IITK Library Management System

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CS315 Final Project

Abstract

This project aims to build a simple and easy-to-use **Library Management System**. It is a web-based system that helps in managing books, students and book issue/return activities in a library. I used **PHP** to build the backend and **MySQL** to store the data. This system makes it easier for librarians to keep records and for students to check their book details. It helps reduce the work of managing the library manually and saves time.

1 Motivation and Problem Statement

Managing a library manually takes a lot of time and effort. It is difficult to keep track of which student took which book, when it was issued and when it is due. Also, writing and storing all this information on paper or in Excel sheets can lead to errors.

So, I decided to make a simple web application that automates the main tasks of a library. This system helps librarians and students to do things faster and more accurately. The goal was to make the library system more efficient and user-friendly.

2 Methodology

To build this system, I used **PHP** for the backend (server-side programming) and **MySQL** to store the data. The system is divided into two parts:

- **Admin Panel**: This is for the librarian. They can add and remove books, update student records, issue or return books.
- **User Panel**: This is for students. They can log in to check their book details, request books, and see their borrowing details.

I created a simple interface using HTML, CSS, and a little JavaScript. The backend takes care of all the database operations like inserting, updating, deleting, and reading records.

3 Implementation and Results

Here are the tools and technologies I used in the project:

- **PHP**: To connect the user interface with the database and handle all user requests.

- **MySQL**: To store the information about books, students, and issued books.
- **HTML, CSS, JavaScript**: To make the web pages for both admin and student panels.

The system works well for basic library operations. Here are some important features:

- **Admin Features**: Add new books, delete books, manage student details, issue and return books.
- **User Features**: View issued books, request new books, and check return dates.

Role	Feature	Description
Admin	Add Book	Allows the admin to add details of new books into the system database.
	Book Details	Enables to get the information about books from the library catalog.
	Book request	For accepting the book request done by the student.
	Student details	Produces summaries of student for record keeping.
	Add Student	Admin can add new student records.
	Issue Books	Facilitates book lending transaction.
User	My account	Displays the information of the user.
	Book Request	Allows users to submit requests for new books they wish to borrow.
	Book Record	Shows the information of all the available books.

Table 1: Detailed Description of Admin and User Features

The design is simple, so even nontechnical users can use it easily. It can be run on a local server like XAMPP.

GitHub: `https://github.com/your-repo/library-management-system`

4 Discussion and Limitations

Although the system works fine, there are a few things that can be improved:

- The system is more suitable for small libraries. It may not work well if the number of users or books becomes very large.
- At present, there is no login system with encryption or high-level security, so that should be added for better protection of user data.
- Features like calculating late return fines or sending email notifications are not included yet.

In the future, I would like to:

- Make the interface better and more modern.
- Add more security features.
- Add automatic book availability updates and fine calculation features.

5 Contributions

I worked on this project alone. I did the coding, testing, and documentation myself. It was a great learning experience.

6 Acknowledgement

7 Acknowledgement

I would like to thank MR Developer(@salman) for creating a helpful YouTube tutorial series on building a websites using PHP, MySQL, HTML, and CSS. The videos were very useful in understanding how to structure and develop the project.