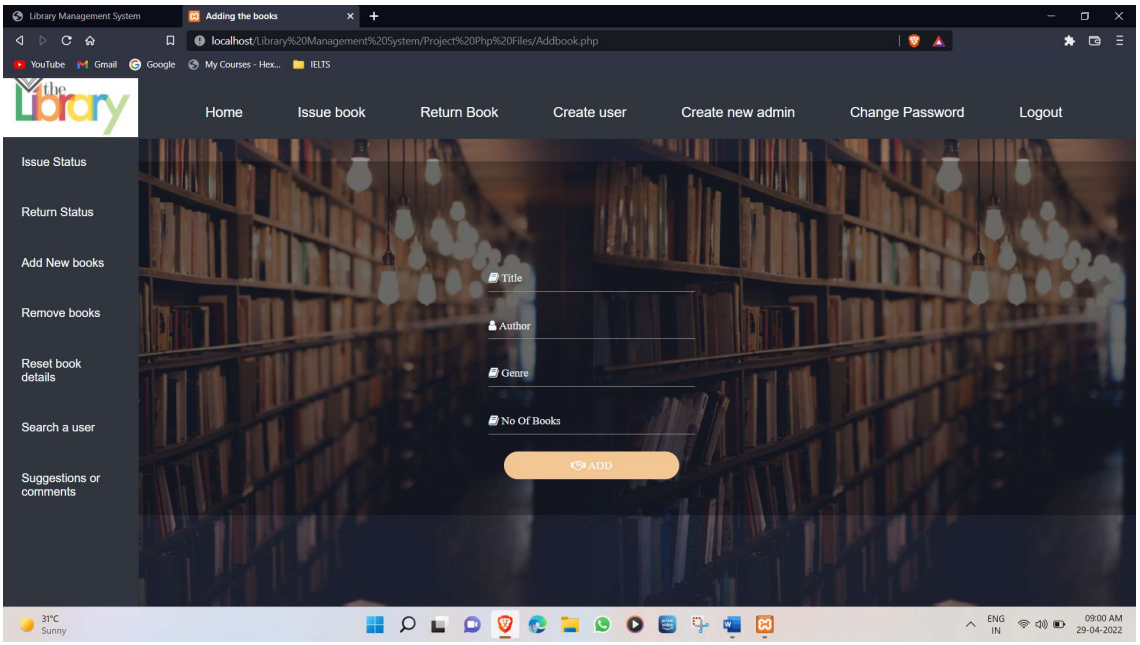
Issue status:



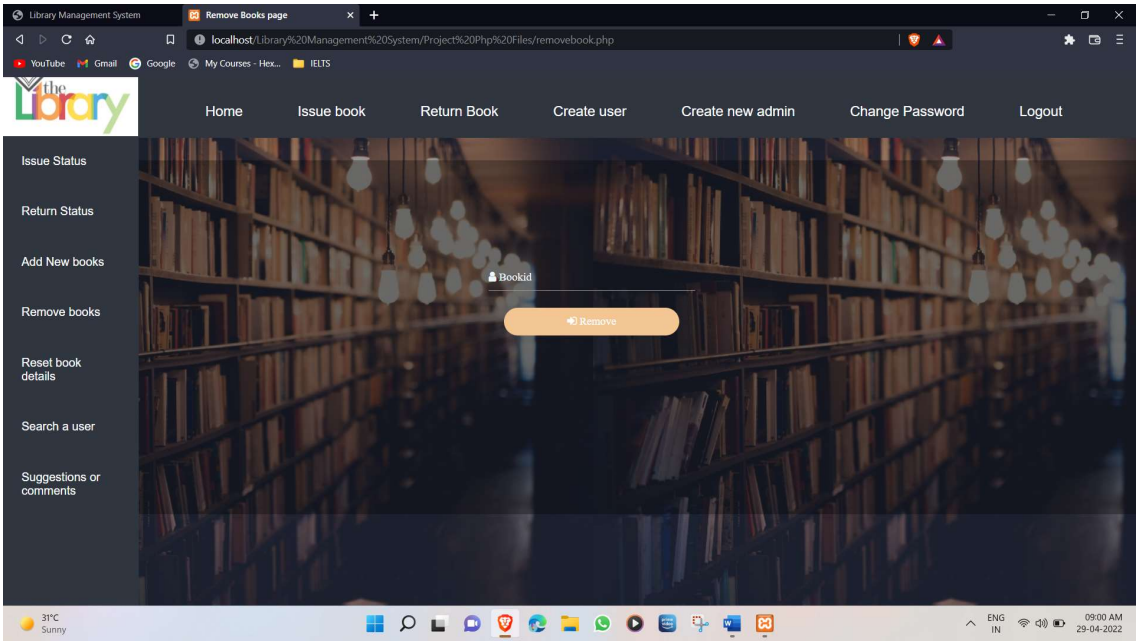
Return Status:



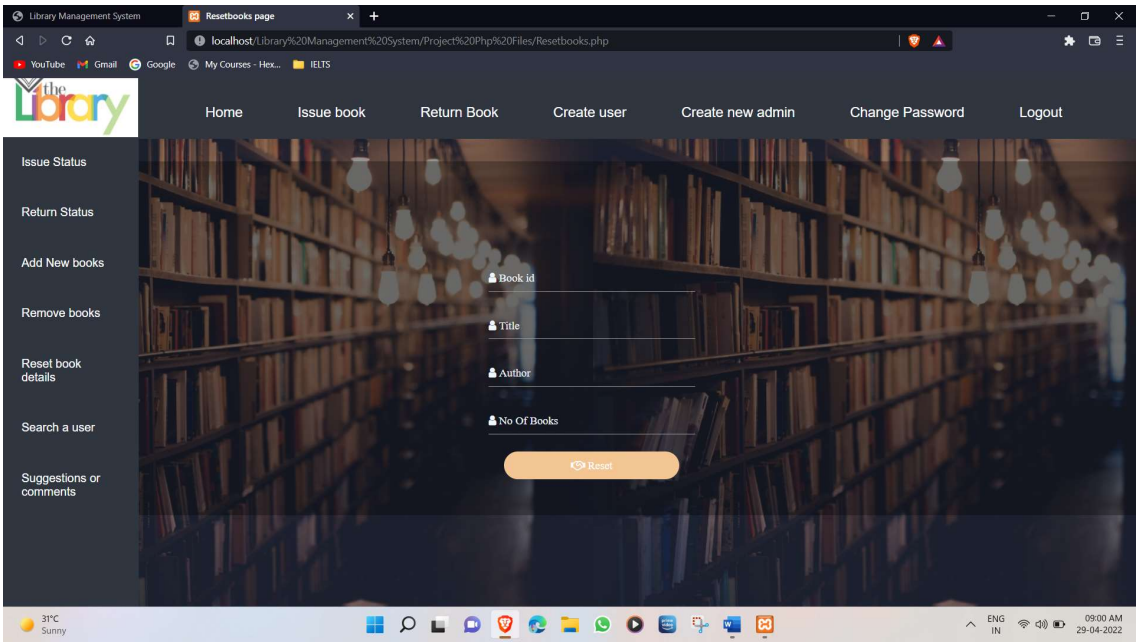
Add new books:



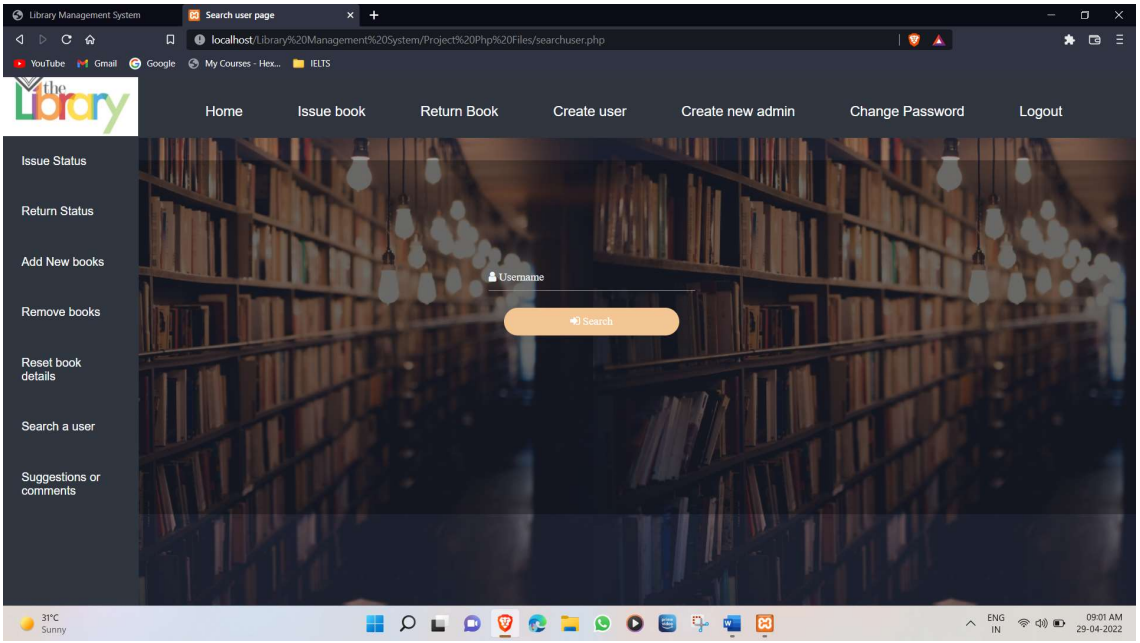
Remove Books:



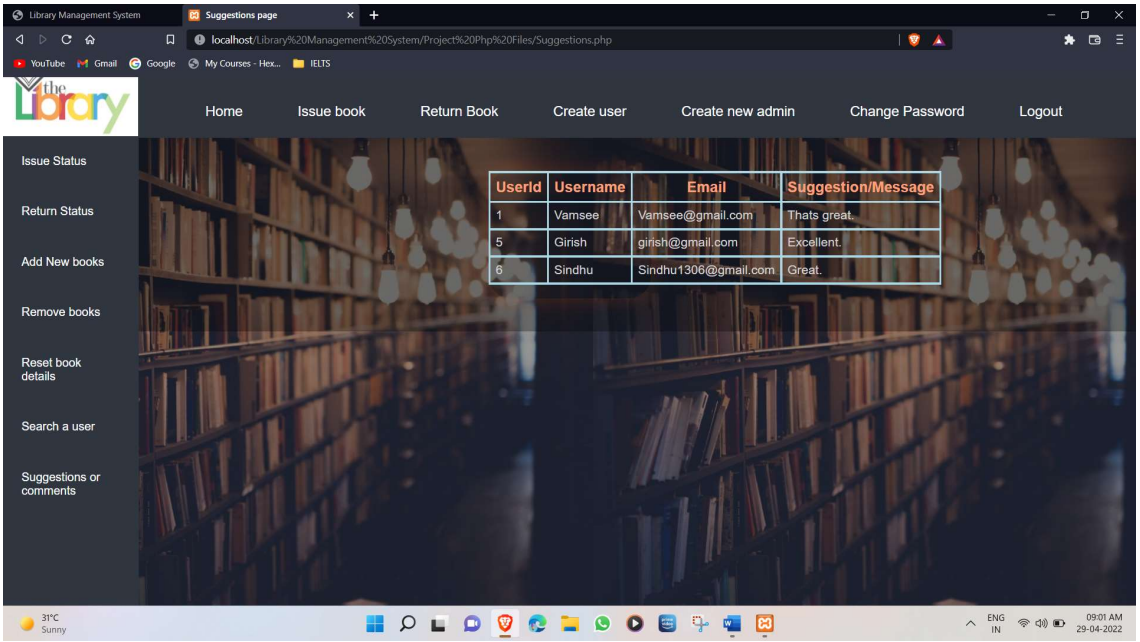
Reset Book Details:



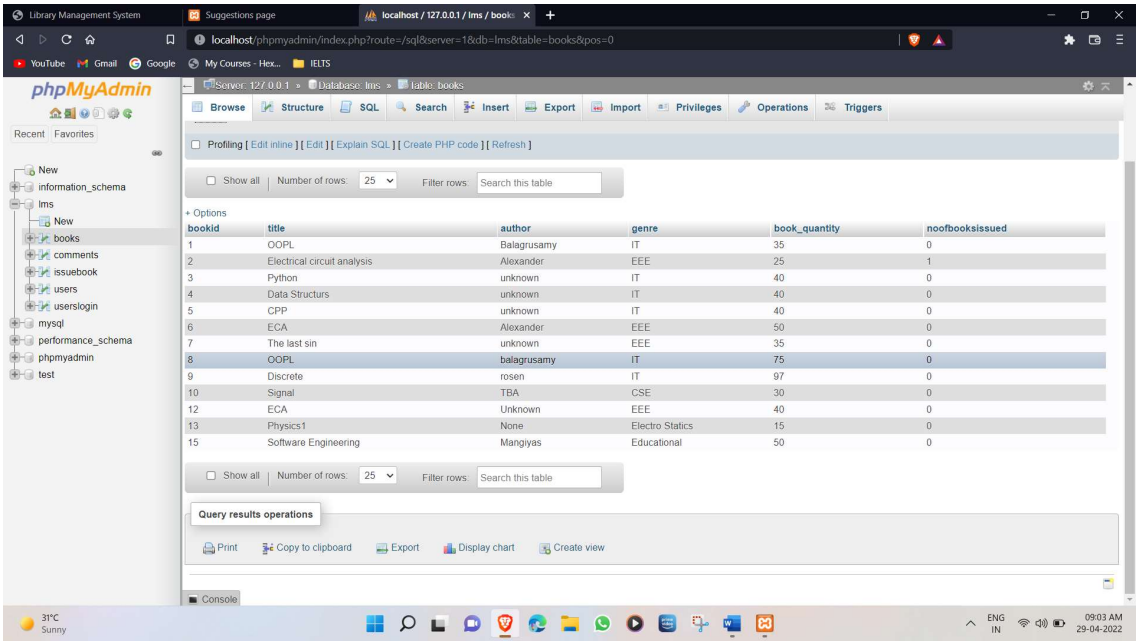
Search User:



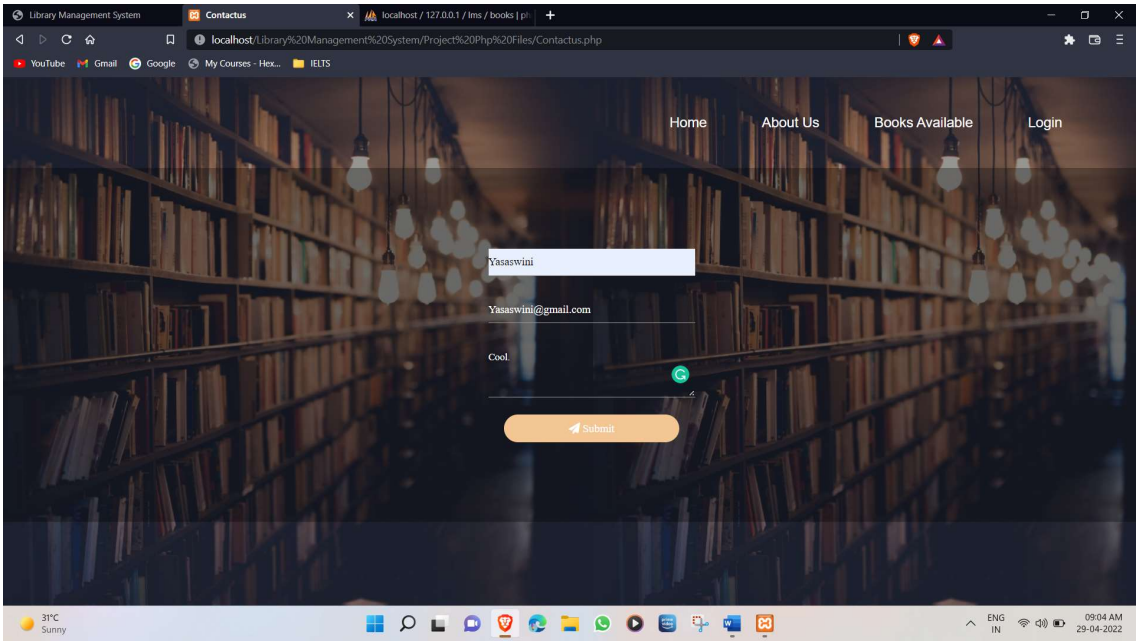
Suggestions:

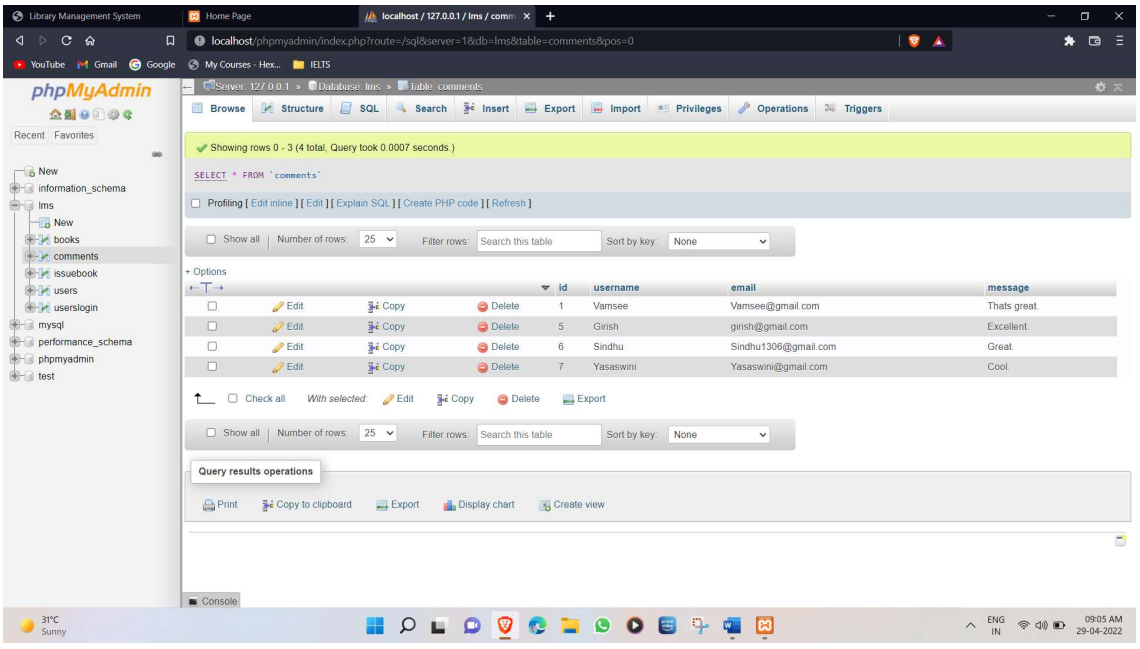


Books Available:

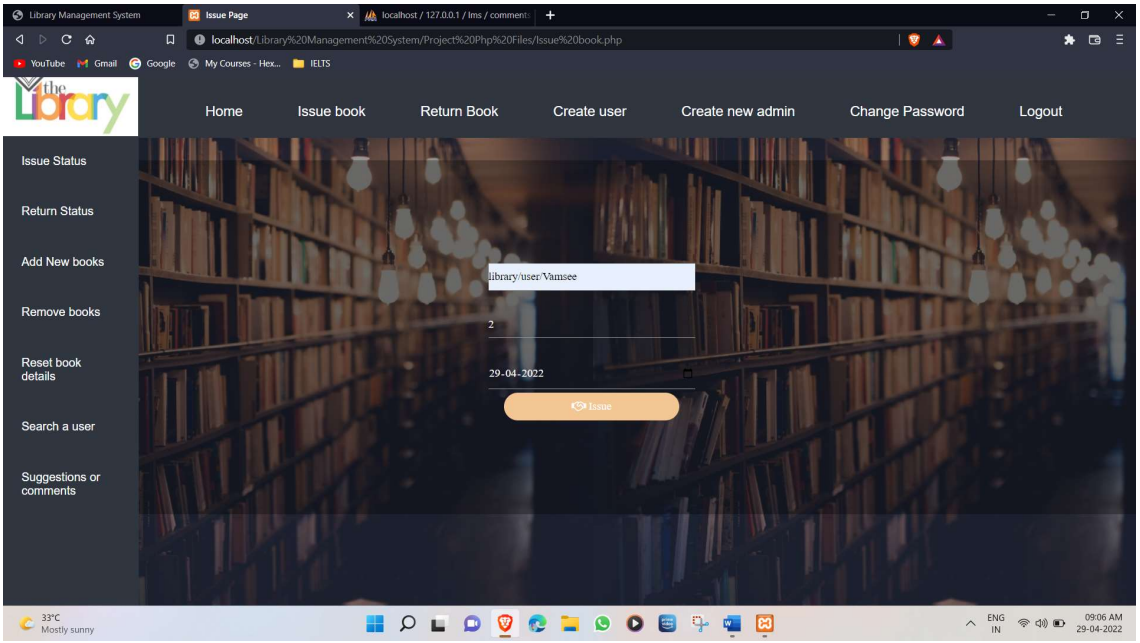


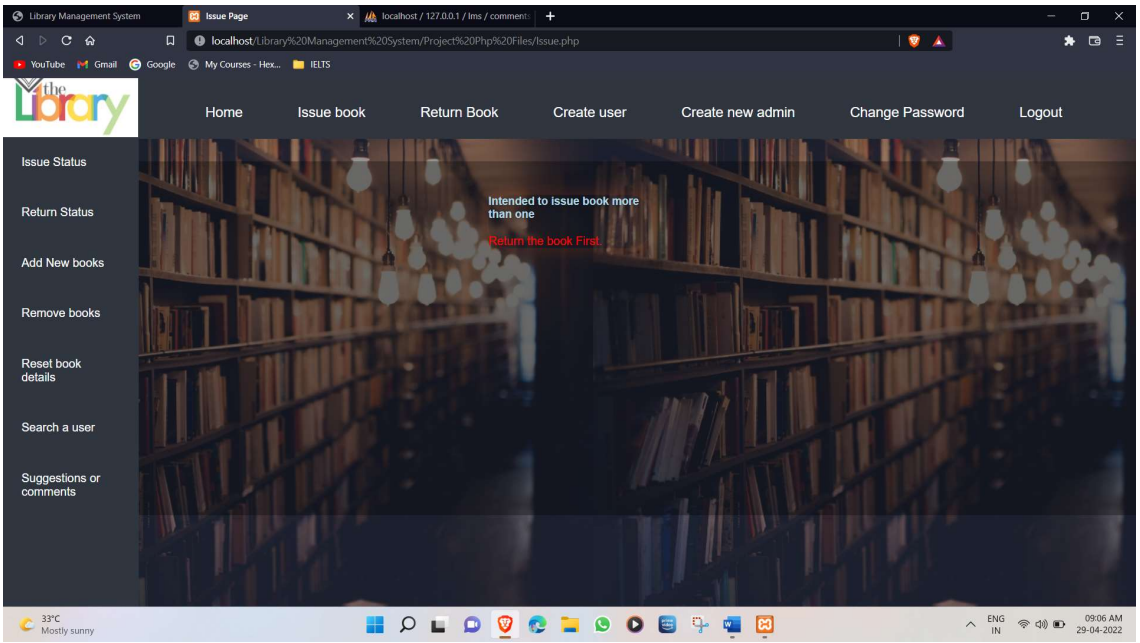
Suggestions:

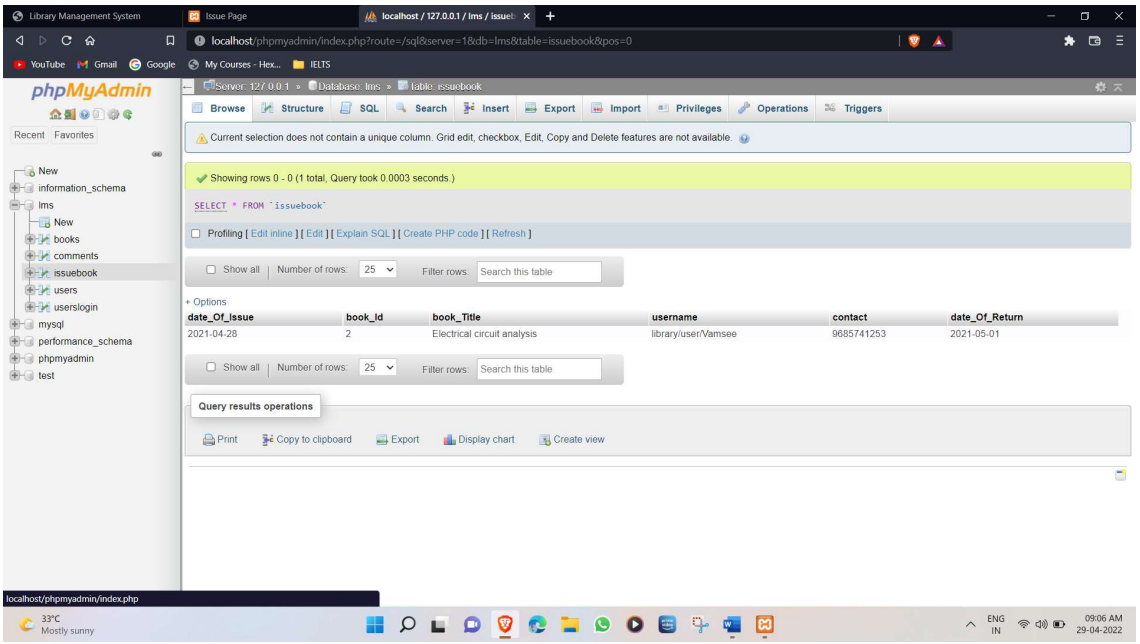




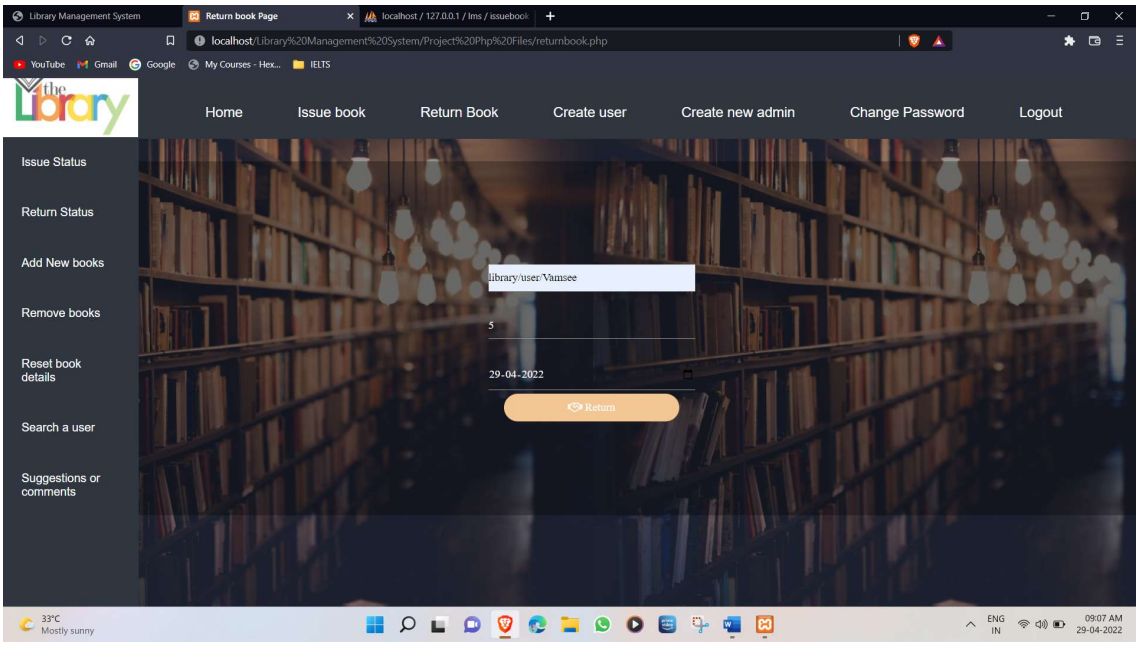
Issue book:

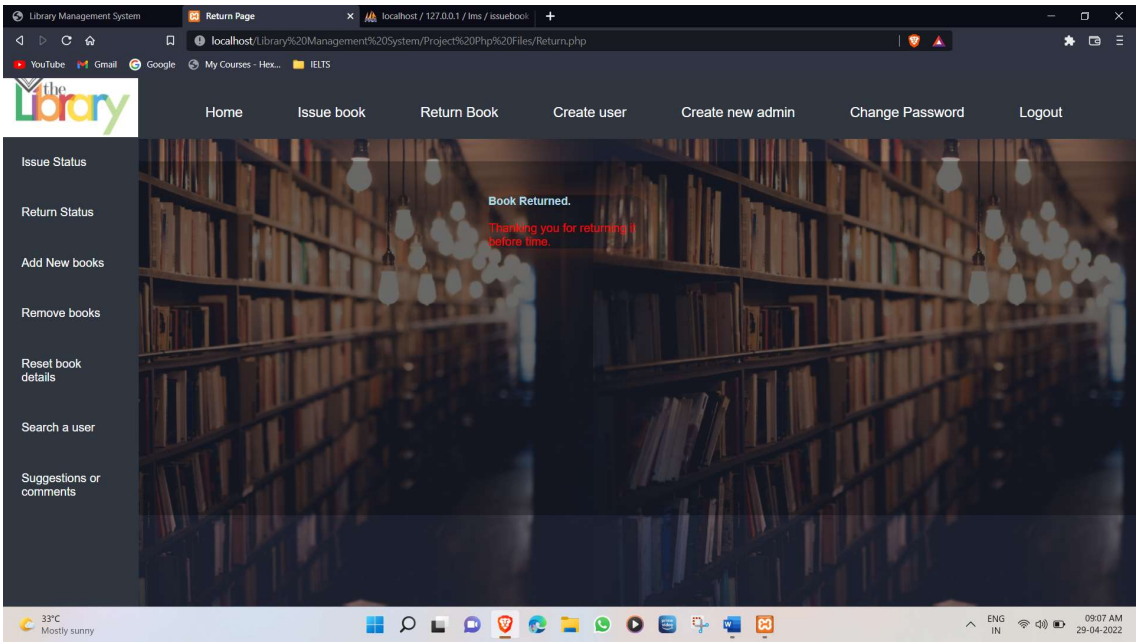

Library Management System
Issue Page
localhost / 127.0.0.1 / lms / comment
localhost/Library%20Management%20System/Project%20Php%20Files/Issue%20book.php
YouTube
Gmail
Google
My Courses - Hex...
IELTS
Home
Issue book
Return Book
Create user
Create new admin
Change Password
Logout
Issue Status
Return Status
Add New books
Remove books
Reset book details
Search a user
Suggestions or comments
library/user/Vamsee
2
29-04-2022
Issue
33°C
Mostly sunny
ENG
IN
09:06 AM
29-04-2022

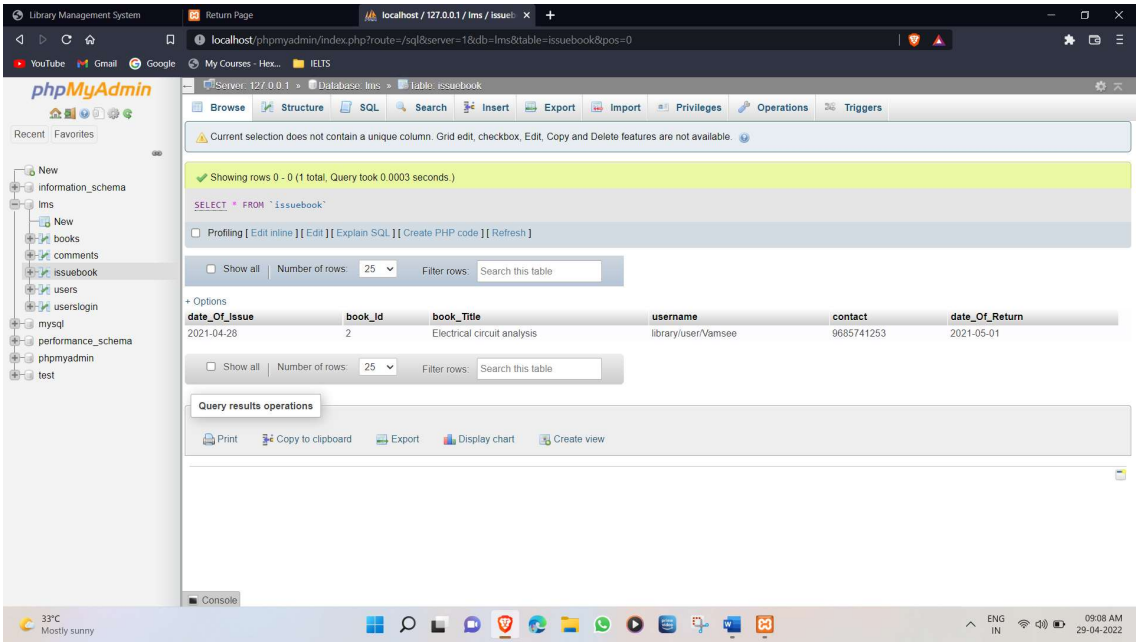

Library Management System
Issue Page
localhost / 127.0.0.1 / lms / comment
localhost/Library%20Management%20System/Project%20Php%20Files/Issue.php
YouTube
Gmail
Google
My Courses - Hex...
IELTS
Home
Issue book
Return Book
Create user
Create new admin
Change Password
Logout
Issue Status
Return Status
Add New books
Remove books
Reset book details
Search a user
Suggestions or comments
Intended to issue book more than one
Return the book First.
33°C
Mostly sunny
ENG
IN
09:06 AM
29-04-2022


Library Management System
Issue Page
localhost / 127.0.0.1 / lms / issueb
localhost/phpmyadmin/index.php?route=/sql&server=1&db=lms&table=issuebook&pos=0
phpMyAdmin
Server: 127.0.0.1 » Database: lms » Table: issuebook
Browse
Structure
SQL
Search
Insert
Export
Import
Privileges
Operations
Triggers
Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.
Showing rows 0 - 0 (1 total, Query took 0.0003 seconds.)
SELECT * FROM `issuebook`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all
Number of rows: 25
Filter rows: Search this table
Options
date_Of_Issue
book_Id
book_Title
username
contact
date_Of_Return
2021-04-28
2
Electrical circuit analysis
library/user/Vamsee
9685741253
2021-05-01
Query results operations
Print
Copy to clipboard
Export
Display chart
Create view
localhost/phpmyadmin/index.php
33°C
Mostly sunny
ENG
IN
09:06 AM
29-04-2022

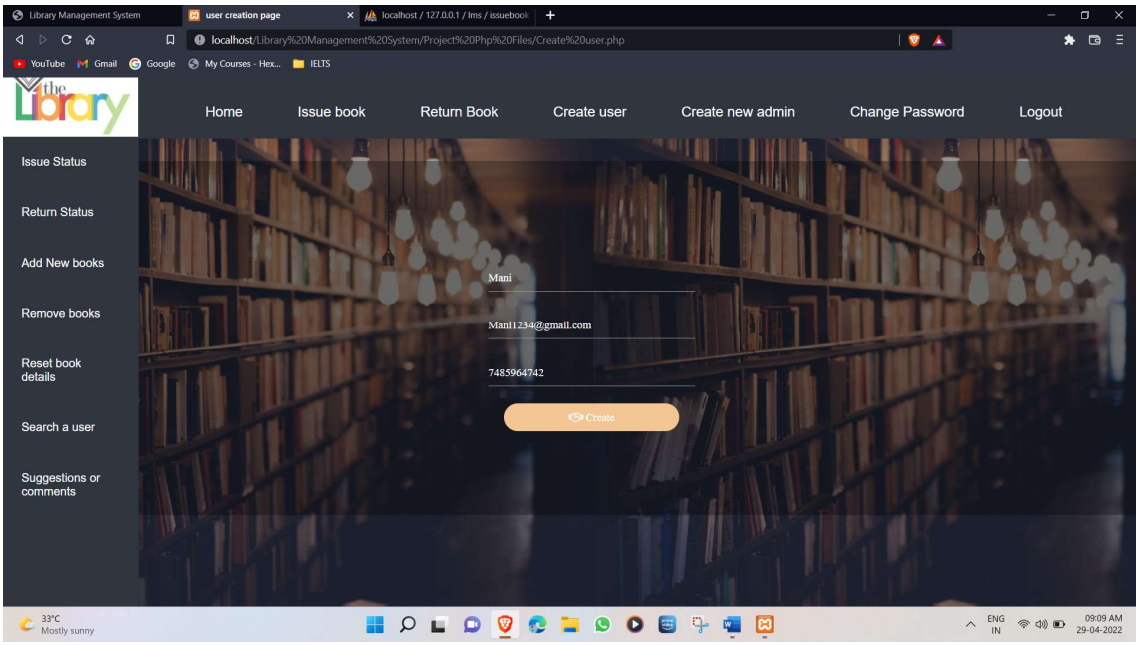
Return Book:

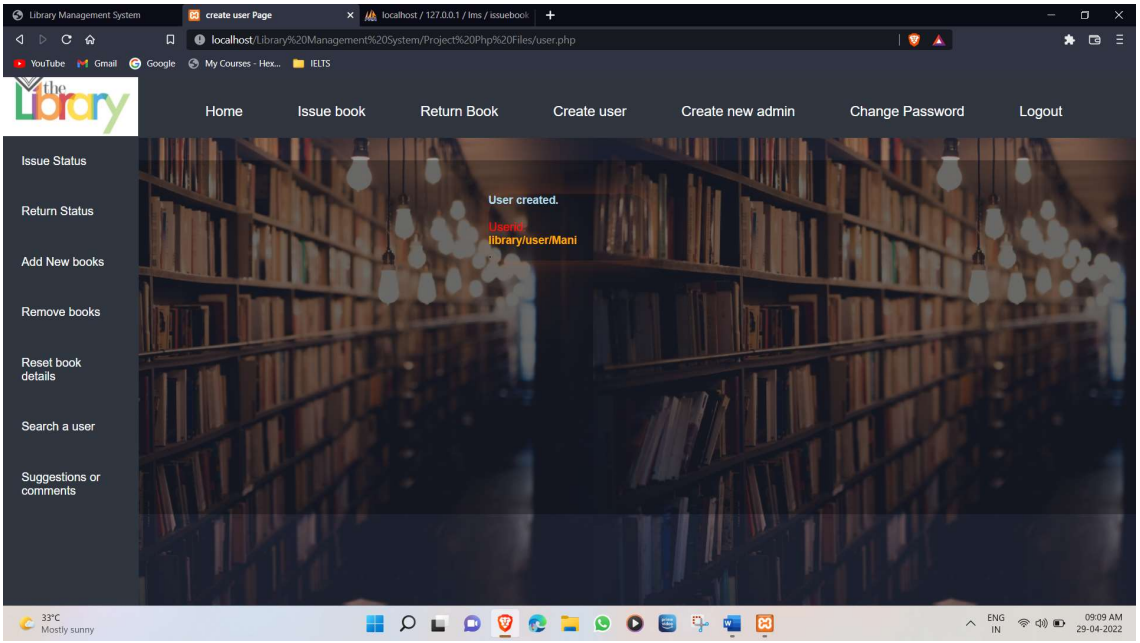

Library Management System
Return book Page
localhost / 127.0.0.1 / lms / issuebook
localhost/Library%20Management%20System/Project%20Php%20Files/returnbook.php
the Library
Home
Issue book
Return Book
Create user
Create new admin
Change Password
Logout
Issue Status
Return Status
Add New books
Remove books
Reset book details
Search a user
Suggestions or comments
library/user/Vamsee
5
29-04-2022
Return
33°C
Mostly sunny
ENG
IN
09:07 AM
29-04-2022

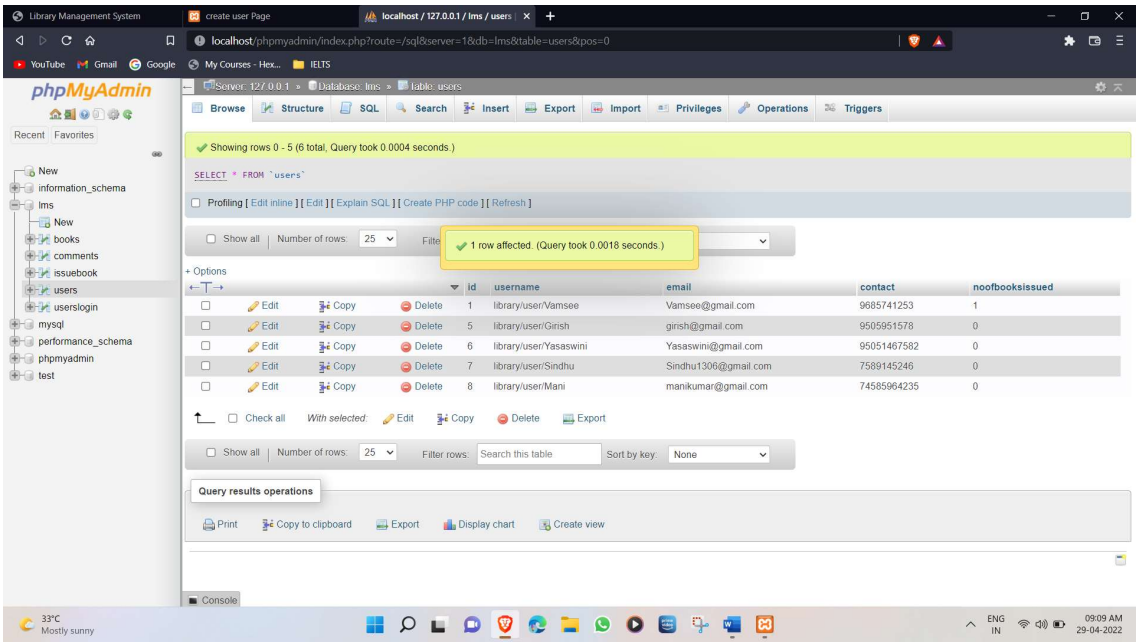

Library Management System
Return Page
localhost / 127.0.0.1 / lms / issuebook
localhost/Library%20Management%20System/Project%20Php%20Files/Return.php
YouTube
Gmail
Google
My Courses - Hex...
IELTS
Home
Issue book
Return Book
Create user
Create new admin
Change Password
Logout
Issue Status
Return Status
Add New books
Remove books
Reset book details
Search a user
Suggestions or comments
Book Returned.
Thanking you for returning it before time.
33°C
Mostly sunny
ENG
IN
09:07 AM
29-04-2022


Library Management System
Return Page
localhost / 127.0.0.1 / lms / issueb
localhost/phpmyadmin/index.php?route=/sql&server=1&db=lms&table=issuebook&pos=0
YouTube
Gmail
Google
My Courses - Hex...
IELTS
phpMyAdmin
Recent
Favorites
New
information_schema
lms
New
books
comments
issuebook
users
userslogin
mysql
performance_schema
phpmyadmin
test
Server: 127.0.0.1 » Database: lms » Table: issuebook
Browse
Structure
SQL
Search
Insert
Export
Import
Privileges
Operations
Triggers
Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.
Showing rows 0 - 0 (1 total, Query took 0.0003 seconds.)
SELECT * FROM `issuebook`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all
Number of rows: 25
Filter rows: Search this table
+ Options
date_Of_Issue
book_Id
book_Title
username
contact
date_Of_Return
2021-04-28
2
Electrical circuit analysis
library/user/Vamsee
9685741253
2021-05-01
Query results operations
Print
Copy to clipboard
Export
Display chart
Create view
Console
33°C
Mostly sunny
ENG
IN
09:08 AM
29-04-2022

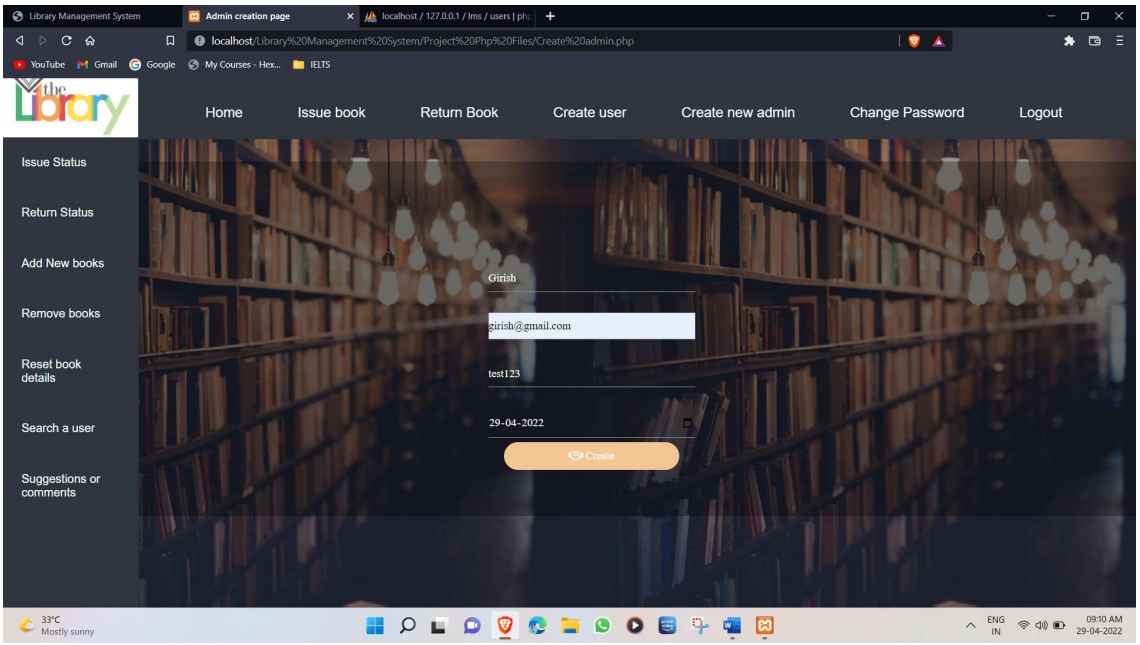
Create User:

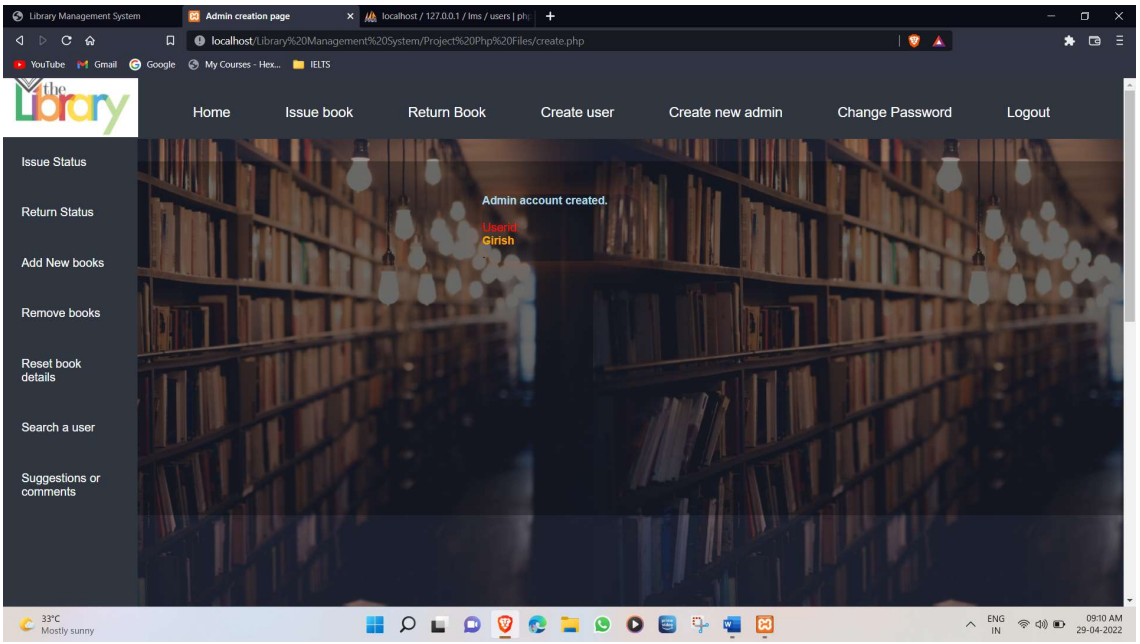

Library Management System
user creation page
localhost / 127.0.0.1 / lms / issuebook
localhost/Library%20Management%20System/Project%20Php%20Files/Create%20user.php
YouTube
Gmail
Google
My Courses - Hex...
IELTS
Home
Issue book
Return Book
Create user
Create new admin
Change Password
Logout
Issue Status
Return Status
Add New books
Remove books
Reset book details
Search a user
Suggestions or comments
Mani
Mani1234@gmail.com
7485964742
Create
33°C
Mostly sunny
ENG
IN
09:09 AM
29-04-2022

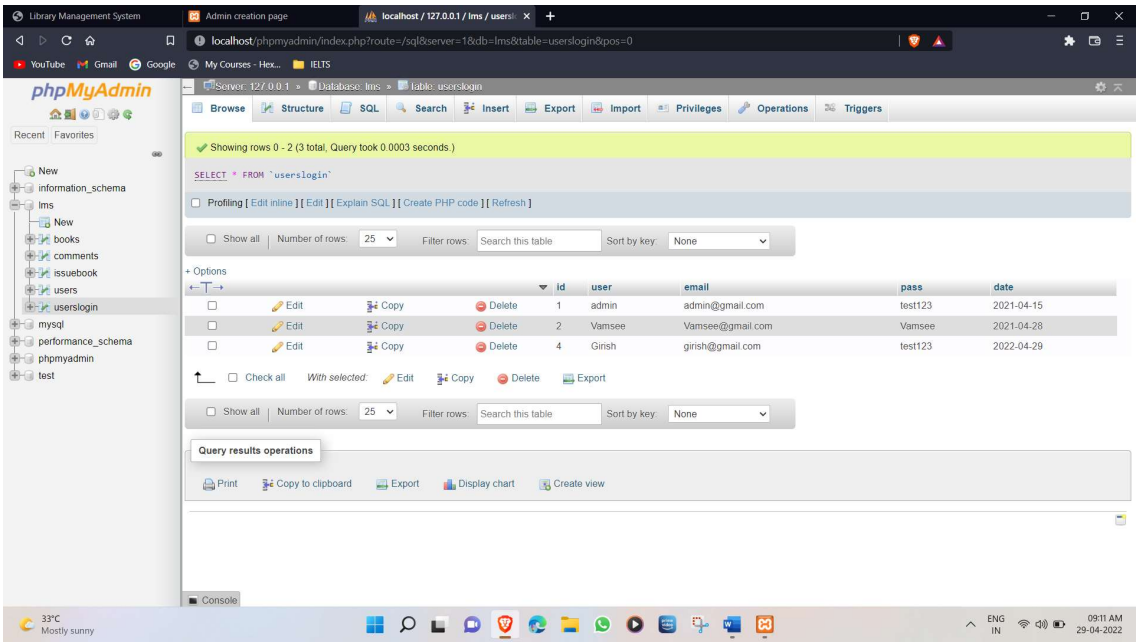

Library Management System
create user Page
localhost / 127.0.0.1 / lms / issuebook
localhost/Library%20Management%20System/Project%20Php%20Files/user.php
YouTube
Gmail
Google
My Courses - Hex...
IELTS
Home
Issue book
Return Book
Create user
Create new admin
Change Password
Logout
Issue Status
Return Status
Add New books
Remove books
Reset book details
Search a user
Suggestions or comments
User created.
Userid
library/user/Mani
33°C
Mostly sunny
ENG
IN
09:09 AM
29-04-2022



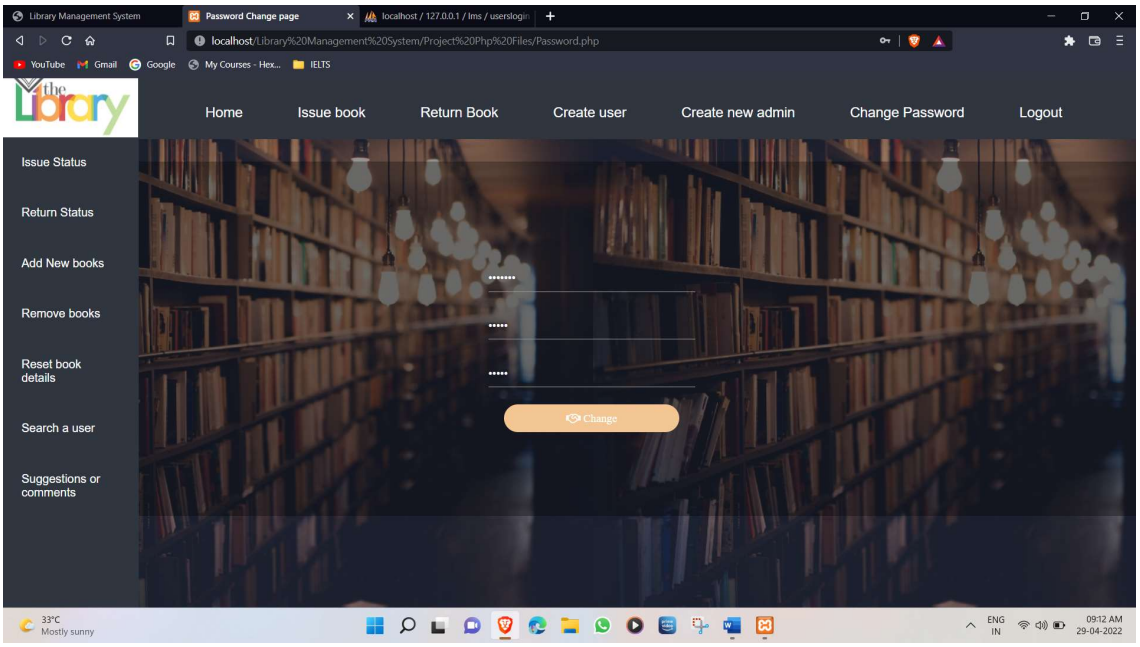
Create Admin

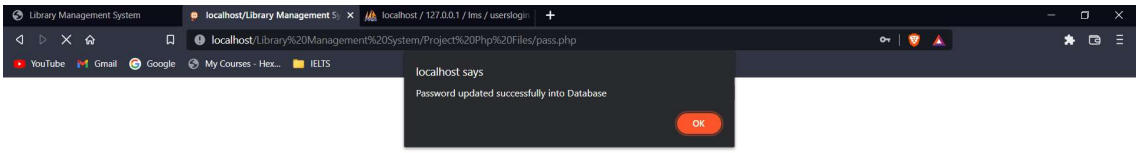



Library Management System
Admin creation page
localhost / 127.0.0.1 / lms / users | ph
localhost/Library%20Management%20System/Project%20Php%20Files/create.php
YouTube
Gmail
Google
My Courses - Hex...
IELTS
the Library
Home
Issue book
Return Book
Create user
Create new admin
Change Password
Logout
Issue Status
Return Status
Add New books
Remove books
Reset book details
Search a user
Suggestions or comments
Admin account created.
Userid
Girish
33°C
Mostly sunny
ENG
IN
09:10 AM
29-04-2022

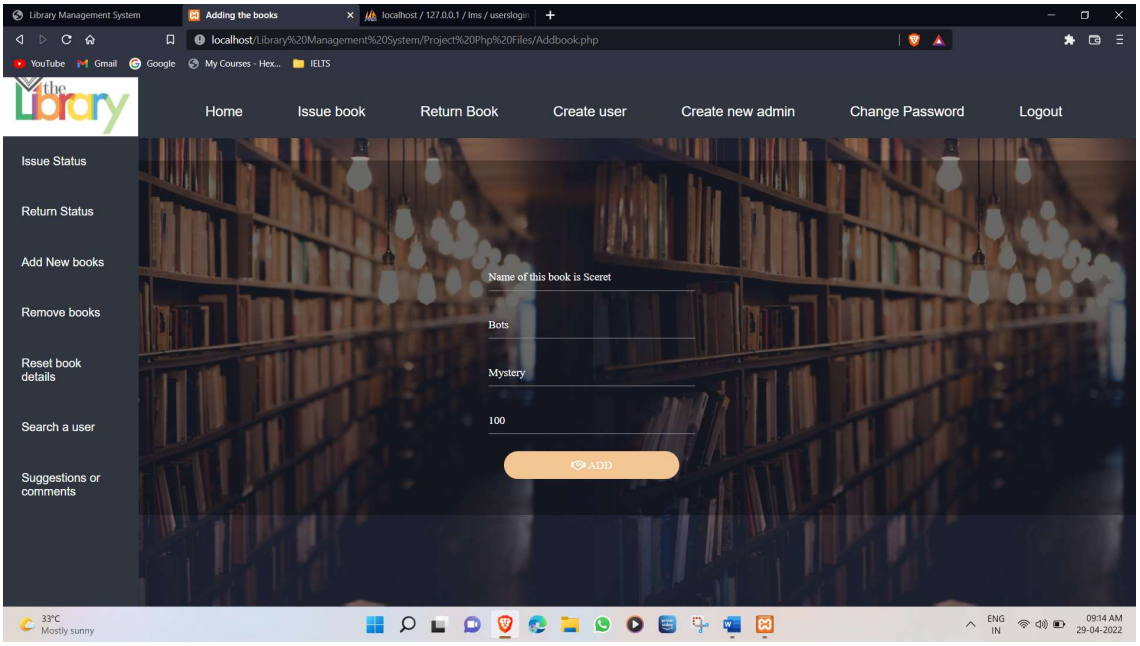

Library Management System
Admin creation page
localhost / 127.0.0.1 / lms / users
localhost/phpmyadmin/index.php?route=/sql&server=1&db=lms&table=userslogin&pos=0
phpMyAdmin
Server: 127.0.0.1 » Database: lms » Table: userslogin
Browse
Structure
SQL
Search
Insert
Export
Import
Privileges
Operations
Triggers
Recent
Favorites
New
information_schema
lms
New
books
comments
issuebook
users
userslogin
mysql
performance_schema
phpmyadmin
test
Showing rows 0 - 2 (3 total, Query took 0.0003 seconds.)
SELECT * FROM `userslogin`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all
Number of rows: 25
Filter rows: Search this table
Sort by key: None
+ Options
id
user
email
pass
date
Edit
Copy
Delete
1
admin
admin@gmail.com
test123
2021-04-15
2
Vamsee
Vamsee@gmail.com
Vamsee
2021-04-28
4
Girish
girish@gmail.com
test123
2022-04-29
Check all
With selected:
Export
Query results operations
Print
Copy to clipboard
Display chart
Create view
Console
33°C
Mostly sunny
ENG
IN
09:11 AM
29-04-2022

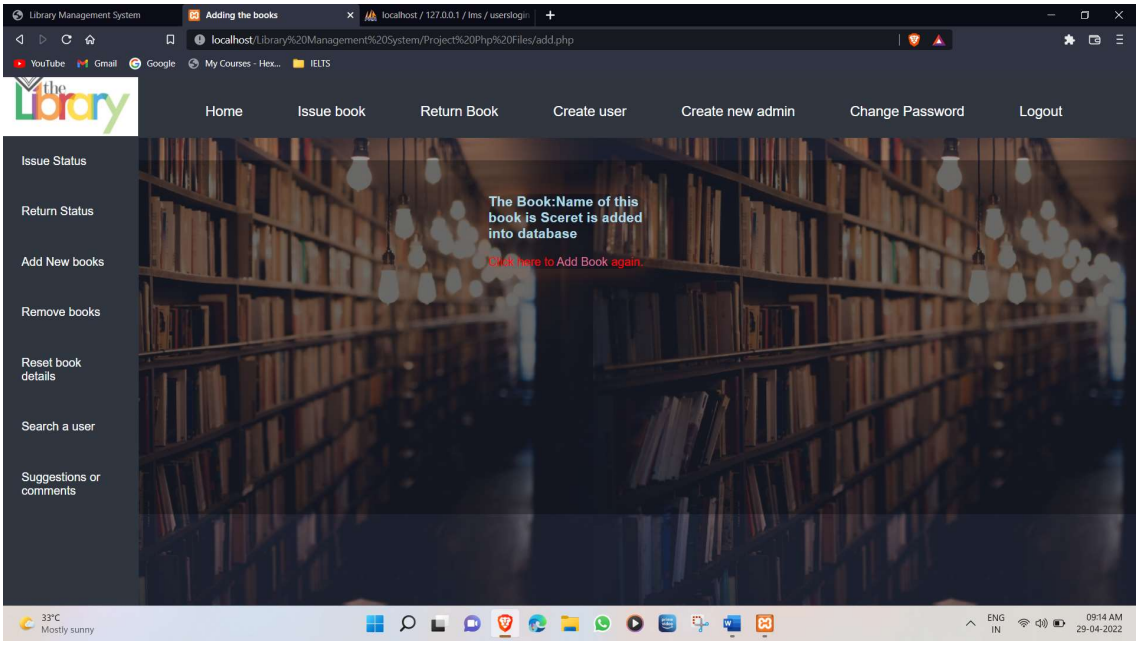
Change password:



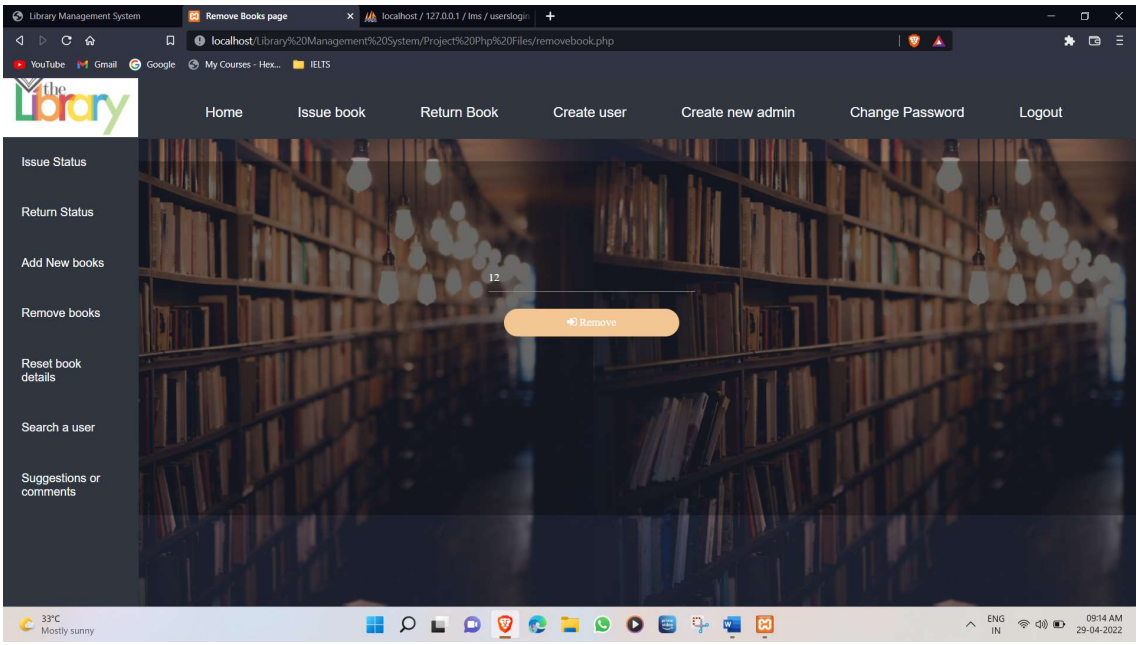


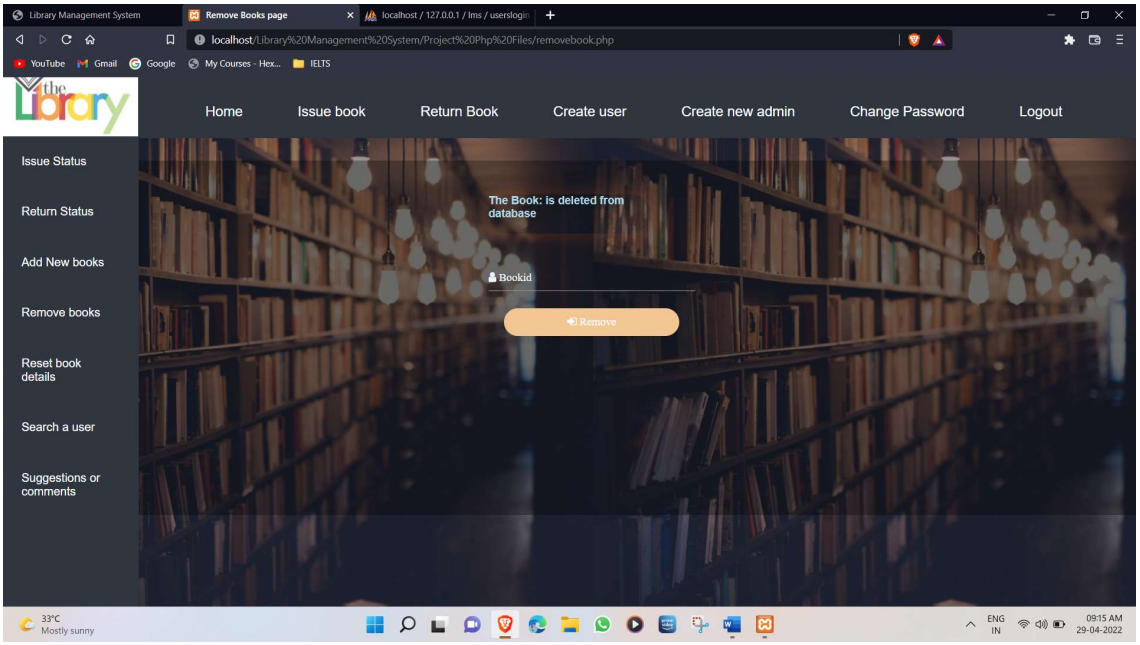
Add New books:



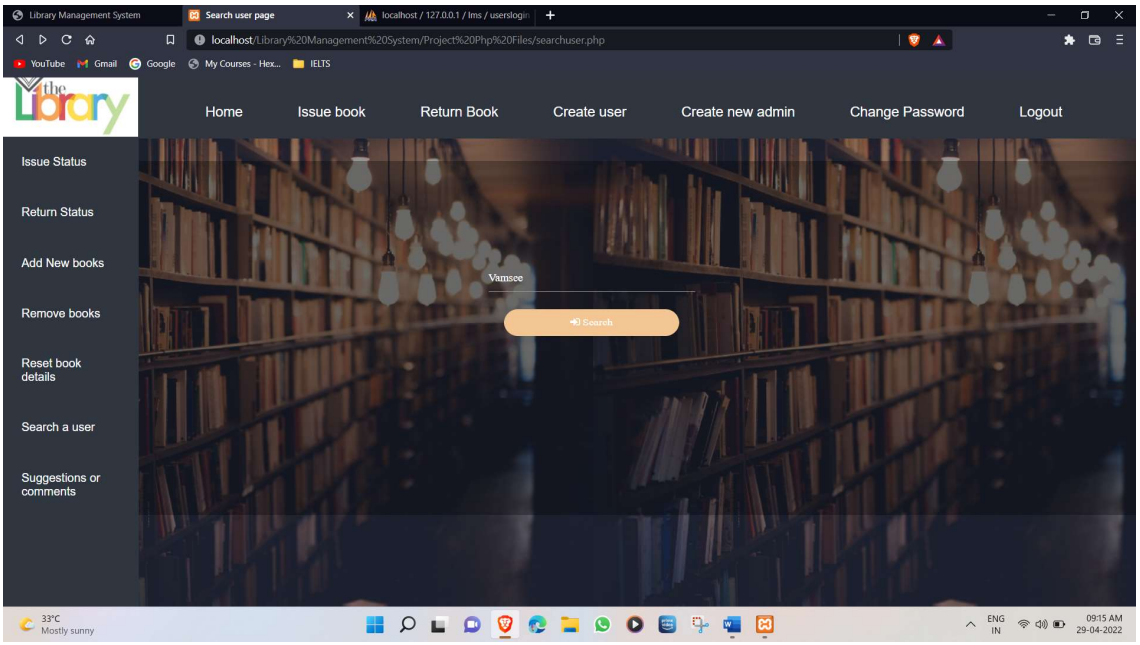


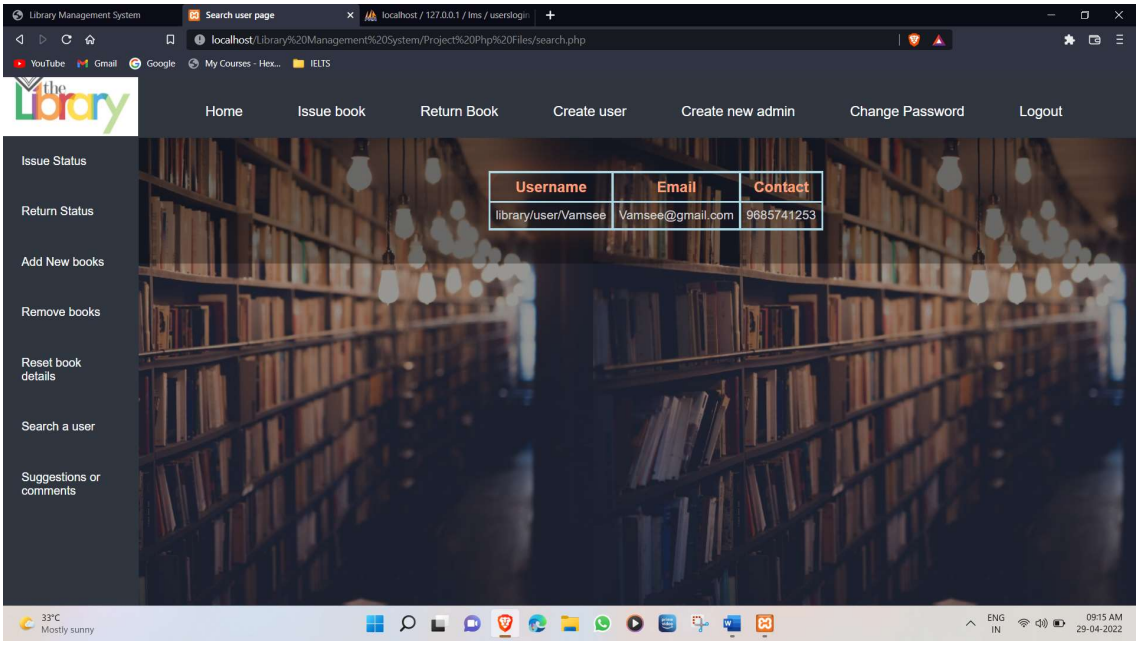
Remove Books:





Search User:


Library Management System
Search user page
localhost / 127.0.0.1 / lms / userslogin
localhost/Library%20Management%20System/Project%20Php%20Files/searchuser.php
YouTube
Gmail
Google
My Courses - Hex...
IELTS
Home
Issue book
Return Book
Create user
Create new admin
Change Password
Logout
Issue Status
Return Status
Add New books
Remove books
Reset book details
Search a user
Suggestions or comments
Vamsee
Search
33°C
Mostly sunny
ENG
IN
09:15 AM
29-04-2022


Library Management System
Search user page
localhost / 127.0.0.1 / lms / userslogin
localhost/Library%20Management%20System/Project%20Php%20Files/search.php
YouTube
Gmail
Google
My Courses - Hex...
IELTS
Home
Issue book
Return Book
Create user
Create new admin
Change Password
Logout
Issue Status
Return Status
Add New books
Remove books
Reset book details
Search a user
Suggestions or comments
Username
Email
Contact
library/user/Vamsee
Vamsee@gmail.com
9685741253
33°C
Mostly sunny
ENG
IN
09:15 AM
29-04-2022

End-User

So in general, This website can be used by all the libraries. The main agenda is to maintain the digital records for the basic operations of the library without any manpower or manual book-entry system of books issued, returned, and also their availability. So with the help of this website the pre-existing manual book record system of library operations can be replaced with digital computerized equipment. This website is quite helpful for the local libraries that cannot purchase software for the management of the library.

Conclusion

Our website playing a crucial role in replacing the pre-existing library management system. By using this manual book record management will be replaced so that all the data/information will be maintained perfectly. In the manual book-entry system there can be a possibility of losing the data because of any human errors, fire accidents, etc. But, This website will store complete data in the server which can be retrieved through the internet from any computer. So in conclusion, The Library Management System allows the user to store the book details and the person's details. This software allows storing the details of all the data related to the library. The implementation of the system will reduce data entry time and provide readily calculated reports in digital format.

Reference

1. Our University Library System.
2. Bienvenu, M., 2022. *LIBRARY MANAGEMENT SYSTEM*. [online] Academia.edu. Available at: <https://www.academia.edu/33632232/LIBRARY_MANAGEMENT_SYSTEM>
3. Library-management.com. 2022. *Library Management System | Laravel | $35/- Only*. [online] Available at: <https://www.library-management.com/>
4. Freeprojectz.com. 2022. *Library Management System Project - Download Project Source Code and Database | FreeProjectz*. [online] Available at: <https://www.freeprojectz.com/project-source-code-database-download/library-management-system-project>
5. Webslesson.info. 2022. *Library Management System Project in PHP with Source Code*. [online] Available at: <https://www.webslesson.info/2021/11/library-management-system-project-in-php-with-source-code.html>
6. Irjet.net. 2022. [online] Available at: https://www.irjet.net/archives/V7/i3/IRJET-V7I3109.pdf

7. iNetTutor.com. 2022. *Library Management System Review of Related Literature and Studies*. [online] Available at: <https://www.inettutor.com/source-code/library-management-system-review-of-related-literature-and-studies/>
8. 2022. [online] Available at: https://www.mkce.ac.in/library.php.
9. Lim, EP. Chen, H. Neuhold, E. et al. "International Journal on Digital Library", Springer-Verlag (Nov 2004).
10. Earnshaw, R.A. Vince, J.A. "Digital Convergence – Libraries of the Future", pp. 447. Springer, London (2008).