

Data Structures & Algorithms
(CS-250)

OPEN-ENDED LAB

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User Manual
BookTrack Nexus
Library
Management System

A Comprehensive Library Management System in Java, integrating Data Structures & Algorithms, Object-Oriented Programming, and Database Management with MySQL, ensuring efficient and secure operations.

User Manual

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1. Introduction

1.1 Purpose of the Manual

This user manual provides detailed instructions on utilizing the Library Management System, outlining its features and functionalities.

1.2 System Overview

The Library Management System is a Java-based application designed to efficiently manage library resources, user interactions, and transactions. Key features include user authentication, book and student management, transaction tracking, and a user-friendly dashboard.

1.3 Key Features

User Authentication

Book and Student Management

Transaction Tracking

Search, Sort, Issue, and Return Books

Dashboard with Comprehensive Functionalities

2. Getting Started

2.1 System Requirements

Java Runtime Environment (JRE)

MySQL Database

Internet Browser (for web-based applications)

2.2 Installation

Download the application from the provided source.

Install the necessary Java Runtime Environment.

Set up the MySQL database with the provided script.

Configure the application's database connection in `JavaConnect.java`.

Run the application.

2.3 Logging In

Launch the application.

Enter your credentials (username and password) on the login screen.

Click "Login."

2.4 User Authentication

New users can register by clicking "Sign Up" and providing the required information.

Password recovery options are available for forgotten passwords.

3. Navigating the Dashboard

3.1 Home Screen Overview

Upon successful login, users are directed to the home screen, which serves as the central hub for library management operations.

3.2 Dashboard Functionalities

Add Students and Books

View Transaction History

Search and Sort Books and Students

Issue and Return Books

About the Application and Developer Information

Logout and Exit

4. Managing Books

4.1 Adding New Books

Click on "Add Book" in the dashboard.

Input book details: title, author, publisher, edition, etc.

Click "Submit" to add the book to the system.

4.2 Viewing All Books

Click on "All Books" in the dashboard.

Scroll through the list or use search and sort functionalities.

4.3 Searching and Sorting Books

Click on "Search and Sort" in the dashboard.

Enter criteria for search or use default sorting options.

4.4 Issuing and Returning Books

Click on "Issue" or "Return" in the dashboard.

Select book and user details.

Confirm the transaction.

5. Managing Students

5.1 Adding New Students

Click on "Add Student" in the dashboard.

Input student details: name, course, year, semester, etc.

Click "Submit" to add the student to the system.

5.2 Viewing Registered Students

Click on "Registered Students" in the dashboard.

Scroll through the list or use search and sort functionalities.

5.3 Search and Sort Students

Click on "Search and Sort" in the dashboard.

Enter criteria for search or use default sorting options.

6. Transaction History

6.1 Viewing Transaction Log

Click on "Transaction History" in the dashboard.

Scroll through the log or use filtering options.

6.2 Understanding Transaction Details

Click on a specific transaction to view details.

Understand the date, book details, user details, etc.

6.3 Filtering Transactions

Use filtering options to narrow down transactions.

Filter by date, user, book, etc.

7. Settings and User Profile

7.1 Changing Password

Click on "Settings" in the dashboard.

Select "Change Password."

Enter old and new passwords.

7.2 Logging Out

Click on "Logout" in the dashboard.

Confirm the logout action.

8. Additional Features

8.1 About the Application

Click on "About" in the dashboard.

Read information about the Library Management System.

8.2 Developer Information

Click on "Developer Info" in the dashboard.

Access details about the developer.

8.3 Exiting the System

Click on "Exit" in the dashboard.

Confirm the exit action.

9. Troubleshooting and FAQs

9.1 Common Issues

Check internet connectivity.

Ensure Java and MySQL are properly installed.

Verify correct database configurations.

9.2 Frequently Asked Questions

How to reset my password?

What should I do if the application crashes?

How to resolve login issues?

10. Conclusion

10.1 Acknowledgments

We appreciate your usage and feedback, contributing to the improvement of the Library Management System.

10.2 Feedback and Support

For any queries or assistance, please contact our support team at [ahmadsultan3.0@outlook.com].