Galgotias University

GUVI Project Report

Department:- School of Computer Science and Engineering

Project Title :- *Library Management System Section :- 49*

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LibraryManagementSystem

Library Management System: Take Control of Your Book Collection This Java code provides a foundational framework for a simple library management system. It allows users to:

Create a library: Manage a collection of books with titles, authors, and availability status. Add books: Easily add new books to your library with their details. Borrow books: Simulate the borrowing process, marking books as unavailable. Return books: Track returned books, updating their availability status. List books: View a list of all books in the library, including their availability. This code serves as a starting point for building a more comprehensive library management system. Here are some potential enhancements:

Member Management: Include functionality for adding and managing members, allowing for tracking who borrows which books. Due Dates: Implement a system for assigning due dates to borrowed books and generating overdue notices. Search Functionality: Allow users to search for books by title, author, or keywords. Persistence: Save and load library data to a file or database for persistent storage. Graphical User Interface (GUI): Develop a user-friendly GUI application for easier interaction with the library system. This code demonstrates the basic principles of objectoriented programming and data structures (using ArrayLists) to manage a library collection. It's a valuable tool for practicing these concepts and provides a foundation for building a more robust library management system.

Introduction:-

What is a Library Management System?

A Library Management System is software designed to automate and manage a library's activities such as maintaining book records, issuing and returning books, and managing student records.

Real-life Use:

It reduces paperwork, prevents human error, and enhances the efficiency of managing a library.

Objective of the Project

- •To create a user interface using HTML.
- •To allow users to add, issue, return, and view books efficiently.
- •To learn and implement core software development principles.

Objective

A simple yet efficient library management system with user-friendly features to manage books, users, transactions, and fines.

Features

- User-Friendly Interface: Easy-to-use Swing GUI.
- Book Management: Add, view, search, and filter books.
- User Management: Manage user records with validation.
- Borrow and Return Books: Record transactions with fine calculation.
- Real-Time Search: Search for books dynamically.
- Dark Mode Toggle: UI toggle for light/dark themes.
- Reporting and Statistics: Generate summaries for library usage.

Data Validation

- Ensures non-empty input fields.
- Validates email formats using regex.

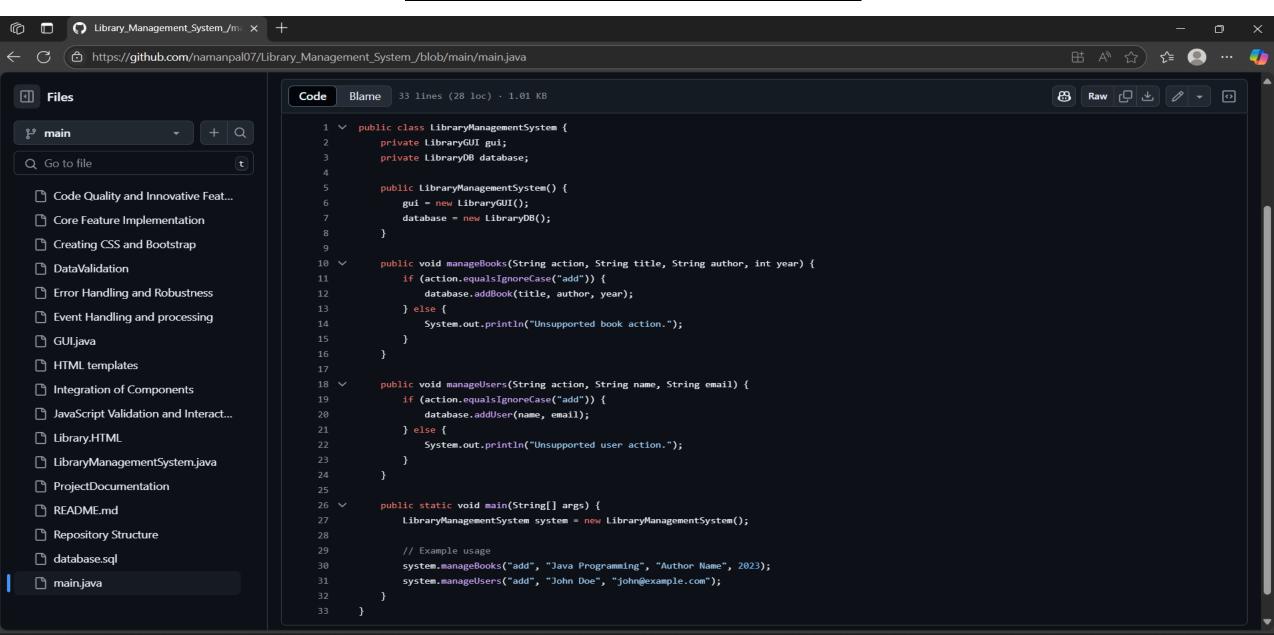
Code Quality

- Modularized code with reusable components.
- · Constants for error messages and queries.

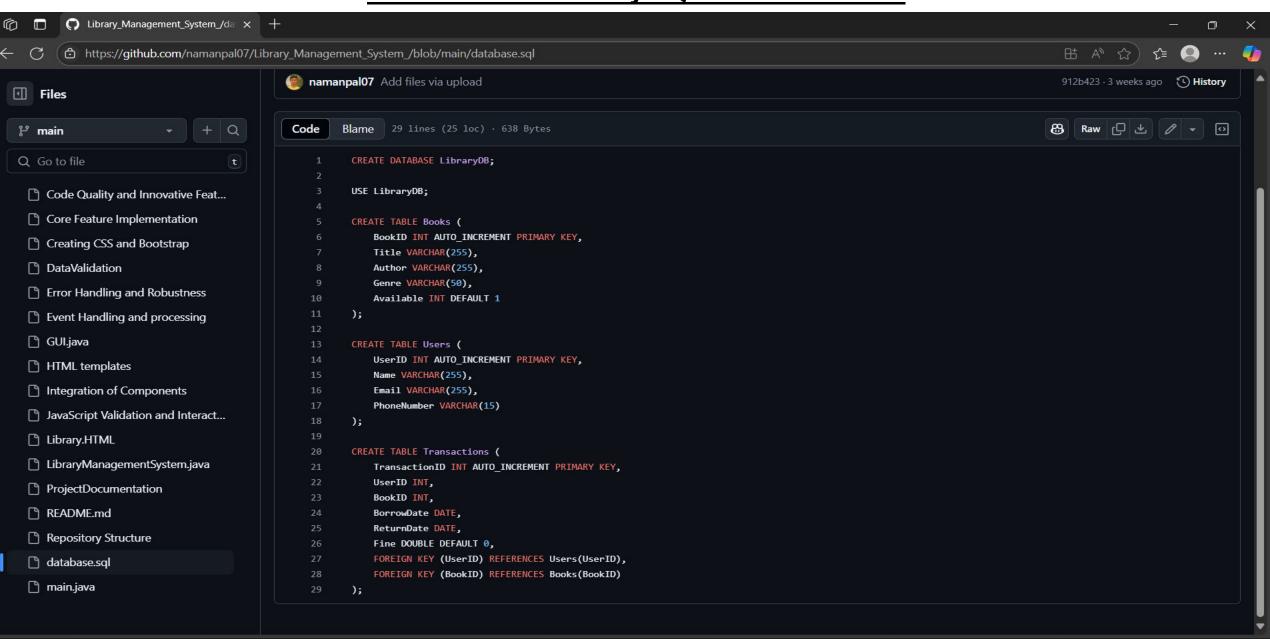
These All Files From GITHUB:-

mamanpal07 Add files via upload		912b423 · 3 weeks ago	2 Commits
Code Quality and Innovative Features	Add files via upload		3 weeks ago
Core Feature Implementation	Add files via upload		3 weeks ago
Creating CSS and Bootstrap	Add files via upload		3 weeks ago
DataValidation	Add files via upload		3 weeks ago
Error Handling and Robustness	Add files via upload		3 weeks ago
Event Handling and processing	Add files via upload		3 weeks ago
🖺 GUI.java	Add files via upload		3 weeks ago
HTML templates	Add files via upload		3 weeks ago
Integration of Components	Add files via upload		3 weeks ago
JavaScript Validation and Interactivity	Add files via upload		3 weeks ago
Library.HTML	Add files via upload		3 weeks ago
LibraryManagementSystem.java	Add files via upload		3 weeks ago
ProjectDocumentation	Add files via upload		3 weeks ago
□ README.md	Add files via upload		3 weeks ago
Repository Structure	Add files via upload		3 weeks ago
🖺 database.sql	Add files via upload		3 weeks ago
🖺 main.java	Add files via upload		3 weeks ago

This is The Code of Main java File:-



This the Database Of SQL From GITHUB:-



CONCLUSION:-

The Library Management System project provided a practical understanding of how Object-Oriented Programming (OOP) principles can be applied to solve real-world problems. By using Java, we implemented core concepts such as encapsulation, constructors, static variables, and class-based design. The integration of HTML offered a basic user interface to interact with the system.

This project not only improved our **coding skills and logic building**, but also gave insights into **modular software design**, problem-solving, and the importance of **user-friendly interfaces**.

It served as a strong foundation for developing more advanced applications in the future.

FUTURE SCOPE:-

While the current system fulfills basic library operations, several enhancements can significantly increase its effectiveness and usability:

Database Integration: Use of MySQL or MongoDB to store data persistently and securely.

User Authentication: Implement admin and user login systems to manage access control.

Responsive Web Interface: Upgrade UI using HTML, CSS, and JavaScript or modern frameworks like React.

Notifications: Add due-date reminders via email or SMS.

Reporting System: Generate automatic reports for books issued, returned, and overdue.

Mobile App Integration: Develop an Android/iOS app to provide remote access to library services.

Cloud Deployment: Host the system on a web server or cloud platform for real-time online access.