

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/372244189>

Library Management System a complete solution for an online library Library Management System

Research · July 2023

DOI: 10.13140/RG.2.2.31827.76327

CITATIONS

0

READS

1,208

1 author:

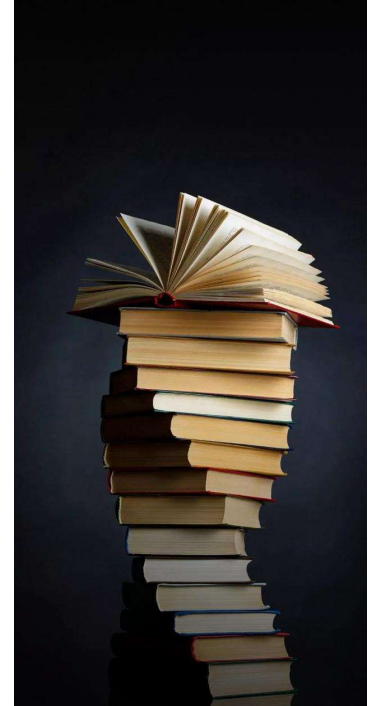


[Jahidur Rahman](#)

Southeast University (Bangladesh)

4 PUBLICATIONS 1 CITATION

SEE PROFILE



Library Management System

a complete solution for an online library



Jahidur Rahman

ID-2019200010031

Md Shakil Alam

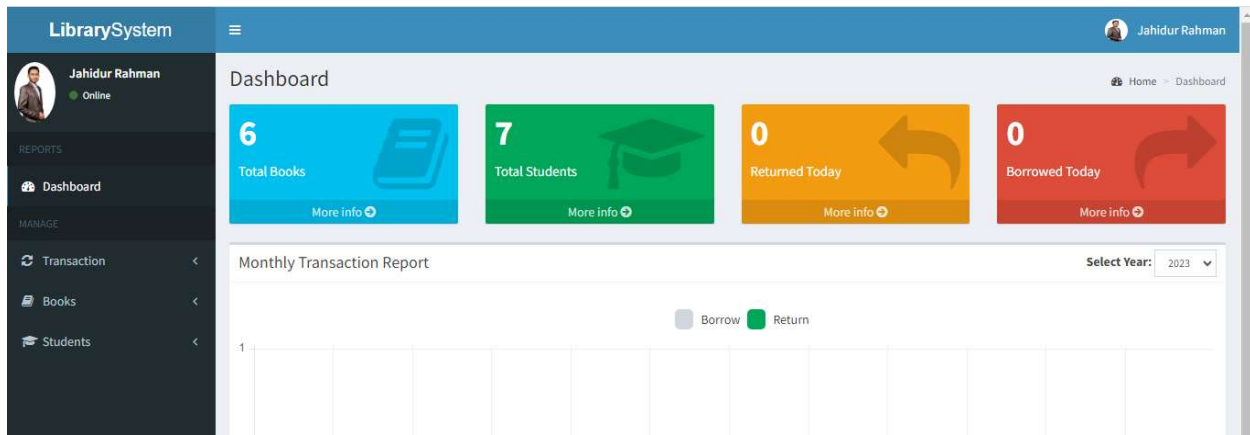
ID-2020000010001

Md. Nasir Uddin

ID-2020000010001



Library Management System



Executive Summary

This web-based Library Management System (LMS) is significant in revolutionizing library operations and improving user experiences. A web-based LMS is a powerful software application accessible through a web browser, offering automation and digitization of various library tasks, resulting in streamlined management processes and enhanced accessibility for users.

The web-based LMS brings numerous advantages to libraries and their users. Firstly, it provides a centralized platform for cataloging and organizing library resources, making it easier for librarians and users to locate and access materials efficiently. The integration with online catalogs allows users to explore the library's collection remotely and conveniently place holds on desired items, expanding access to resources beyond physical boundaries.

Efficiency is a key benefit of the web-based LMS. The automation of circulation processes, such as book borrows, book returns, student management, book categorized and renewals, saves valuable time for library staff and controlling board. Easily can control the whole library system very efficiently through this web application.

Md. Shakil Alam

Chief Executive

Library Management System Project

Table of Contents

Table of Contents.....	1
Each Team Member's Bio.....	2
Introduction.....	3
Project Descriptions.....	3
Forecast of the Library Management System.....	4
Vision and Mission.....	5
Other Platform For Any Other Descriptions.....	6
Project Source Code.....	6
Screenshot of the Front End	10
Screenshot of the Back End.....	17
Screenshot of Each User Interface Screen.....	18
Upgrade/Future Plans For Library Management System.....	20
Conclusion.....	20
Resource References.....	21

Each Team Member's Bio



Name : Shakil Alam
ID : 2019200010001
Email : 2019200010001@seu.edu.bd
LinkedIn : <https://www.linkedin.com/in/md-shakil-alam-seu>



Name : Jahidur Rahman
ID : 2019200010031
Email : 2019200010031@seu.edu.bd
LinkedIn : <https://www.linkedin.com/in/jahidur-rahman-6091211a1>



Name : Nasir Uddin
ID : 2020000010001
Email : 2020000010001@seu.edu.bd
LinkedIn : <https://www.linkedin.com/in/md-nasir-uddin-46285b12b/>

Introduction

Have a warm welcome to Library Management System, a complete solution for an online library. We have worked to experience you a well-organized library management system through web application that is easy to use, secure and filled with proper needful things for manage a library.

A library management system is a web application designed to automate and centralize various administrative tasks involved in running a library. It encompasses a wide range of functionalities, including book transaction, book categorized, resources management and student registration. By utilizing this web-based platform, libraries can leverage the power of the internet to optimize their operations and offer seamless services to users.

Project Description

The goal of this project is to design and develop a web application that will simplify the process of cataloging, organizing, and tracking the transaction record of library resources. It allows librarians to create a comprehensive database of books, including their titles, category and availability status. It also help to create and edit the student database. These databases can be easily updated as new books are borrowed or returned from the library's collection.

The web application will have the following features:

Sign-in: Librarians will be able to sign-in individually to the web application to manage the library system.

Update Account: Librarians can easily edit their name, password, profile picture at any time.

Dashboard: The total transaction of books and the total amount will be summarized on the dashboard.

Transaction: In this feature, all borrow and return transaction will be placed. Librarians can edit and update the books borrow and return history as per each student wise.

Book List: This feature allows librarians to create and edit new book list and their category.

Students: This feature allows librarians to create and edit new student entry and the courses.

Forecast of the Library Management System

The Library Management System project has shown great potential and is poised for success in the online library management area. Based on analysis and the initial response from library managing body, we can forecast positive outcomes for the project. Here are some key forecasts for Library Management System:

Increased Adoption: The forecast for library management systems indicates a continued increase in their adoption by libraries of all sizes. As libraries strive to digitize their operations and enhance user experiences, they recognize the value of implementing a robust system that streamlines processes and improves efficiency.

Mobile Applications: With the proliferation of smartphones and tablets, library management systems are likely to develop dedicated mobile applications. These applications will allow patrons to search catalogs, manage their accounts, and access digital resources directly from their mobile devices. Librarians will also benefit from mobile apps, enabling them to perform administrative tasks on the go.

Integration with Digital Resources: As libraries increasingly provide digital resources, library management systems will evolve to integrate seamlessly with e-books, online databases, and other electronic materials. This integration will enable a unified search experience for users, making it easier to discover and access both physical and digital resources.

Advanced Analytics and Insights: Library management systems will offer more sophisticated analytics capabilities, empowering librarians to gain deeper insights into library usage patterns, popular materials, and user preferences. These insights will inform collection development decisions, resource allocation, and personalized recommendations for patrons.

Enhanced User Experience: Future library management systems will focus on enhancing the user experience for patrons. This includes intuitive interfaces, personalized recommendations, social features for sharing reading experiences, and integration with social media platforms. The aim is to create a digital library environment that caters to diverse user needs and preferences.

Collaborative Features: Library management systems will increasingly incorporate collaborative features, allowing users to contribute reviews, ratings, and comments on books, fostering a sense of community within the library's digital space. Patrons will have opportunities to engage in discussions, create reading lists, and share recommendations with other library users.

Vision and Mission

Vision:

To be the well reputed, digitalized, advanced and most loved online library platform, bringing happiness and convenience to librarians lives through a seamless online library management system experience.

Mission:

Our mission is to empower libraries with a comprehensive and user-friendly web application that revolutionizes the management and accessibility of library resources. We aim to streamline library operations, enhance the user experience, and foster a vibrant community of lifelong learners

User Satisfaction: Our mission is to prioritize user satisfaction by providing a wide range of managerial system. We aim to exceed user expectations through excellent web library service, smooth transactions, and a well-organized large database.

Convenience and Accessibility: We strive to make online library convenient and accessible for everyone. Our user-friendly interface and intuitive features ensure a seamless browsing and transaction experience. We aim to save librarians time and effort by offering a diverse range of facilities under one virtual roof.

Trusted and Reliable: We are committed to building trust and reliability among our users. We employ robust security measures to protect their personal information and resource details.

Continuous Improvement: We believe in the power of innovation and continuous improvement. We are dedicated to staying updated with the latest technological advancements. By leveraging emerging technologies, we aim to enhance the overall online library managing experience and provide personalized recommendations to our users.

Social Responsibility: We recognize our responsibility towards society and the environment. We aim to minimize our carbon footprint through sustainable practices and support social causes that positively impact communities. We strive to be a socially responsible online library platform, contributing to the greater good.

Through our vision and mission, we aim to create a joyful and memorable online library managing experience for our users. We are committed to consistently improving our services, expanding our transaction facilities, and fostering strong user relationships. Library Management System aspires to be a trusted name in the online library area, synonymous with happiness, convenience, and user satisfaction.

Other Platform for Any Other Descriptions

This online library management system can be perform on any web browser and on several popular operating system based platform including Mac-OS, Linux and Windows Operating system.

Project Source Code

```
<?php
    include 'includes/session.php';

    if(isset($_POST['add'])){
        $isbn = $_POST['isbn'];
        $title = $_POST['title'];
        $category = $_POST['category'];
        $author = $_POST['author'];
        $publisher = $_POST['publisher'];
        $pub_date = $_POST['pub_date'];

        $sql = "INSERT INTO books (isbn, category_id, title, author, publisher,
publish_date) VALUES ('$isbn', '$category', '$title', '$author', '$publisher',
'$pub_date')";
        if($conn->query($sql)){
            $_SESSION['success'] = 'Book added successfully';
        }
        else{
            $_SESSION['error'] = $conn->error;
        }
    }
    else{
        $_SESSION['error'] = 'Fill up add form first';
    }

    header('location: book.php');
?>
```

Project Source Code (Cont.)

```
<?php
    include 'includes/session.php';

    if(isset($_POST['delete'])){
        $id = $_POST['id'];
        $sql = "DELETE FROM books WHERE id = '$id'";
        if($conn->query($sql)){
            $_SESSION['success'] = 'Book deleted successfully';
        }
        else{
            $_SESSION['error'] = $conn->error;
        }
    }
    else{
        $_SESSION['error'] = 'Select item to delete first';
    }

    header('location: book.php');

?>
<?php
    include 'includes/session.php';

    if(isset($_POST['add'])){
        $student = $_POST['student'];

        $sql = "SELECT * FROM students WHERE student_id = '$student'";
        $query = $conn->query($sql);
        if($query->num_rows < 1){
            if(!isset($_SESSION['error'])){
                $_SESSION['error'] = array();
            }
            $_SESSION['error'][] = 'Student not found';
        }
        else{
            $row = $query->fetch_assoc();
            $student_id = $row['id'];

            $added = 0;
            foreach($_POST['isbn'] as $isbn){
                if(!empty($isbn)){
```

Project Source Code (Cont.)

```
$sql = "SELECT * FROM books WHERE isbn = '$isbn' AND status !=
1";

$query = $conn->query($sql);
if($query->num_rows > 0){
    $brow = $query->fetch_assoc();
    $bid = $brow['id'];

    $sql = "INSERT INTO borrow (student_id, book_id,
date_borrow) VALUES ('$student_id', '$bid', NOW())";
    if($conn->query($sql)){
        $added++;
        $sql = "UPDATE books SET status = 1 WHERE id =
'$bid'";

        $conn->query($sql);
    }
    else{
        if(!isset($_SESSION['error'])){
            $_SESSION['error'] = array();
        }
        $_SESSION['error'][] = $conn->error;
    }
}
else{
    if(!isset($_SESSION['error'])){
        $_SESSION['error'] = array();
    }
    $_SESSION['error'][] = 'Book with ISBN - '.$isbn.'
unavailable';
}

}

}

if($added > 0){
    $book = ($added == 1) ? 'Book' : 'Books';
    $_SESSION['success'] = $added.' '.$book.' successfully borrowed';
}

}

}
else{
```

Project Source Code (Cont.)

```
$_SESSION['error'] = 'Fill up add form first';
}

header('location: borrow.php');

?>
<?php
    include 'includes/session.php';

    if(isset($_POST['add'])){
        $name = $_POST['name'];

        $sql = "INSERT INTO category (name) VALUES ('$name')";
        if($conn->query($sql)){
            $_SESSION['success'] = 'Category added successfully';
        }
        else{
            $_SESSION['error'] = $conn->error;
        }
    }
    else{
        $_SESSION['error'] = 'Fill up add form first';
    }

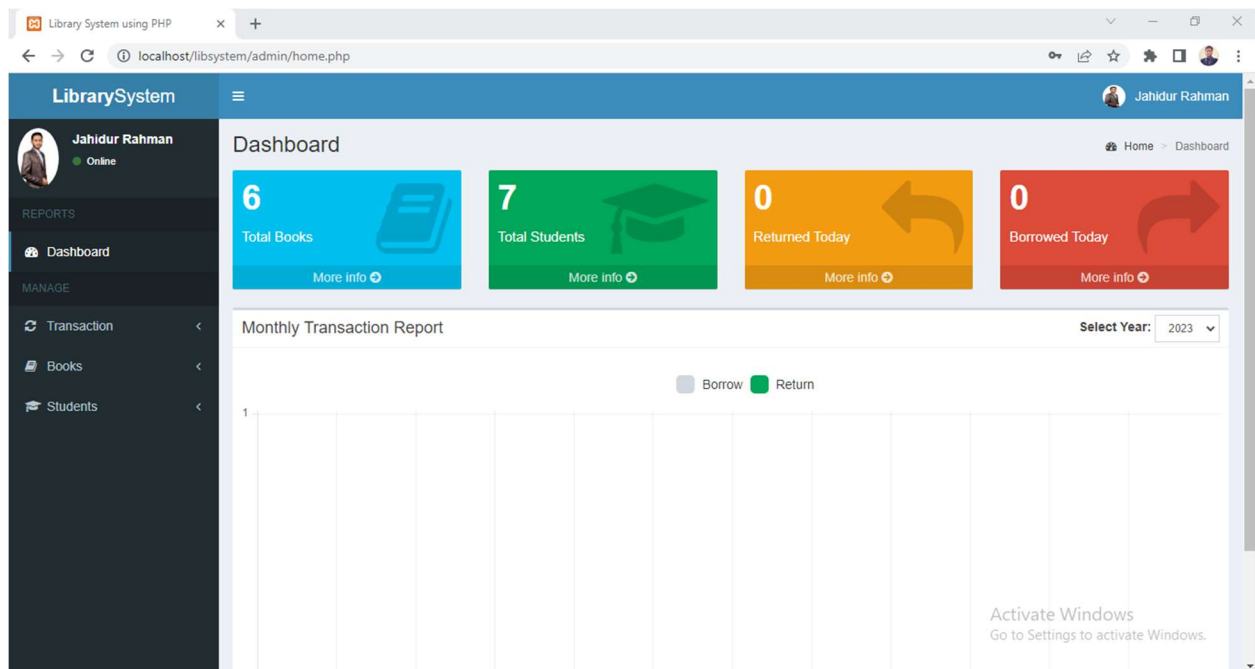
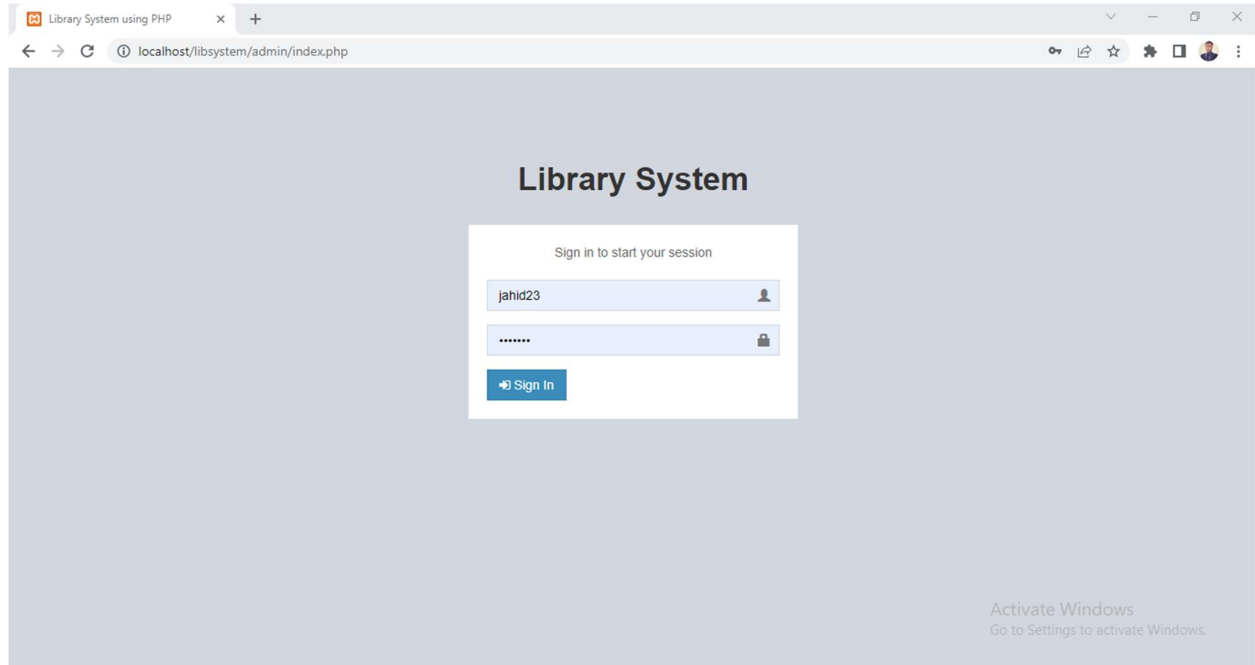
    header('location: category.php');

?>
```

```
<?php
    $timezone = 'Asia/Manila';
    date_default_timezone_set($timezone);

?>
```

Screenshot of the Front End



Screenshot of the Front End (Cont.)

The screenshot shows the 'LibrarySystem' dashboard for user 'Jahidur Rahman'. The dashboard features three main statistics: 6 Total Books, 7 Total Students, and 0 Returned Today. Below these is a 'Monthly Transaction Report' section with a legend for 'Borrow' (grey) and 'Return' (green). The report area is currently empty. On the right, there is a user profile for 'Jahidur Rahman' with a 'Sign out' button. The left sidebar contains navigation links for 'Dashboard', 'Transaction', 'Books', and 'Students'.

LibrarySystem

Jahidur Rahman Online

Dashboard

6 Total Books

7 Total Students

0 Returned Today

Monthly Transaction Report

Borrow Return

Activate Windows
Go to Settings to activate Windows.

The screenshot shows the 'Borrow Books' page in the 'LibrarySystem'. The page displays a table of borrowed books with columns: Date, Student ID, Name, ISBN, Title, and Status. The table lists 5 entries. The 'Status' column shows 'not returned' for the first four entries and 'returned' for the last one. The left sidebar shows the 'Borrow' link selected. The bottom of the page shows pagination: 'Showing 1 to 5 of 5 entries' and 'Previous 1 Next'.

LibrarySystem

Jahidur Rahman Online

Borrow Books

+ Borrow

Show 10 entries

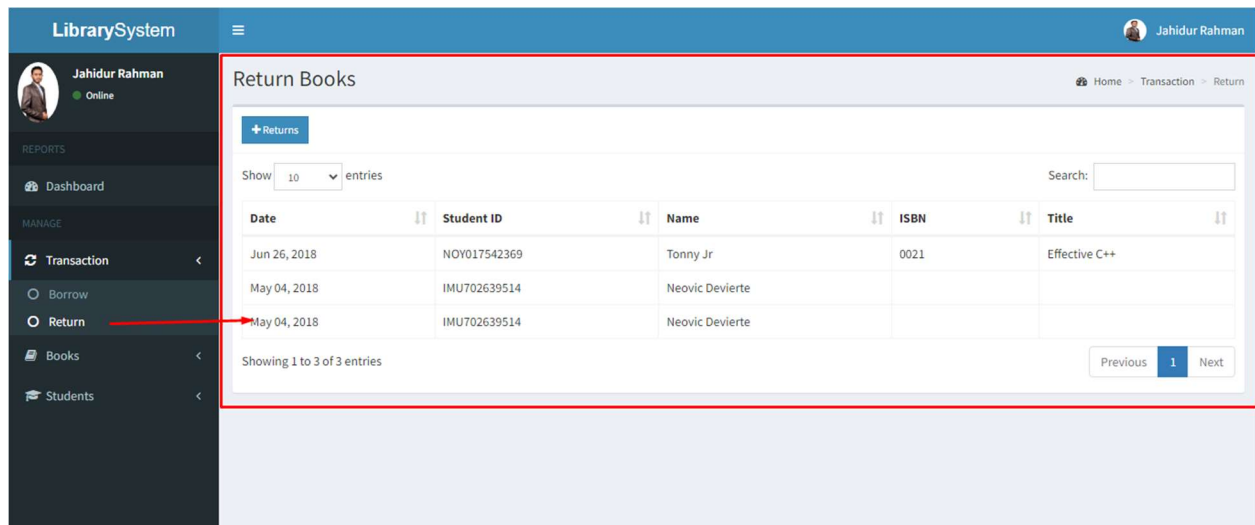
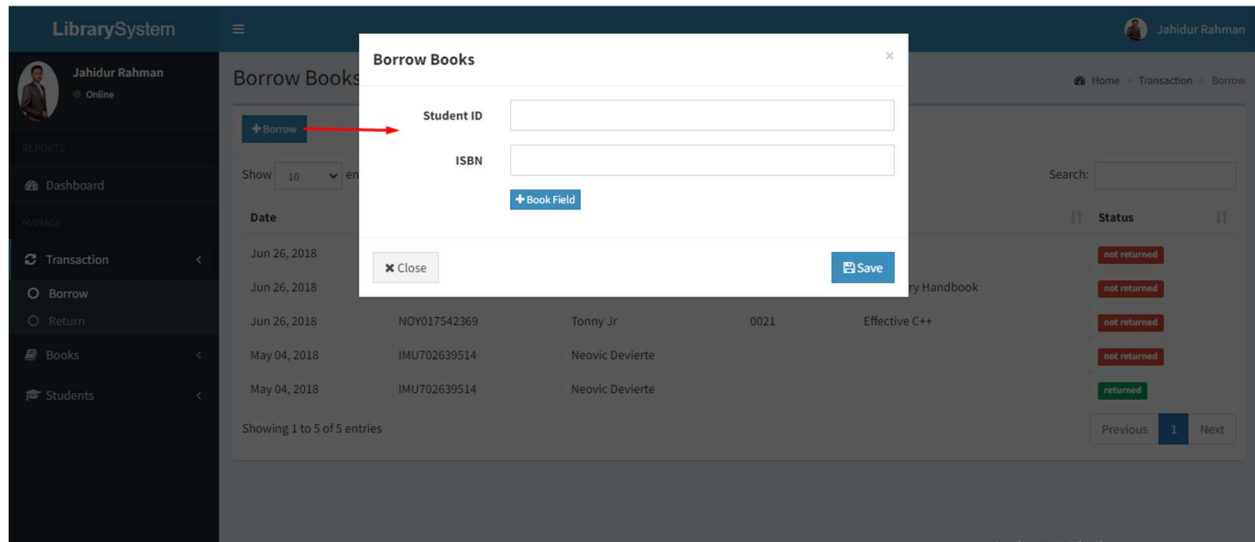
Search:

Date	Student ID	Name	ISBN	Title	Status
Jun 26, 2018	GSU960812475	Christine Gray			not returned
Jun 26, 2018	NOY017542369	Tonny Jr	005	Machinery Handbook	not returned
Jun 26, 2018	NOY017542369	Tonny Jr	0021	Effective C++	not returned
May 04, 2018	IMU702639514	Neovic Devierte			not returned
May 04, 2018	IMU702639514	Neovic Devierte			returned

Showing 1 to 5 of 5 entries

Previous 1 Next

Screenshot of the Front End (Cont.)



Screenshot of the Front End (Cont.)

LibrarySystem

Jahidur Rahman Online

Book List

Category: ALL

Show 10 entries

Category	ISBN	Title	Author	Publisher	Status	Tools
Engineering	01	Software Engineering	ABCDEFF	Jacobs Publisher	borrowed	Edit Delete
Engineering	005	Machinery Handbook	ABCDEFF	Jacobs Publisher	borrowed	Edit Delete
IT Programming	0021	Effective C++	Scott Meyers	Hoobstank Publishers	borrowed	Edit Delete
IT Programming	002	Python Cookbook	ABCDEFF	Jacobs Publisher	available	Edit Delete
IT Programming	123	Java 2	Herbert	Demo Publisher	available	Edit Delete
Science and Technology	555	A Brief History of Time	Stephen Hawkings	Jacobs Publisher	borrowed	Edit Delete

Showing 1 to 6 of 6 entries

Previous 1 Next

Activate Windows

LibrarySystem

Jahidur Rahman Online

Book List

Add New Book

ISBN

Title

Category: - Select -

Author

Publisher

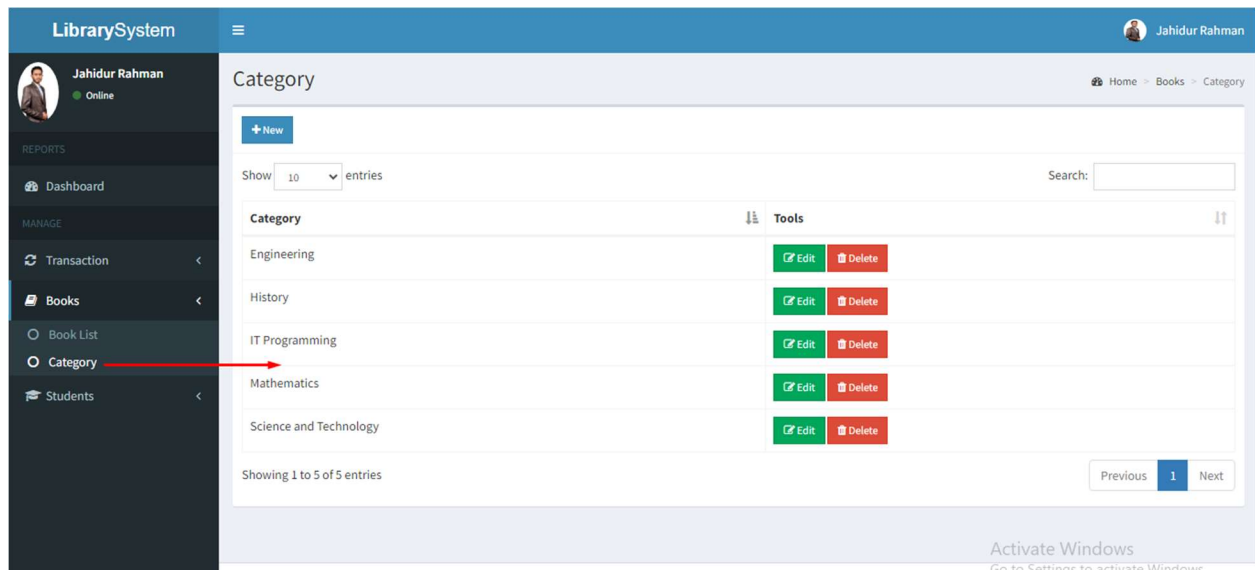
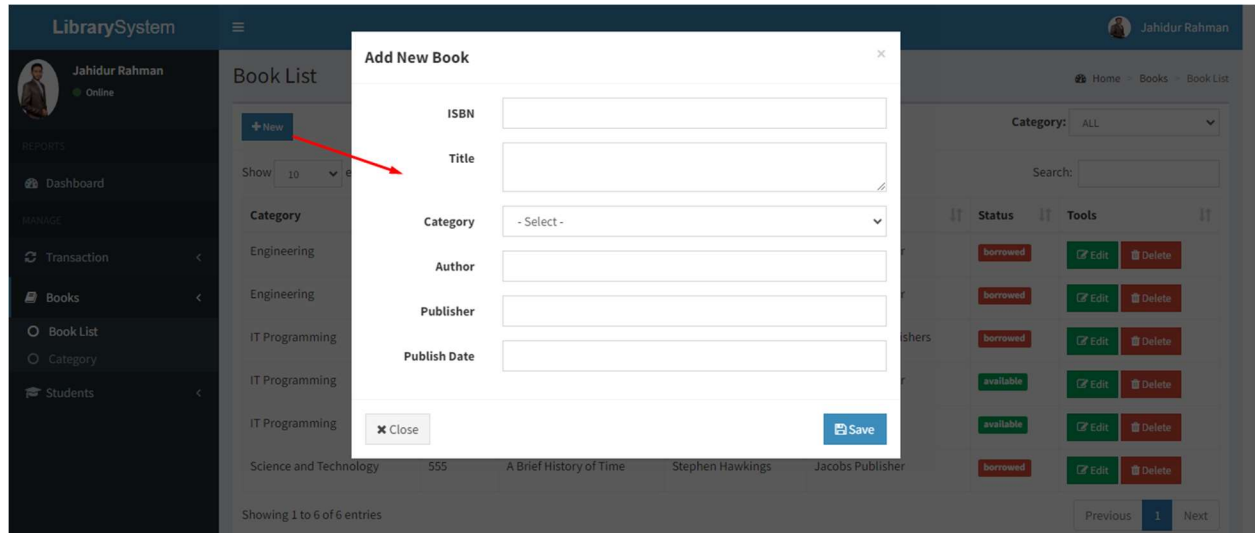
Publish Date

Close Save

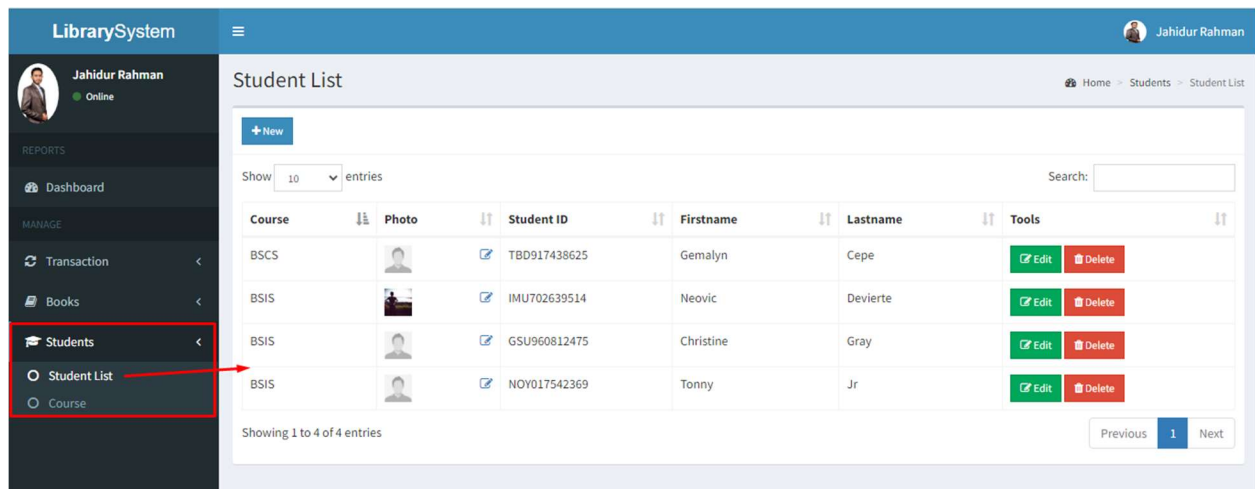
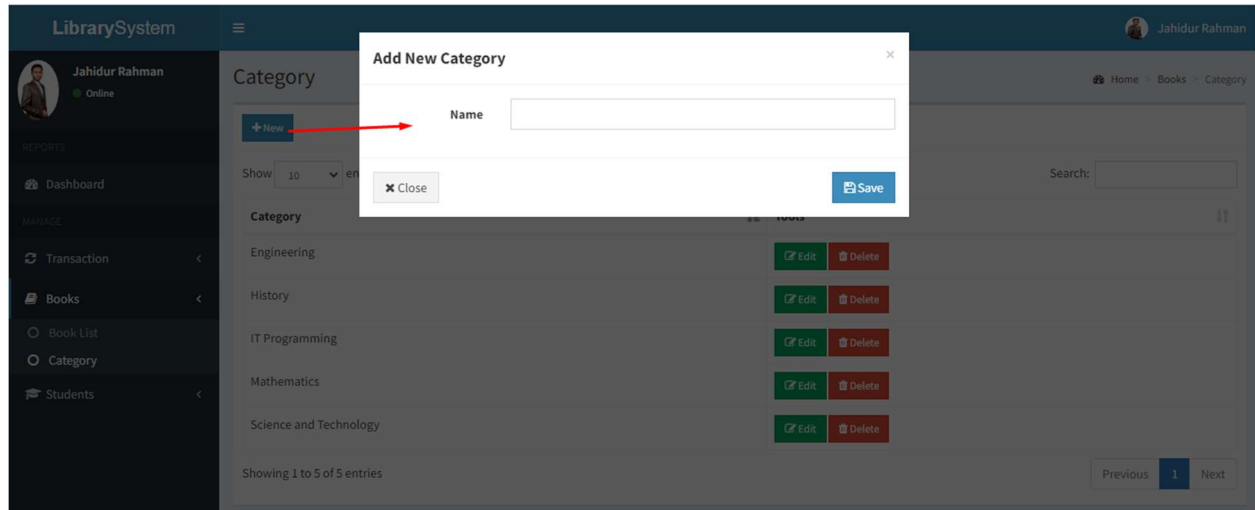
Showing 1 to 6 of 6 entries

Previous 1 Next

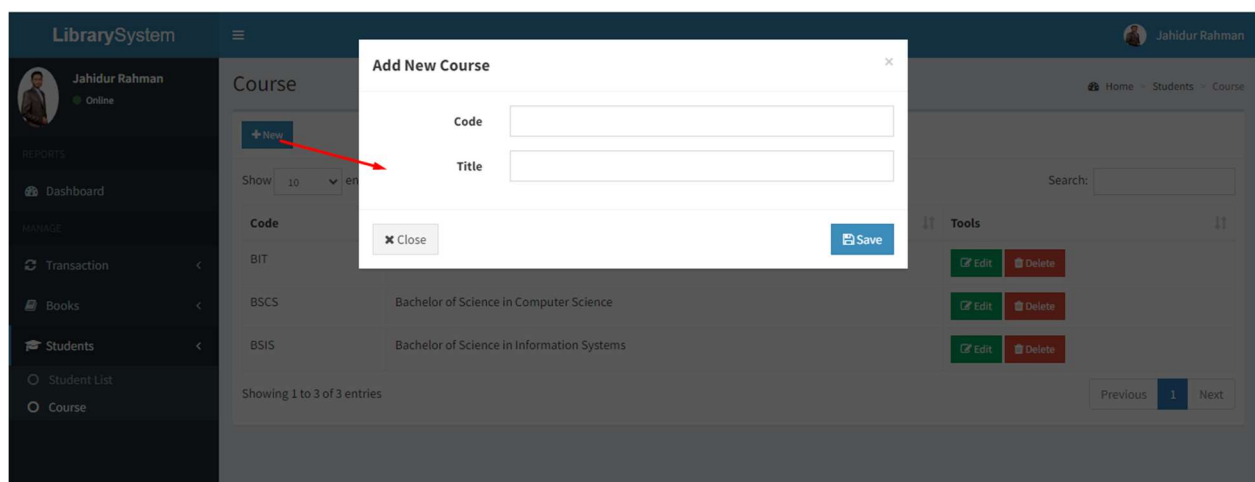
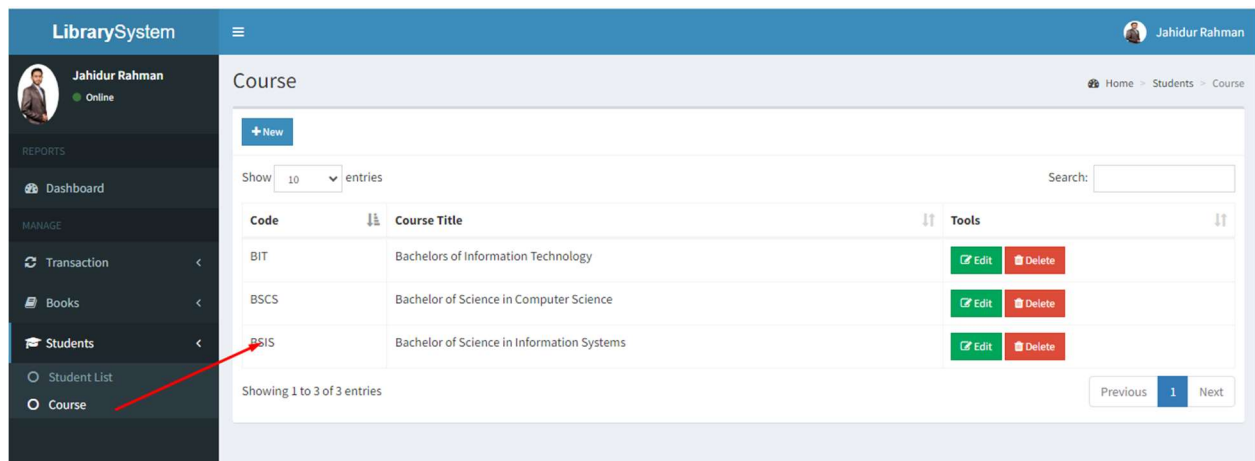
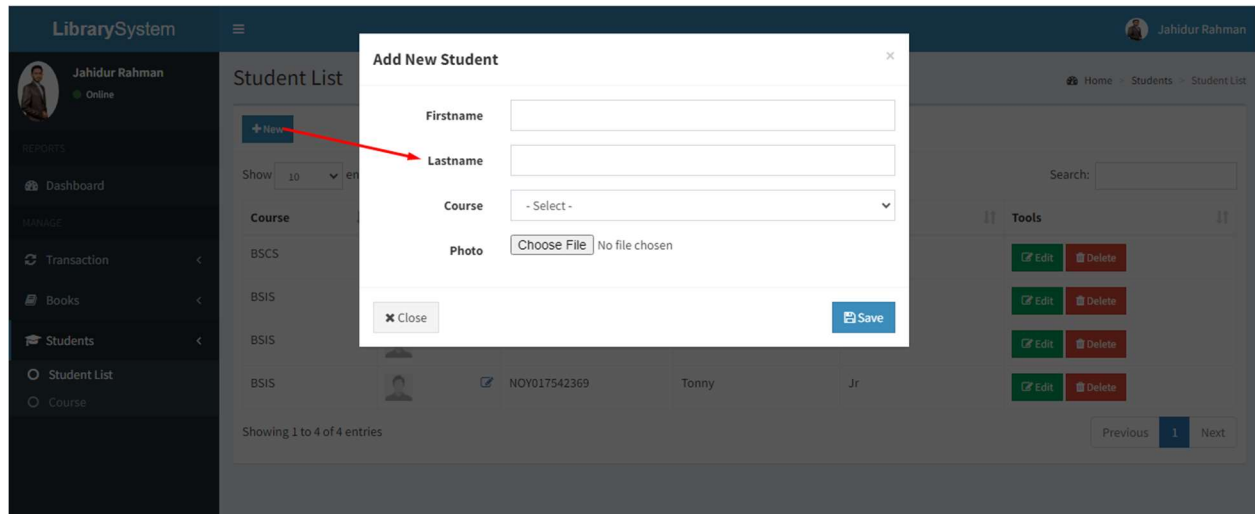
Screenshot of the Front End (Cont.)



Screenshot of the Front End (Cont.)



Screenshot of the Front End (Cont.)



Screenshot of the Back End

The screenshot shows the phpMyAdmin interface for the 'libsystem' database. The 'books' table is selected, and the 'Structure' tab is active. The table contains 6 rows of data. The left sidebar shows the database structure, including 'information_schema', 'libsystem', and 'mysql'.

Showing rows 0 - 5 (6 total, Query took 0.0005 seconds.)

```
SELECT * FROM `books`
```

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

Extra options

	id	isbn	category_id	title	author	publisher	publish_date	status
<input type="checkbox"/>	4	0021	5	Effective C++	Scott Meyers	Hoobstank Publishers	2018-06-03	1
<input type="checkbox"/>	5	01	1	Software Engineering	ABCDEFF	Jacobs Publisher	2018-05-07	1
<input type="checkbox"/>	6	002	5	Python Cookbook	ABCDEFF	Jacobs Publisher	2018-06-01	0
<input type="checkbox"/>	7	005	1	Machinery Handbook	ABCDEFF	Jacobs Publisher	2018-04-03	1
<input type="checkbox"/>	8	555	3	A Brief History of Time	Stephen Hawking	Jacobs Publisher	2018-06-09	1
<input type="checkbox"/>	9	123	5	Java 2	Herbert	Demo Publisher	2018-05-15	0

Check all | With selected: Edit Copy Delete Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

The screenshot shows the phpMyAdmin interface for the 'libsystem' database. The 'Structure' tab is active, displaying a list of tables and their properties. The left sidebar shows the database structure, including 'information_schema', 'libsystem', and 'mysql'.

Filters

Containing the word:

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> admin	Browse Structure Search Insert Empty Drop	2	InnoDB	latin1_swedish_ci	16.0 K	B
<input type="checkbox"/> books	Browse Structure Search Insert Empty Drop	6	InnoDB	latin1_swedish_ci	16.0 K	B
<input type="checkbox"/> borrow	Browse Structure Search Insert Empty Drop	5	InnoDB	latin1_swedish_ci	16.0 K	B
<input type="checkbox"/> category	Browse Structure Search Insert Empty Drop	12	InnoDB	latin1_swedish_ci	16.0 K	B
<input type="checkbox"/> course	Browse Structure Search Insert Empty Drop	5	InnoDB	latin1_swedish_ci	16.0 K	B
<input type="checkbox"/> returns	Browse Structure Search Insert Empty Drop	3	InnoDB	latin1_swedish_ci	16.0 K	B
<input type="checkbox"/> students	Browse Structure Search Insert Empty Drop	5	InnoDB	latin1_swedish_ci	16.0 K	B
7 tables Sum		38	InnoDB	utf8mb4_general_ci	112.0 K	B

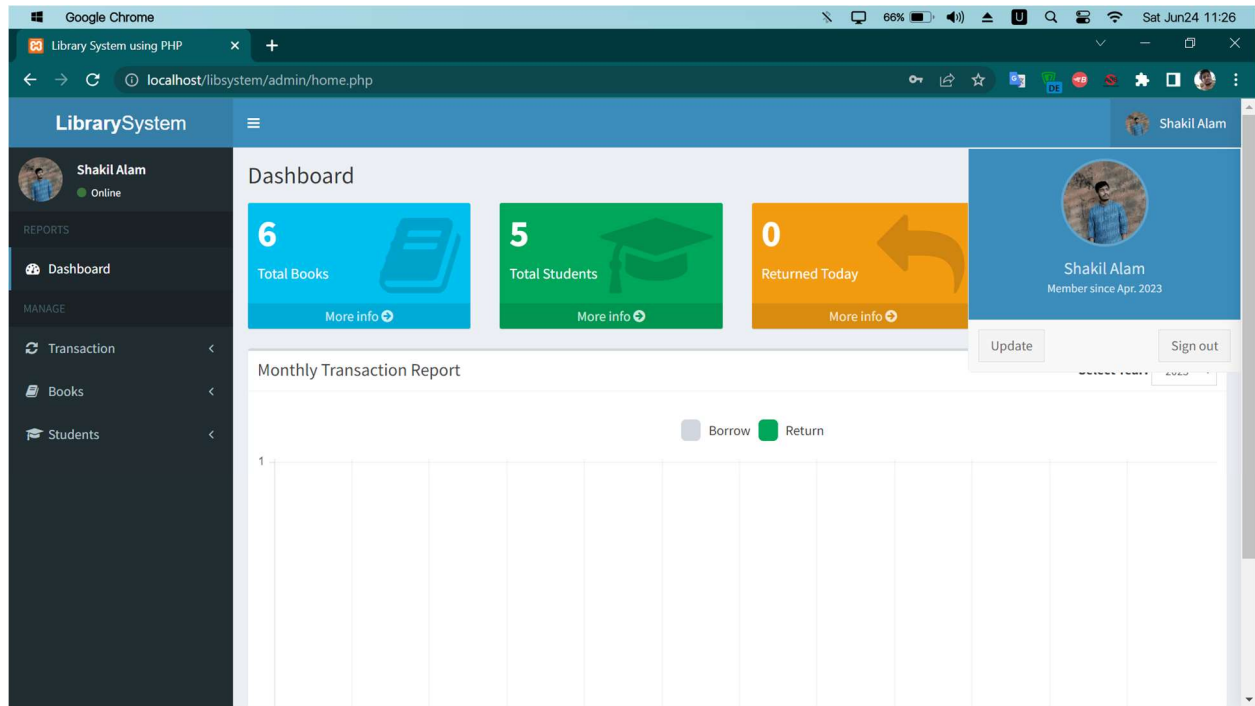
Check all | With selected:

Print Data dictionary

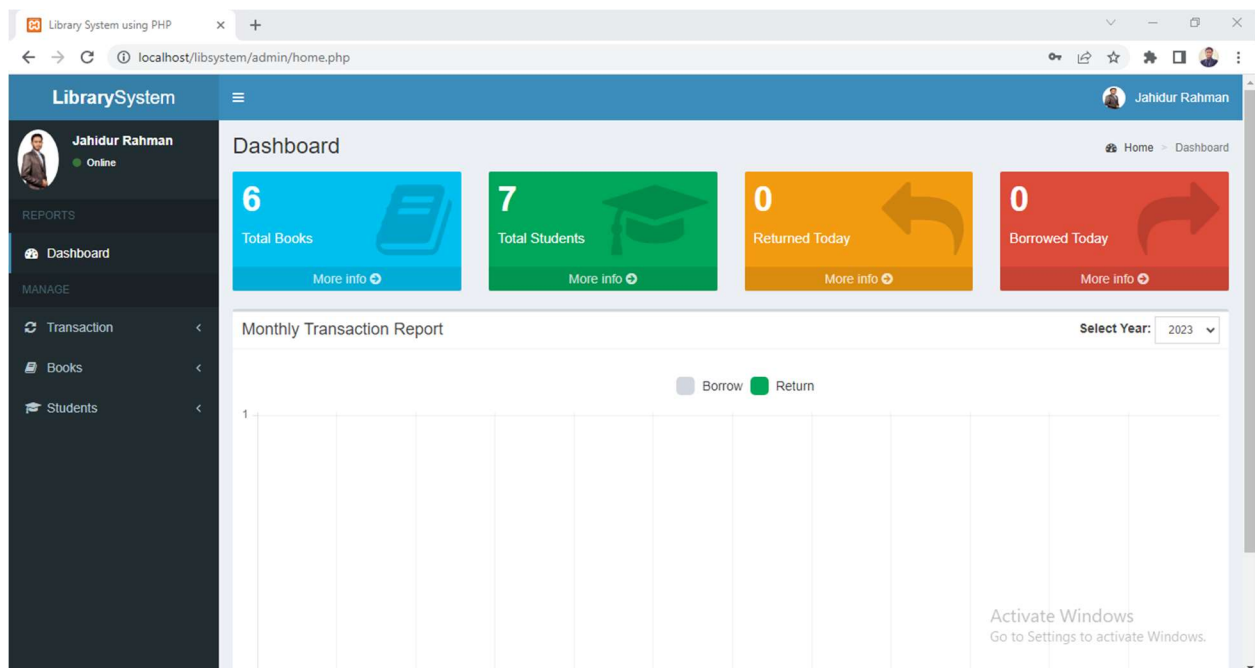
Console new table

Screenshot of Each User Interface Screen

User: Shakil Alam

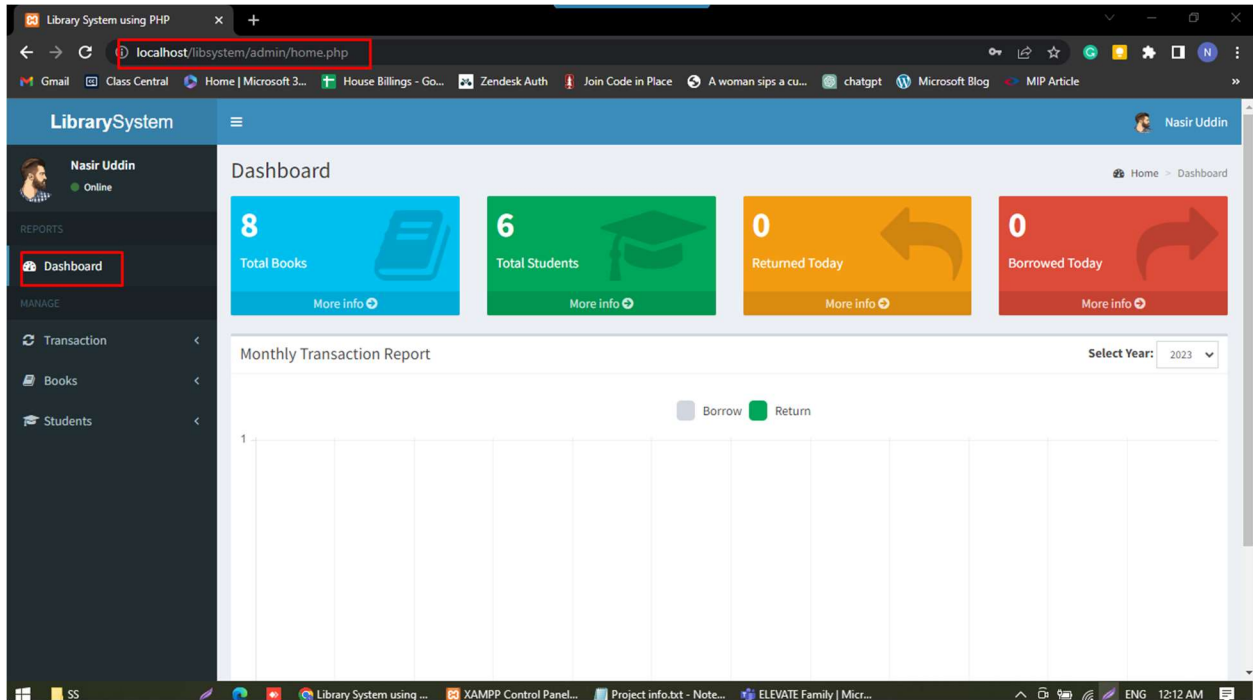


User: Jahidur Rahman



Screenshot of Each User Interface Screen (Cont.)

User: Nasir Uddin



Upgrade/Future Plans for Library Management System

Integration with Library Services: Library management system can integrate additional services such as online book reservations, inter-library loan requests, and virtual book returns. By enabling users to perform these tasks conveniently through the web-app, libraries can streamline their operations, reduce administrative burdens, and enhance user satisfaction.

Add E-Book Service: Library management system can add E-Book Service for the users. User can read virtual books through this web app system.

Add Audiobooks and Digital Archives: Library management system can add Audio books and digital archives Service for the users. User can drive into the digital knowledge media through this web app system.

Enhanced User Experience: Library management system apps can focus on improving the user experience by implementing intuitive interfaces, personalized recommendations, and advanced search functionalities.

These upgrade and future plans will ensure that our platform remains innovative, user-centric, and adaptable to the changing needs and preferences of our users. By continually evolving and staying ahead of the curve, we aim to provide a cutting-edge platform that empowers individuals, fosters connections, and drives positive impact in the digital world.

Conclusion

In conclusion, Library Management System has established itself as a leading online library platform, dedicated to providing a delightful and convenient library managing experience for user. Through our commitment to user satisfaction and a user-friendly interface, we have created a platform that caters to diverse needs and preferences.

Our vision for the future includes continuous improvement and expansion to meet the evolving demands of our users. By prioritizing user experience, embracing technological advancements, and fostering a sense of community, we aim to stay at the forefront of the industry and deliver innovative solutions.

We remain dedicated to maintaining the highest standards of security, privacy, and user support. Our commitment to social responsibility and sustainability ensures that we are not only focused on management growth but also making a positive impact on library system and the environment.

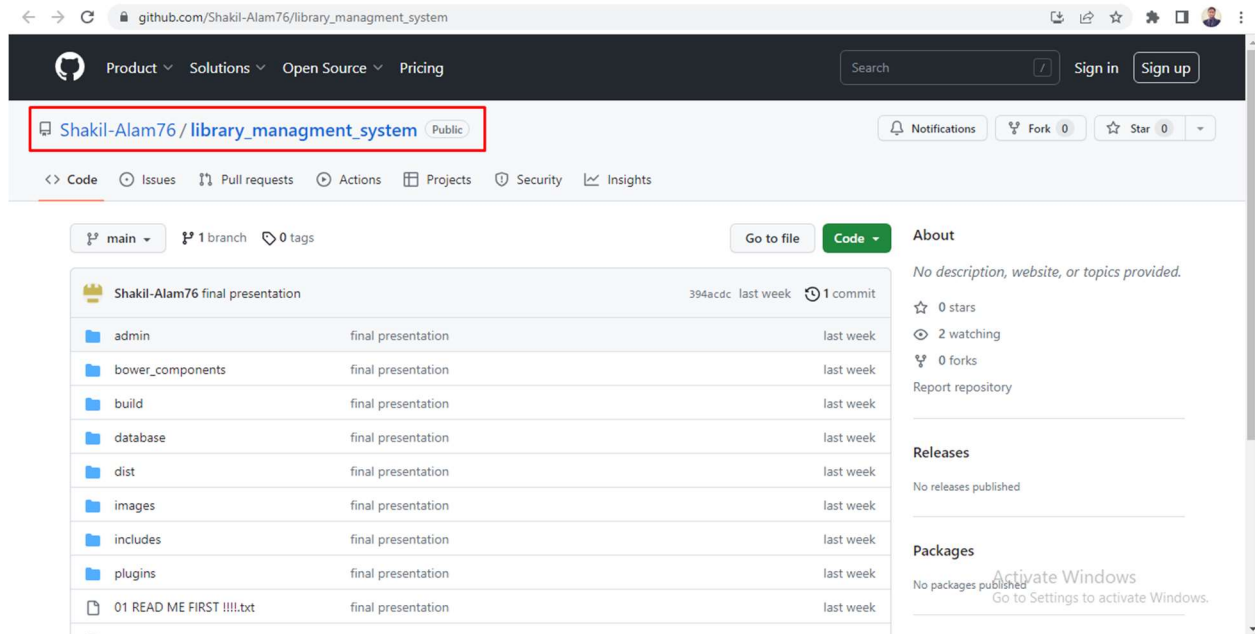
We extend our gratitude to our users and the entire Library Management System community for their ongoing support. We invite you to join us on this journey as we continue to evolve, innovate, and strive for excellence in the online library landscape.

Thank you for choosing Library Management System where happiness meets convenience in the world of online library system.

Resource References

Git Link:

https://github.com/Shakil-Alam76/library_managment_system



Thank You