Library Management System

Project Introduction

Library management system is building applications in java. This project focuses on how to create a book rental management system project in java. The system is divided into two roles: administrator and user(borrower). This system could be used in local bookstores. The main feature of this system is that all the books available in the bookstore can be borrowed by users and also the borrowed books by users can be returned in the bookstore.

The main features of the administrator include create and reset databases, add users, view users, issue books, view books and return books. The main features of ordinary users include viewing books and borrowing books.

Technology

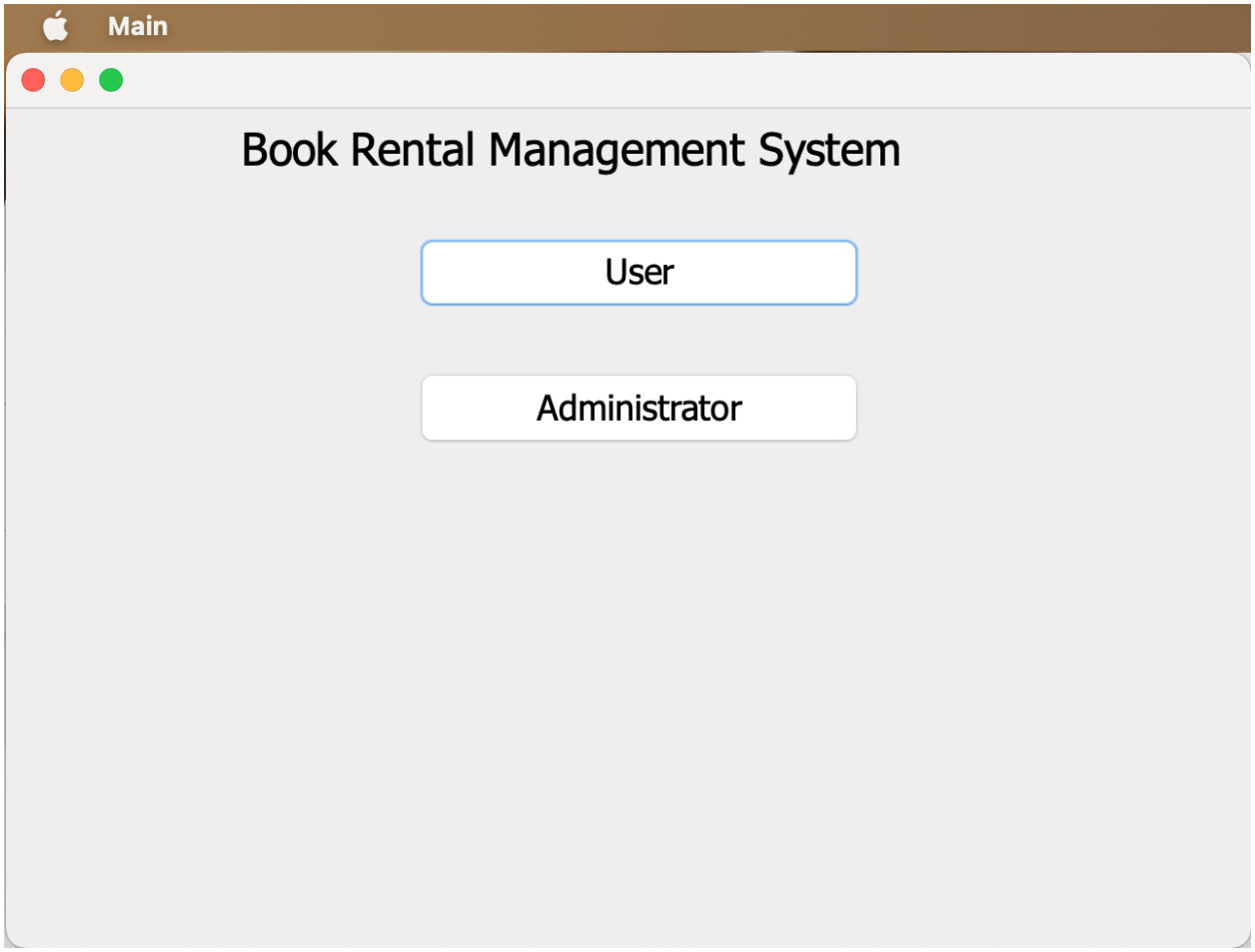
Java, Eclipse IDE, MySQL(open-source relational database management system), MySQL Community Server, MySQL JDBC Connector, Databases, JDBC, GUI, rs2xml.jar(used to display the data in a table format).

Key Activities

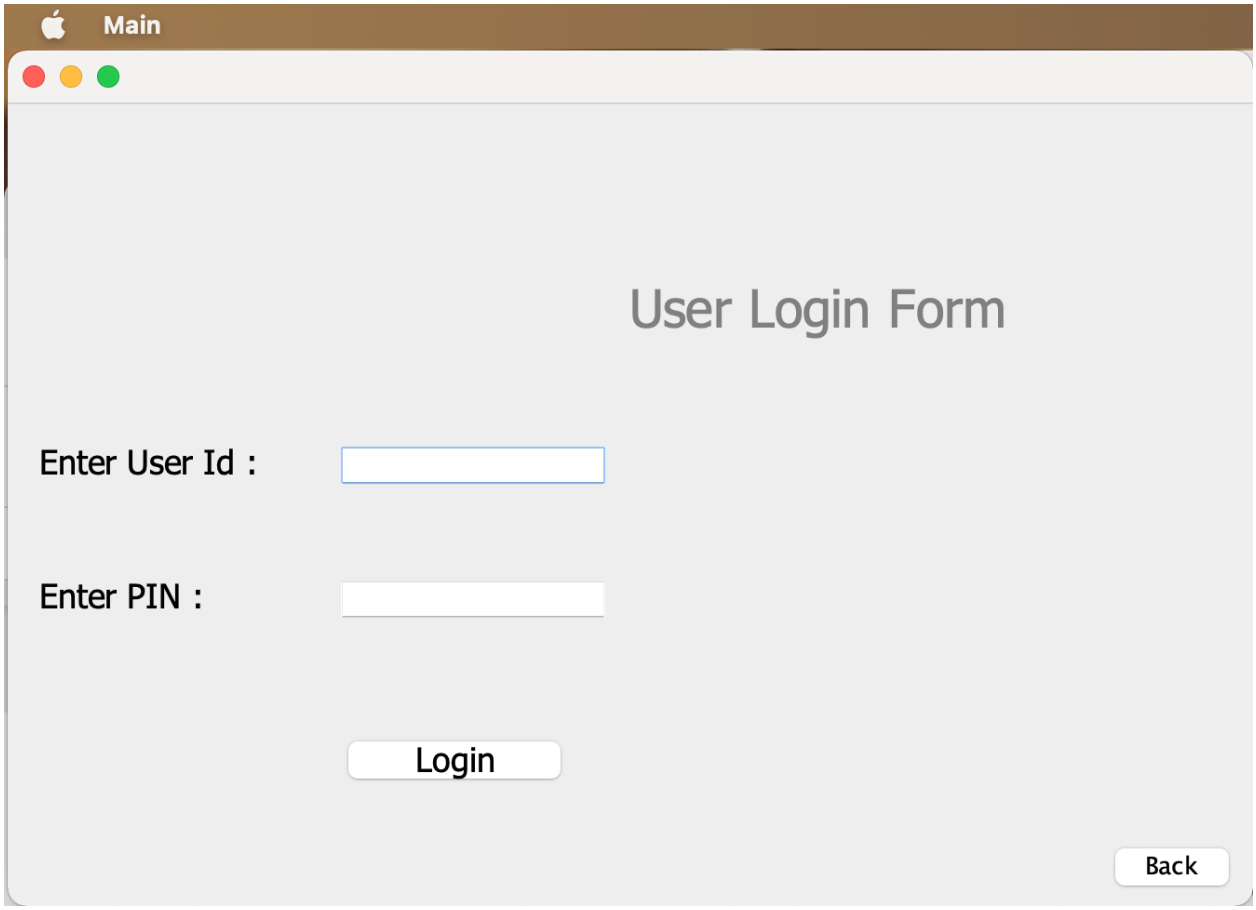
1. Download MySQL
2. Import the rs2xml.jar and JDBC connector JAR into the project
3. Use Swing to create GUI(graphical user interface) components such as scroll bars, buttons, dialog boxes.
4. Connect the MySQL database to the GUI
5. Create the database, tables and data into these tables
6. Create a Login class for admin and create a Login class for users with Runnable interface to implement multi-threading.
7. Connect, create and reset database.
8. Create User Menu functions.
9. Create Admin Menu functions.

Design and Development of the Project with Image Results

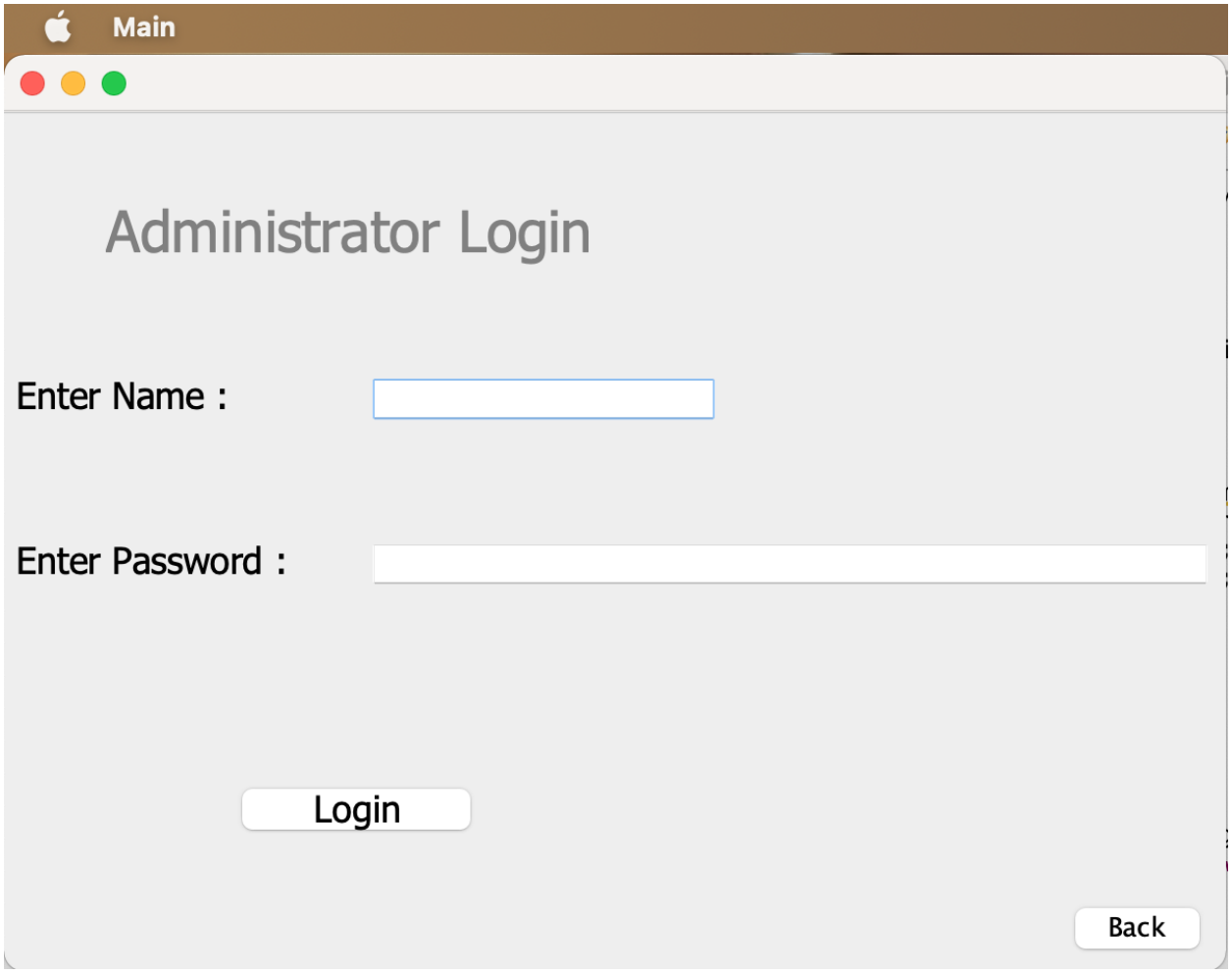
1. Main. java
Run Main.java



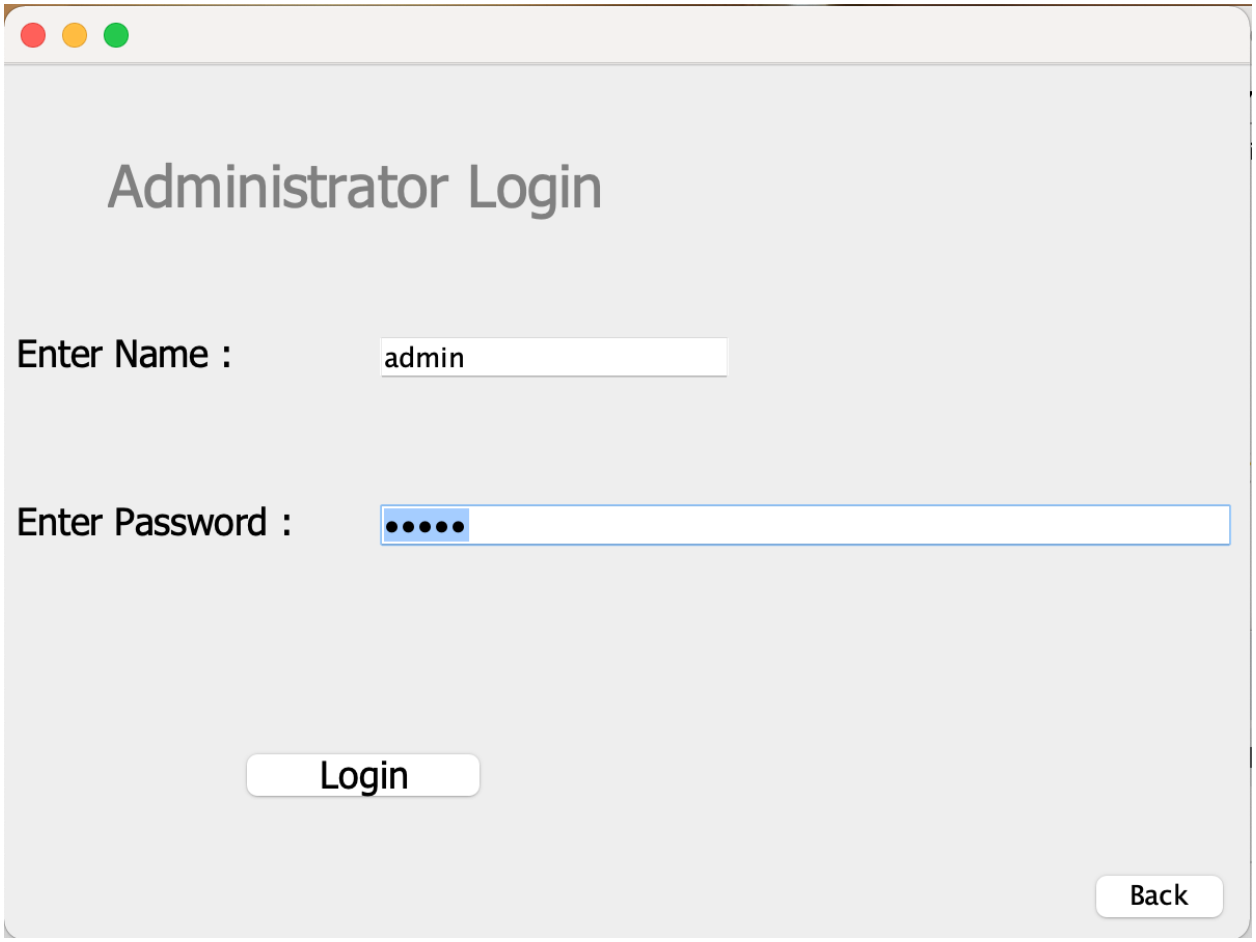
Click User,



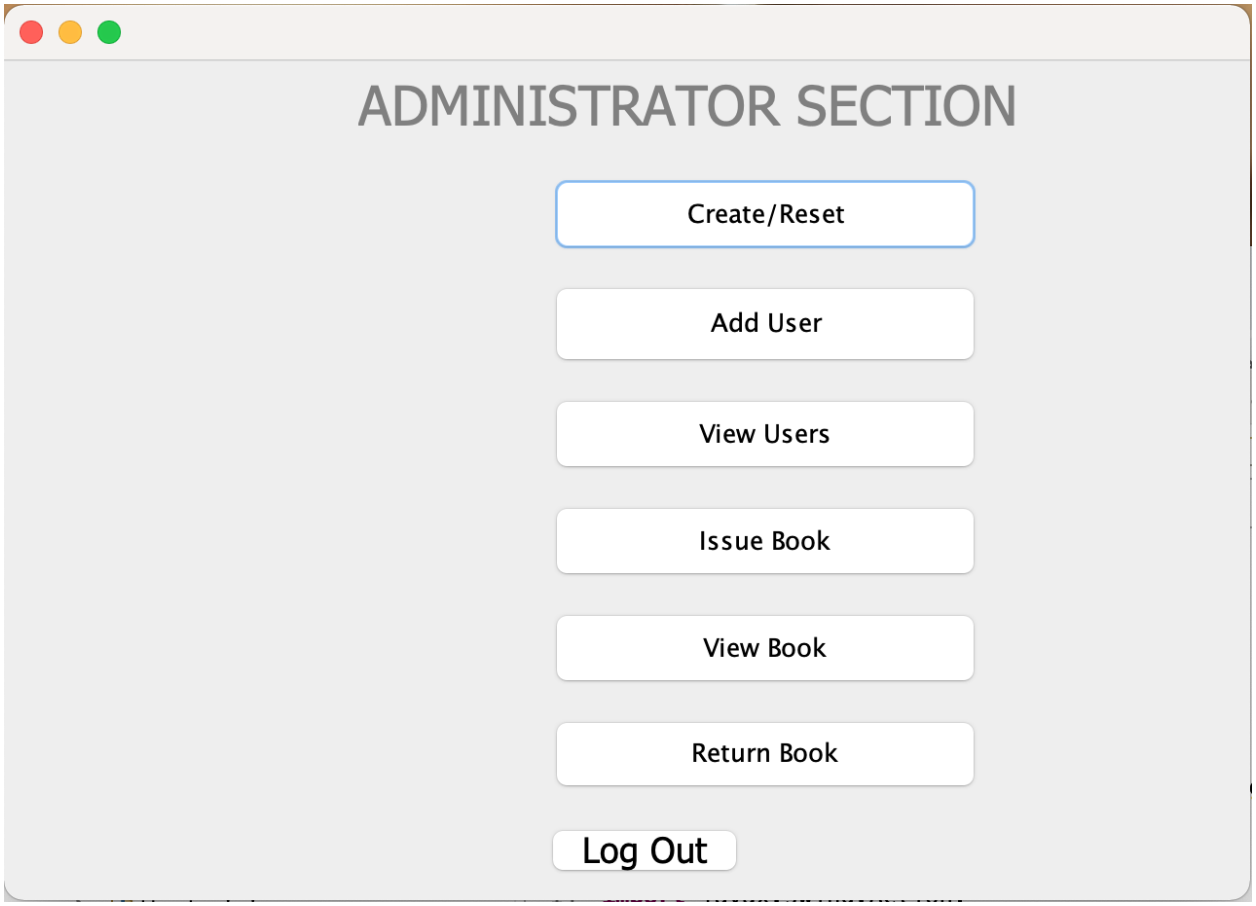
Back, click Administrator,



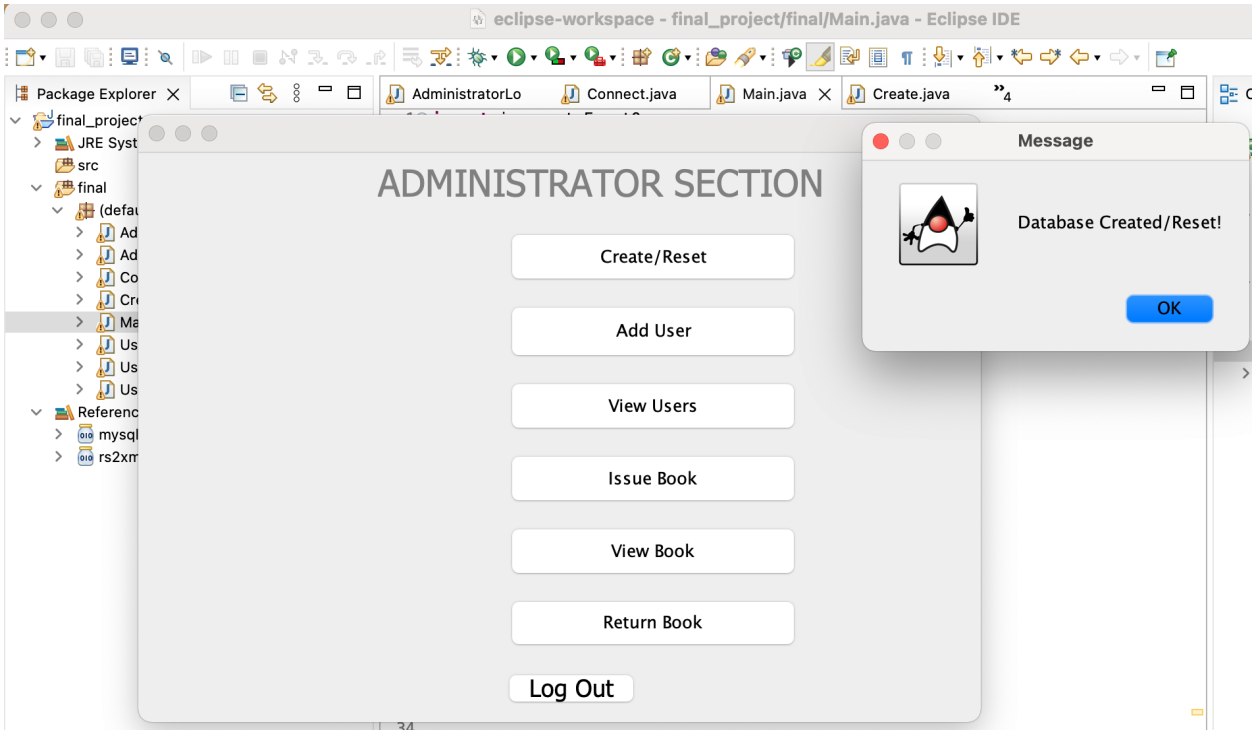
2. AdministratorLogin.java
Create a Login class for admin with Runnable interface to implement multi-threading. Runnable is an interface, which provides the method run. Threads are implementations and use Runnable to call the method run().
Enter name “admin” and password “admin”



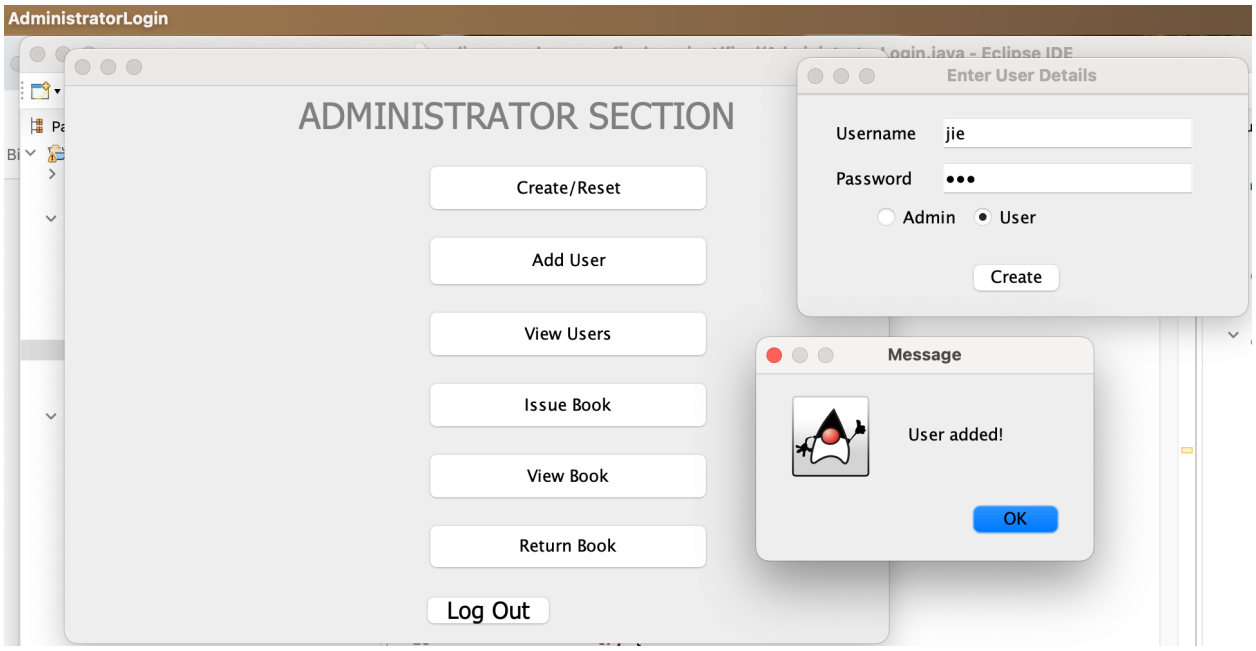
If successful, the AdminSuccess.java will automatically run.
And you will see this,



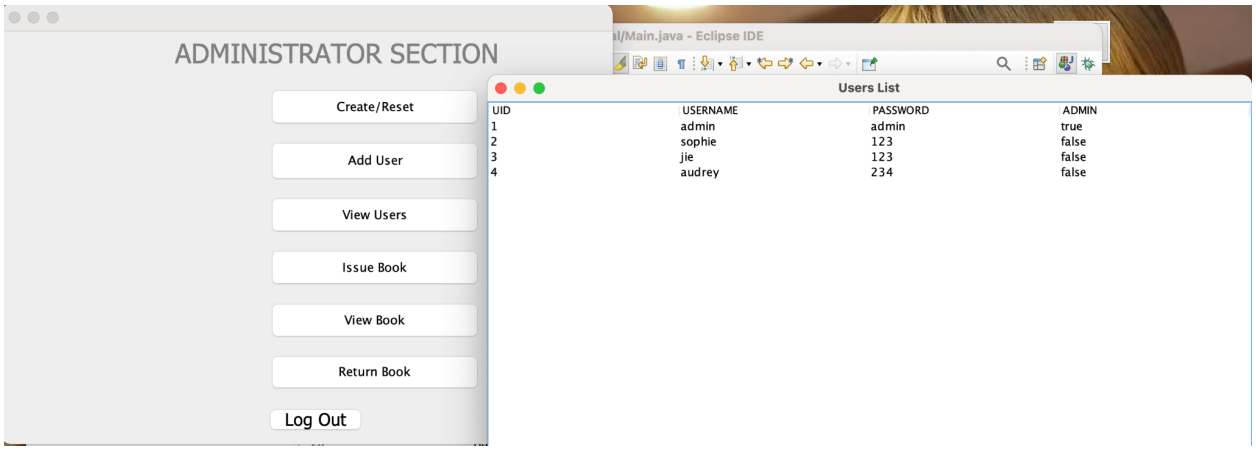
3. AdminSuccess.java
Create/Reset:
Connect.java is used to connect the database to the GUI. We are connecting our MySQL database with the username”root” and password”abc123##” to our application. Once the application is connected to the database, then we create or reset the database.
Create.java is used to create the database, tables and add data into these tables. We use SQL statements to achieve this.



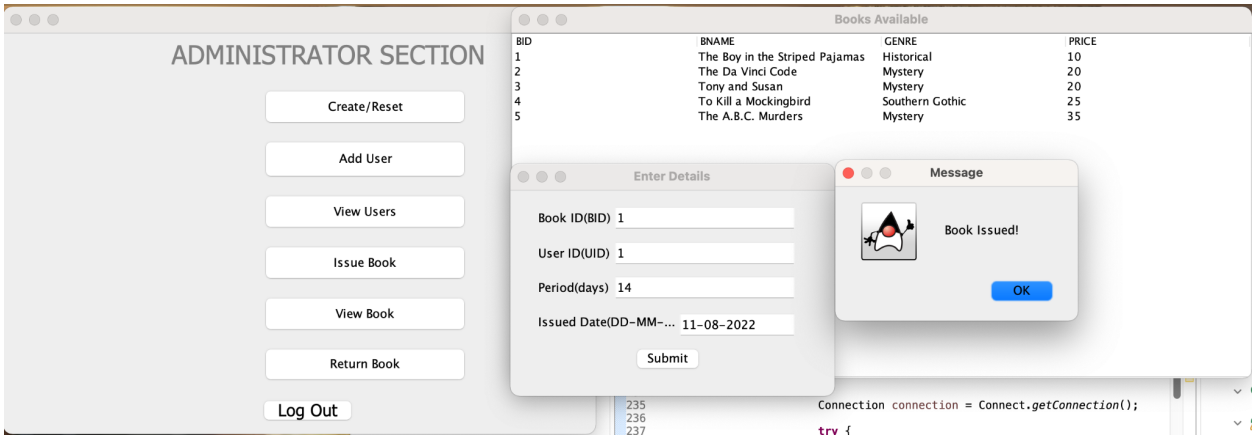
Add User:



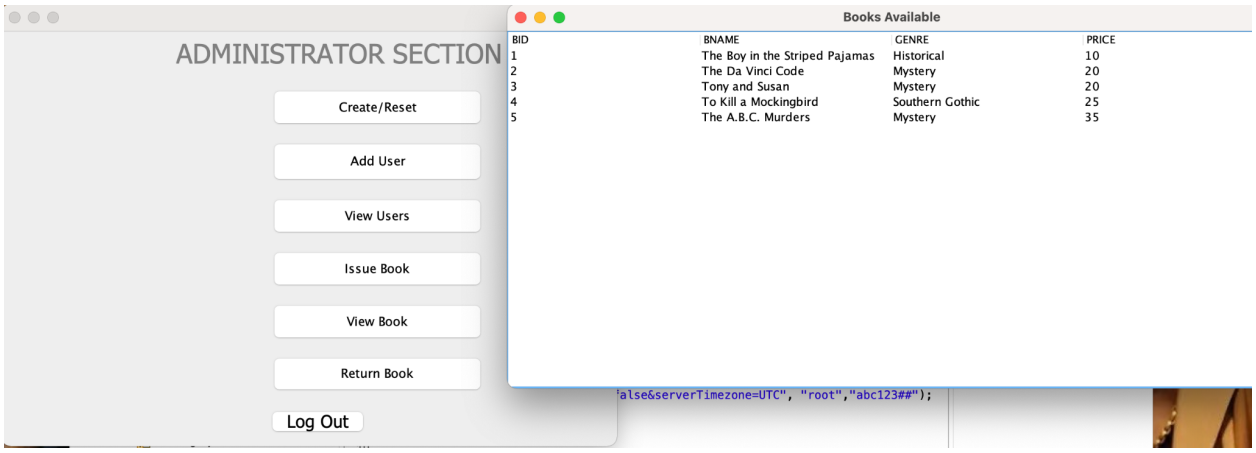
View Users:



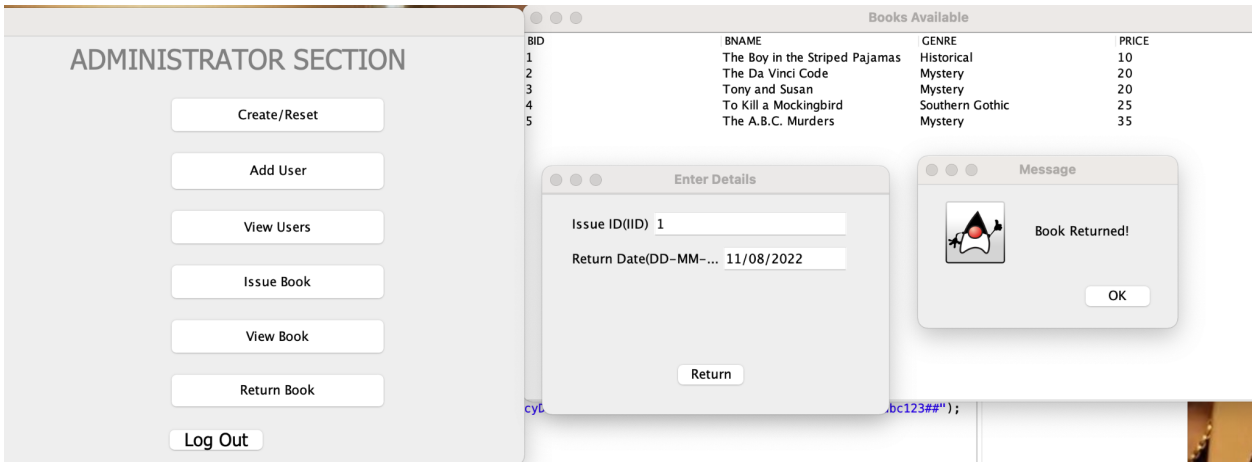
Issue Book:



View Book:



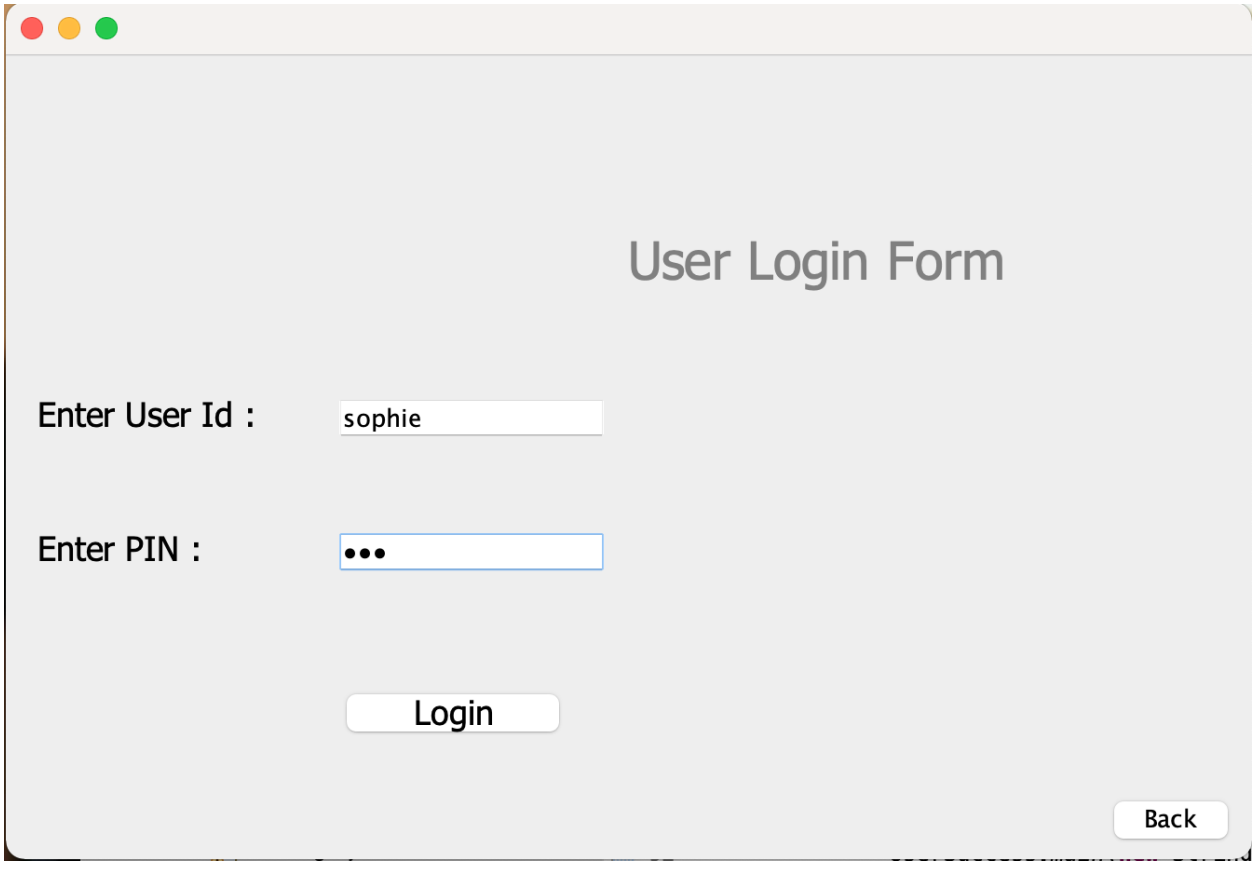
Return Book:



4. UserLogin.java

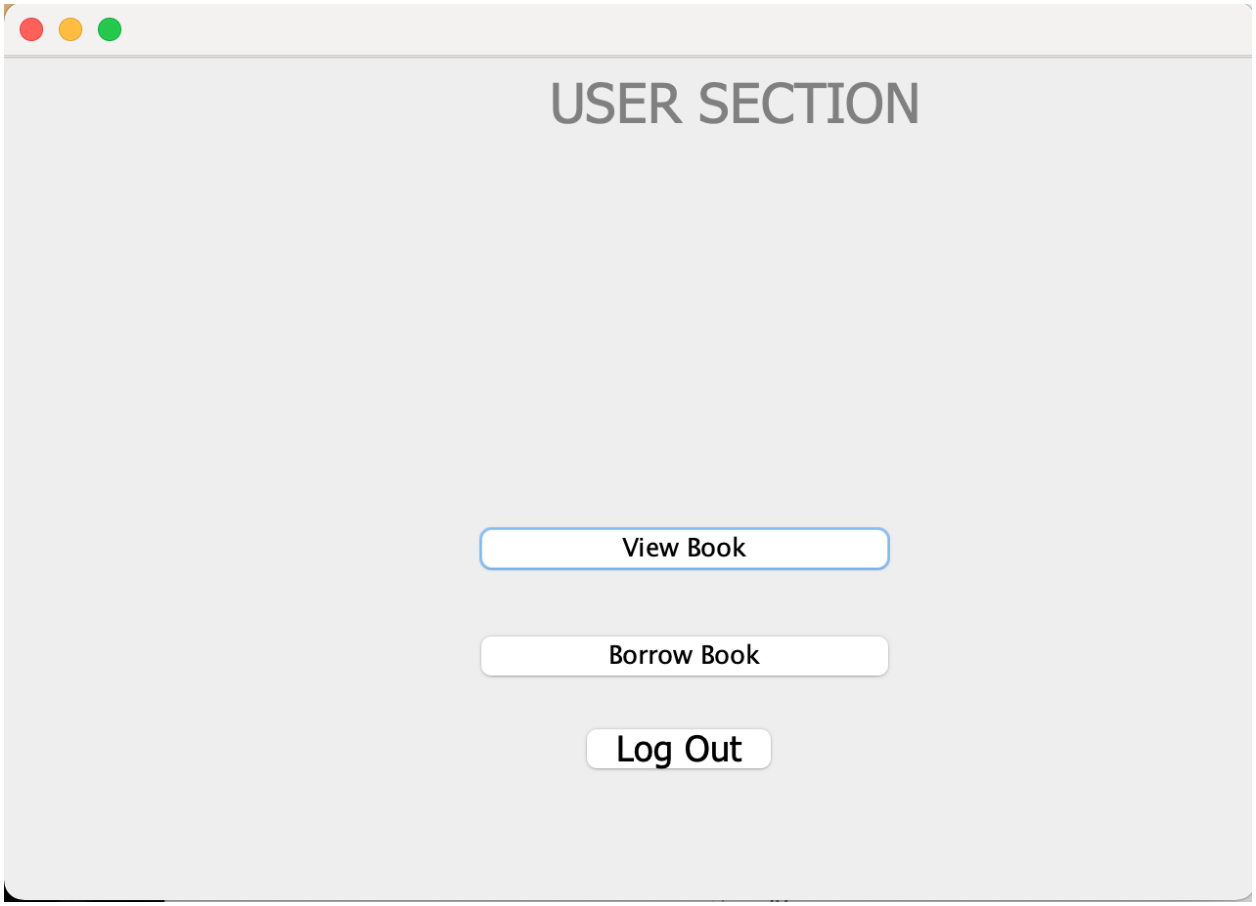
Create a Login class for users with Runnable interface to implement multi-threading. Runnable is an interface, which provides the method run. Threads are implementations and use Runnable to call the method run().

Enter name “sophie” and password “123”

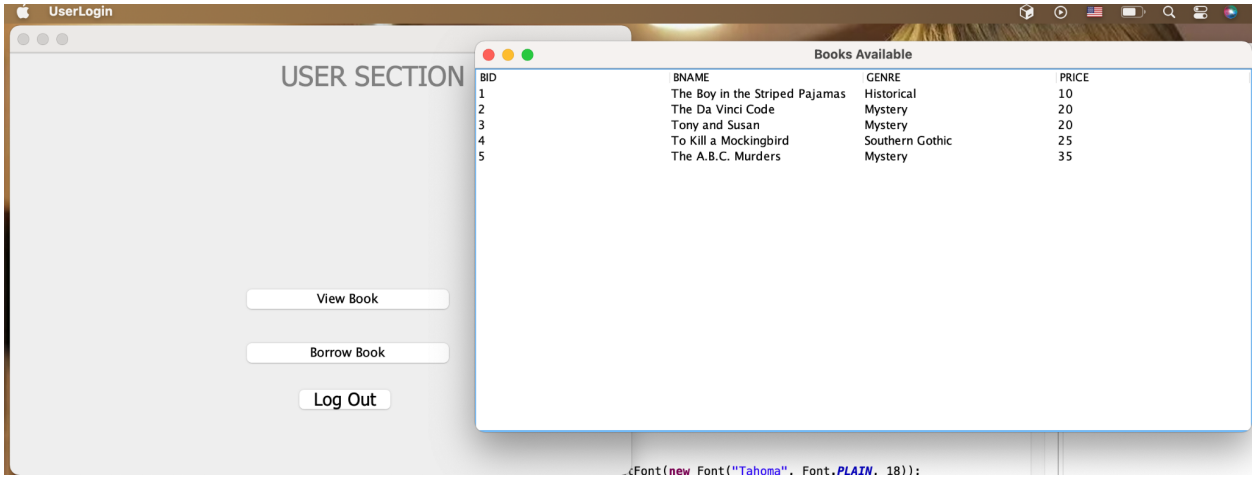


If successful, the UserSuccess.java will automatically run.

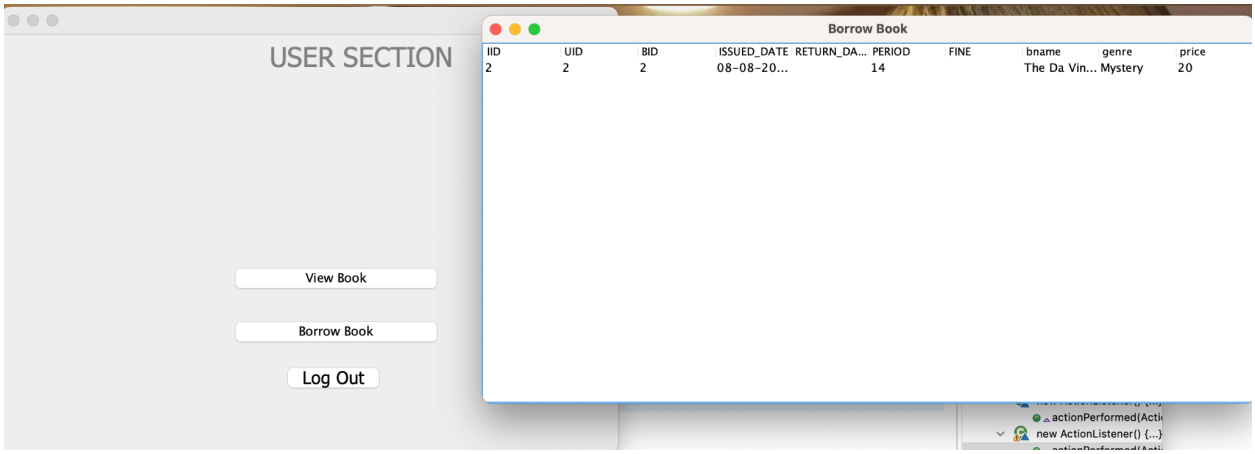
And you will see this,



5. UserSuccess.java
View Book:



Borrow Book: user sophie with UID 2 borrow the book with BID 2


USER SECTION
View Book
Borrow Book
Log Out
Borrow Book
IID UID BID ISSUED_DATE RETURN_DA... PERIOD FINE bname genre price
2 2 2 08-08-20... 14 The Da Vin... Mystery 20
actionPerformed(Acti
new ActionListener() {...}