Library Management System - README

A Java Swing and MySQL based desktop application to manage library operations for students and admins. The system provides features for adding, searching, issuing, renewing, and deleting books, along with penalty calculation for overdue books.

# Features

## Admin Panel

- Login/Logout functionality

- Add new books to the library

- Issue books to students

- View issued book details

- Delete books from the database

- Manage overdue penalties

## Student Dashboard

- Login/Logout functionality

- View issued books

- Search for books

- Renew issued books

- Check penalty details for overdue books

# Tech Stack

• Programming Language: Java

• GUI Framework: Java Swing

• Database: MySQL

• Database Connector: JDBC

• Additional Tools: MySQL Workbench

# Project Structure

LibraryManagementSystem/  
│  
├── src/  
│ ├── AdminLogin.java  
│ ├── StudentLogin.java  
│ ├── AddBook.java  
│ ├── IssueBook.java  
│ ├── ViewBookDetails.java  
│ ├── SearchBook.java  
│ ├── BookRenewal.java  
│ ├── PenaltyCalculation.java  
│ └── DatabaseConnection.java  
│  
├── lib/ # JDBC driver and dependencies  
├── assets/ # Images and backgrounds for GUI  
└── README.md

# Installation & Setup

1. Clone the repository:

git clone https://github.com/your-username/library-management-system.git

cd library-management-system

2. Set up MySQL Database:

- Create a new database: CREATE DATABASE library;

- Create tables for books, users, and issued books.

- Import the provided SQL file (library.sql) into MySQL Workbench.

3. Add JDBC Connector:

- Place the mysql-connector-java.jar file in the lib folder.

- Add it to your Java project’s build path.

4. Run the Application:

- Open the project in your IDE (Eclipse/IntelliJ/NetBeans).

- Run Main.java to start the application.

# Future Enhancements

- Implement user authentication with hashing

- Add reporting & analytics dashboard

- Implement cloud database support

- Add book category & genre management

- Deploy as a web application using Spring Boot

# Author

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