

Library Management System

The **Library Management System** is a desktop application developed using Java Swing for the user interface and Oracle SQL for database management. It provides an efficient solution for managing library operations, enabling users to streamline book transactions and student interactions.

Key Features

1. **Login & Signup:**
 - Secure authentication system to allow access for authorized users.
 - New users can register through the Signup form.
2. **Home Dashboard:**
 - Central hub displaying navigation options for managing library functions.
3. **Add Books:**
 - Simplifies the process of adding new books to the library collection, including metadata such as title, author, and publication details.
4. **Add Student:**
 - Enables administrators to register new students into the system with their details.
5. **Book Details:**
 - View and manage the complete inventory of books available in the library.
6. **Issue Book:**
 - Handles issuing of books to students, with tracking for due dates.
7. **Book Returning:**
 - Manages book return processes and updates availability status in real-time.

Technology Stack

- **Frontend:** Java Swing (JFrames for GUI)
- **Backend:** Oracle SQL (Database for storing and managing data)

This project is designed to provide a seamless and user-friendly interface for library management, ensuring operational efficiency and reducing manual workloads.

LOGIN JFRAME

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
  
    try {  
        Connection con = ConnectionProvider.getCon();  
        String username = jTextField1.getText();  
        char[] pass = jPasswordField1.getPassword();  
        String password = new String(pass);  
        System.out.println(username + " " + password);  
        String q = "Select * from libusers where email=?";  
        PreparedStatement ps = con.prepareStatement(q);  
        ps.setString(1, username);  
        ResultSet rs = ps.executeQuery();  
        if (rs.next()) {  
            String storeduser = rs.getString("name");  
            String storedPass = rs.getString("Password");  
            System.out.println("Stored" + storeduser + " " + storedPass);  
            if (password.equals(storedPass)) {  
                // JOptionPane.showMessageDialog(null, "Login Success");  
                setVisible(false);  
                new Home().setVisible(true);  
            }  
        } else {  
            JOptionPane.showMessageDialog(null, "Username/Password does not exist.");  
        }  
    } catch (SQLException e) {  
        JOptionPane.showMessageDialog(null,e);  
    }  
}
```

HOME JFRAME

```
private void formComponentShown(java.awt.event.ComponentEvent evt) {
try {
    Connection con = ConnectionProvider.getCon();

    PreparedStatement ps = con.prepareStatement("Select * from
LibissueBook",ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_UPDATABLE);

    ResultSet rs = ps.executeQuery();

    ViewIssueList.setModel(DbUtils.resultSetToTableModel(rs));

} catch (SQLException e) {
    JOptionPane.showMessageDialog(null, e);
}

// TODO add your handling code here:
}
```

Add Book JFRAME

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
try{
    Connection con = ConnectionProvider.getCon();

    PreparedStatement ps = con.prepareStatement("insert into LibBooks values
(?,?,?,?)");

    ps.setString(1,jTextField1.getText());
    ps.setString(2,jTextField2.getText());
    ps.setString(3, jTextField3.getText());
    ps.setString(4, "NO");

    ps.executeQuery();

    JOptionPane.showMessageDialog(null,"Book Details feeded successfully.");

    setVisible(false);

    new addBook().setVisible(true);
} catch (SQLException e){
    JOptionPane.showMessageDialog(null,e);
}
```

```
}  
// TODO add your handling code here:  
}
```

ADD STUDENT JFRAME

```
private void jTextField1FocusGained(java.awt.event.FocusEvent evt) {  
    // TODO add your handling code here:  
    if(jTextField1.getText().equals("Enter Name"))  
        jTextField1.setText("");  
}
```

```
private void jTextField1FocusLost(java.awt.event.FocusEvent evt) {  
    // TODO add your handling code here:  
    if(jTextField1.getText().equals(""))  
        jTextField1.setText("Enter Name");  
}
```

```
private void jTextField2FocusGained(java.awt.event.FocusEvent evt) {  
    // TODO add your handling code here:  
    if(jTextField2.getText().equals("Enter SRN"))  
        jTextField2.setText("");  
}
```

```
private void jTextField2FocusLost(java.awt.event.FocusEvent evt) {  
    // TODO add your handling code here:  
    if(jTextField2.getText().equals(""))  
        jTextField2.setText("Enter SRN");  
}
```

```
private void jTextField3FocusGained(java.awt.event.FocusEvent evt) {
```

```
// TODO add your handling code here:

if(jTextField3.getText().equals("Enter Department"))
    jTextField3.setText("");
}
```

```
private void jTextField3FocusLost(java.awt.event.FocusEvent evt) {
    // TODO add your handling code here:
    if(jTextField3.getText().equals(""))
        jTextField3.setText("Enter Department");
}
```

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    setVisible(false);
    // TODO add your handling code here:
}
```

```
private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
    setVisible(false);
    new addStudent().setVisible(true);
    // TODO add your handling code here:
}
```

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    try{
        String name,srn,department;
        name = jTextField1.getText();
        srn = jTextField2.getText();
        department = jTextField3.getText();
        Connection con = ConnectionProvider.getCon();
```

```

        PreparedStatement ps = con.prepareStatement("insert into LibStudent values (?, ?, ?)");
        ps.setString(1, name);
        ps.setString(2, srn);
        ps.setString(3, department);
        ps.executeQuery();
        JOptionPane.showMessageDialog(null, "Student Added Successfully.");
        setVisible(false);
        new addStudent().setVisible(true);

    } catch (SQLException e) {
        JOptionPane.showMessageDialog(null, e);
    }
    // TODO add your handling code here:
}

```

SIGNUP JFRAME

```

private void jTextField1FocusGained(java.awt.event.FocusEvent evt) {
    // TODO add your handling code here:
    if(jTextField1.getText().equals("Enter Name"))
        jTextField1.setText("");
}

private void jTextField1FocusLost(java.awt.event.FocusEvent evt) {
    // TODO add your handling code here:
    if(jTextField1.getText().equals(""))
        jTextField1.setText("Enter Name");
}

private void jTextField2FocusGained(java.awt.event.FocusEvent evt) {
    // TODO add your handling code here:

```

```
        if(jTextField2.getText().equals("Enter Email"))
            jTextField2.setText("");
    }
```

```
private void jTextField2FocusLost(java.awt.event.FocusEvent evt) {
    // TODO add your handling code here:
    if(jTextField2.getText().equals(""))
        jTextField2.setText("Enter Email");
}
```

```
private void jTextField3FocusGained(java.awt.event.FocusEvent evt) {
    // TODO add your handling code here:
    if(jTextField3.getText().equals("Enter Contact Number"))
        jTextField3.setText("");
}
```

```
private void jTextField3FocusLost(java.awt.event.FocusEvent evt) {
    // TODO add your handling code here:
    if(jTextField3.getText().equals(""))
        jTextField3.setText("Enter Contact Number");
}
```

```
private void jPasswordField1FocusGained(java.awt.event.FocusEvent evt) {
    // TODO add your handling code here:
    if(jPasswordField1.getText().equals("*****"))
        jPasswordField1.setText("");
}
```

```
private void jPasswordField1FocusLost(java.awt.event.FocusEvent evt) {
```

```

// TODO add your handling code here:
if(jPasswordField1.getText().equals(""))
jPasswordField1.setText("*****");
}

private void jPasswordField2FocusGained(java.awt.event.FocusEvent evt) {
// TODO add your handling code here:
if(jPasswordField2.getText().equals("*****"))
jPasswordField2.setText("");
}

private void jPasswordField2FocusLost(java.awt.event.FocusEvent evt) {
// TODO add your handling code here:
if(jPasswordField2.getText().equals(""))
jPasswordField2.setText("*****");
}

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
EmailValidator ev = new EmailValidator();
Connection con = ConnectionProvider.getCon();

String name = jTextField1.getText();
String email = jTextField2.getText();
String contact = jTextField3.getText();
String password = new String (jPasswordField1.getPassword());
if(!ev.isValidEmail(email)){
JOptionPane.showMessageDialog(null,"Give proper email id.");
}
try{
PreparedStatement ps = con.prepareStatement("insert into Libusers values (?,?=?,?)");

```



```
ps.setString(1, name);
ps.setString(2, email);
ps.setString(3, contact);
ps.setString(4, password);
ps.executeQuery();
JOptionPane.showMessageDialog(null, "Account Created Successfully.");
con.close();
setVisible(false);
} catch(SQLException e){
    JOptionPane.showMessageDialog(null,e);
}
}
```

SCREENSHOTS



LOGIN

Username

Password

☐ Show Password



SIGN UP

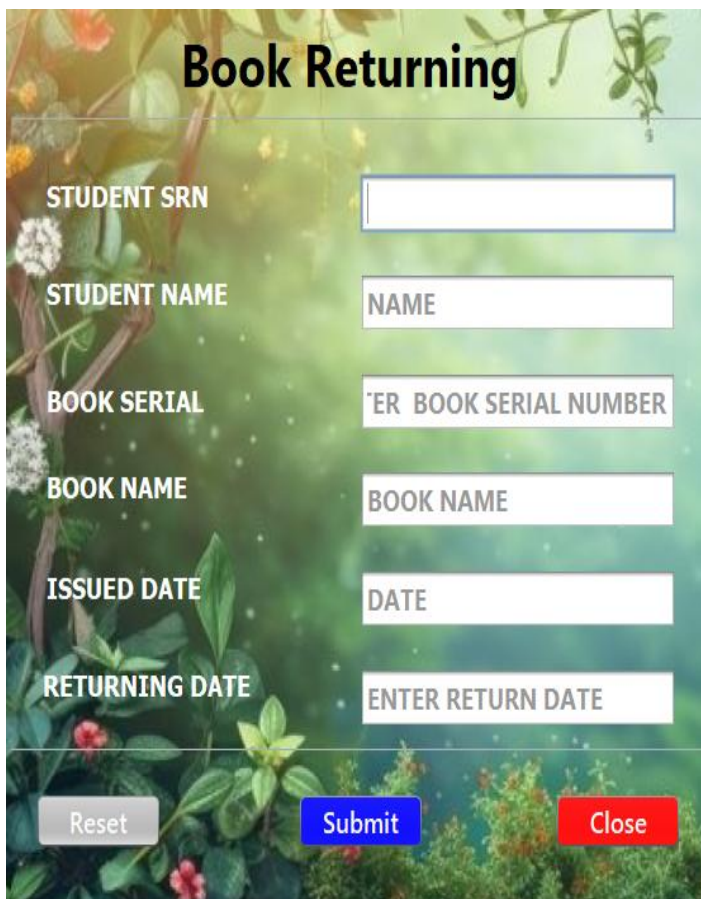
Name

Email

Contact

Password

Confirm Password



Book Returning

STUDENT SRN

STUDENT NAME

BOOK SERIAL

BOOK NAME

ISSUED DATE

RETURNING DATE



Add Book Details

SI Num

BookName

AuthorName

