**LIBRARY MANAGEMENT SYSTEM**

With the popularity of computers and the improvement of application level, after investigation and comparison, I decided to use my Java knowledge to develop a small library management system to facilitate the management of books. Library management system is a typical information management system. This assignment uses the JAVA development tool INTELLiJ and MySQL database to develop this library management system. The system solves the problems of library management and can meet the basic requirements of library management, including functions such as addition and management. This system can quickly and conveniently provide readers with borrowing services according to the needs of users.

Project it there on GitHub and clone commands are (<https://github.com/gauravsharma2/Library_Management>):

<https://github.com/gauravsharma2/Library_Management.git>

[git@github.com:gauravsharma2/Library\_Management.git](mailto:git@github.com:gauravsharma2/Library_Management.git)

**DESIGN DECISION AND ASSUMPTIONS: -**

The project is built on the MacOS system by using JAVA and MYSQL. In the given project I have created the username & password considering for user privacy and assuming that user and admin there are 2 different kind of people who will be using this system but according to the requirements I have implemented the admin function as it covers mostly the admins functionalities for fine calculation and borrowers’ addition. I have implemented some user part also but out code is using ADMIN MODE only.

**System Architecture: -**

I have divided the code into the following functions, and I will be explaining you function-wise:

* Main: - Main Class calling all the other functions
* Login: - User and Admin Login
* Create: - Creating the Database
* User Menu: - User Functions ( In our project we are using ADMIN MENU ONLY)
* Admin Menu: - Admin functions for checking books and Fines and Borrowers.

Also, to create a GUI, I will be using Swing. Swing is a library, or a set of program components used to create graphical user interface components such as scroll bars, buttons, dialog boxes, etc.

To fun the code we need to directly put all the dependencies (which I have mentioned in the System Requirements parts) and then run the Main class main function and UI will start.

After Running main function I have already inserted the username and Password for admin which is USERNAME: - ADMIN and PASSWORD: - ADMIN (both case insensitive)

After entering to the admin mode, you can see the different functionality.

### **System Requirements**

To execute the below project, you will need the following business requirements:

* [MySQL Community Server](https://www.edureka.co/blog/install-mysql/)
* MySQL JDBC Connector
* [Java](https://www.oracle.com/technetwork/java/javase/downloads/index.html)
* INTELIIiJ
* rs2xml.jar

The rs2xml jar is used to display the data in a table format. So, once you create a project in Eclipse IDE, you have to import the rs2xml jar and [JDBC connector JAR](https://www.edureka.co/blog/connect-mysql-database-in-java) into the project.

To do that, **right-click on the project**, choose**Build Path** -> **Configure Build Path**. In the dialog box, which opens, choose **Add External JARs**, and add the JAR files.

**QuickStart Guide :-**

Download the project setup the xml file and dependencies.

1. Enter the project and go to the main file and do the changes for database username and password for Main.java , AdminMenu.java , UserMenu.java , Create.java , Login.java.
2. Setup the path for Book.csv and Borrower.csv file.
3. Run the main function in Main class.
4. Enter username and password as ADMIN (both are same for username and password).
5. After going to ADMIN mode use the functionality whatever required.

**Database consists of 6 Tables named as :-**

DATABASE NAME: - LIBRARY

DATABSE USERNAME AND PASSWORD IS “root” & “root” in code user can change according to that only.

TABLES USED: -

AUTHORS

BOOK

BOOK\_AUTHORS

BOOK\_LOANS

BORROWER

FINES

USERS

Table Structure: -

AUTHORS: - AuthorID | NAME

BOOK: - ISBN |BTITLE| AVAILABILITY

BOOK\_AUTHORS: - AuthorID | ISBN

BOOK\_LOANS: - LOAN\_ID | ISBN | CARDID | RETURN\_DATE | DUE\_DATE |ISSUED\_DATE

BORROWER: - CARDID| SSN| BNAME| ADDRESS|PHONE\_NUMBER

FINES: - LOAN\_ID | FINE\_AMOUNT |PAID

USERS: - UID | USERNAME | PASSWORD | | ADMIN