



Library Management System

Presented By

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XII 'A'

Under The Guidance Of

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CERTIFICATE

This is to certify that this project work is

done by Ms/Mr.

.....

of Class XII in the Informatic Practices

Department of DRS INTERNATIONAL

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Lecturer Incharge

Dept. of Informatic Practices

Signature of External Examiner

Examiner Code:

ACKNOWLEDGEMENT

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Under his guidance, we have successfully completed this project as a practical fulfillment for the completion of the course well within the stipulated period of time.

Front End Application Software



Back End Database



AIM

The **Library Management System** is a type of information system that is designed & developed for easy and error free recording of information on various library processes. It is functional for **issuing** and **receiving** of books in the library along with the student's details. The books received in the library are entered in **Books Details** form and the new student is entered in the **Student Details** form. When the student wants to get the desired book the same is issued on the availability basis to the student. The issuance and due date for the returning of the book is also entered into the **Issue Book** form. The student has to pay the **fine**, if any, on the basis of number of days delayed deposit of the book in the library. These type of projects have proved themselves to be highly effective in way of their functioning and financially too.

Abstract

This tool requires a Relational Database Management System (RDBMS), which is used to store the information. MySQL is the preferred software for maintaining the data. It maintains the information in table form so that it can be accessed easily.

In the client side, Java NetBeans 6.5.1 is used, providing the graphical user interface. The requests of the client are made in the interface, which connect to the tables created in MySQL for getting the current information.



THE BASIC STRUCTURE AND CONTENTS OF THE TABLES

```
create database library;
```

```
use library;
```

```
create table login(username varchar(20) primary key, password varchar(20) not null);
```

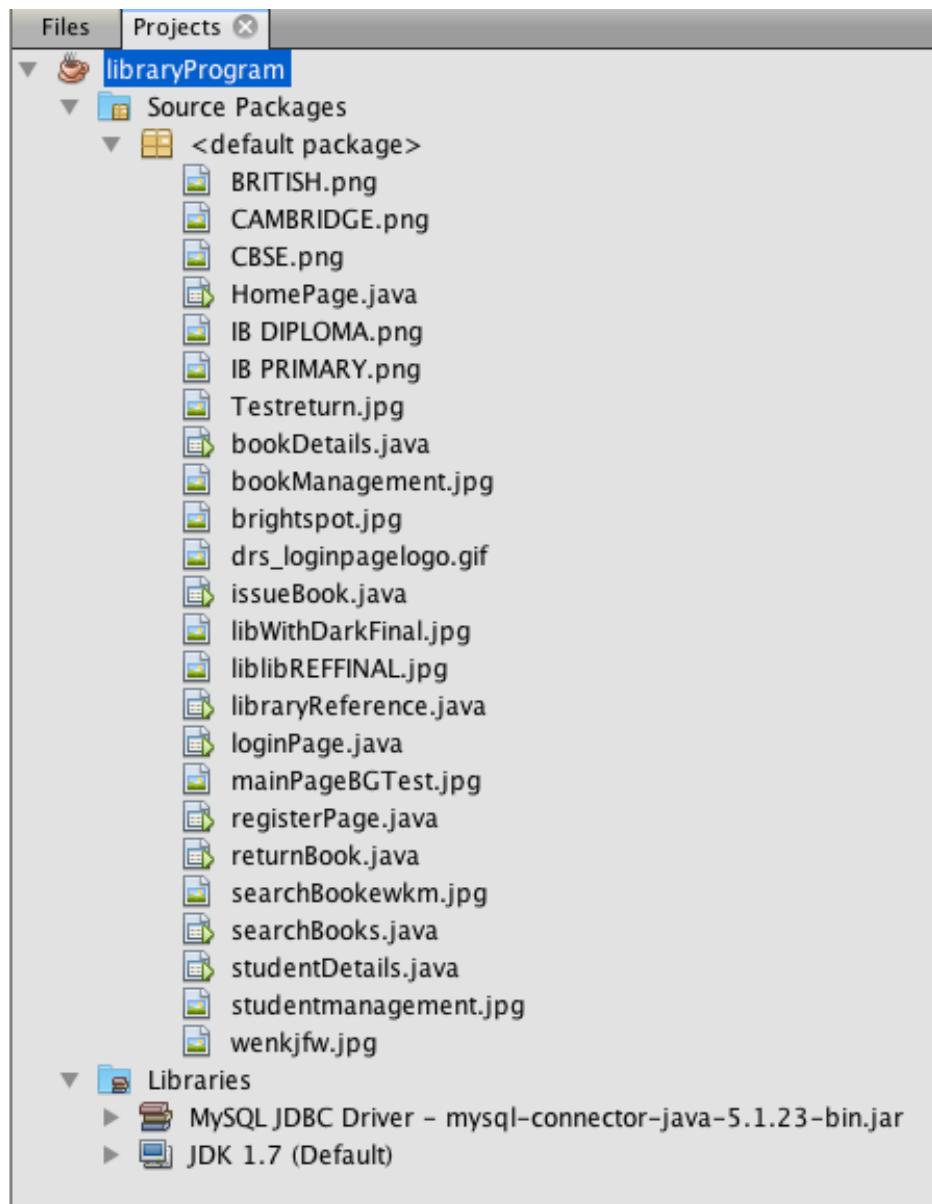
```
create table student(Student_ID char(7) primary key, Student_Name varchar(20), Class int(2), Contact_Number bigint(10) unique);
```

```
create table book(Book_ID char(7) primary key, Book_Name varchar(50), Book_Edition int(2), Author varchar(20));
```

```
create table lib_ref(Book_ID char(7) primary key, Book_Name varchar(50), Book_Edition int(2), Author varchar(20));
```

```
create table borrower(Book_ID char(7) primary key, Student_ID char(7), Borrow_Date date, Return_Date date);
```


Project Explorer



loginPage.java



Login Button

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt){  
    String s1=usernameTF.getText();  
    String s2=passwordTF.getText();  
    try {  
        Class.forName("java.sql.Driver");  
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/  
library","root","lego");  
        Statement st = con.createStatement();  
        String sql ="Select * from login WHERE username ="+s1+";";  
        ResultSet rs=st.executeQuery(sql);  
        while (rs.next()){  
            String user=rs.getString("username");  
            String pass=rs.getString("password");  
        }  
    } catch (Exception e) {  
        e.printStackTrace();  
    }  
}
```

```

        if (s1.equals(user) && s2.equals(pass)) {
            System.out.println("Login Successful");
            HomePage h= new HomePage();
            h.setVisible(true);
            this.dispose();
        } else {
            JOptionPane.showMessageDialog(null, "Username or password incorrect");
        }
        st.close();
        con.close();
    }
} catch (Exception e) {
    System.out.Println(e);
}
}

```

Clear Button

```

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    usernameTF.setText(null);
    passwordTF.setText(null);
}

```

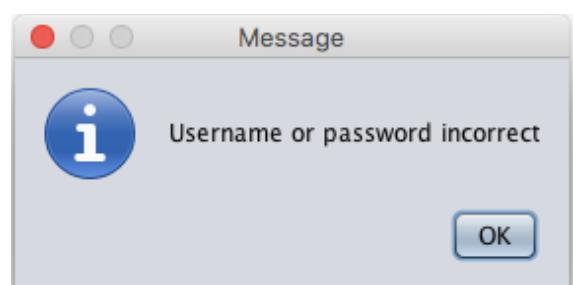
Register Button

```

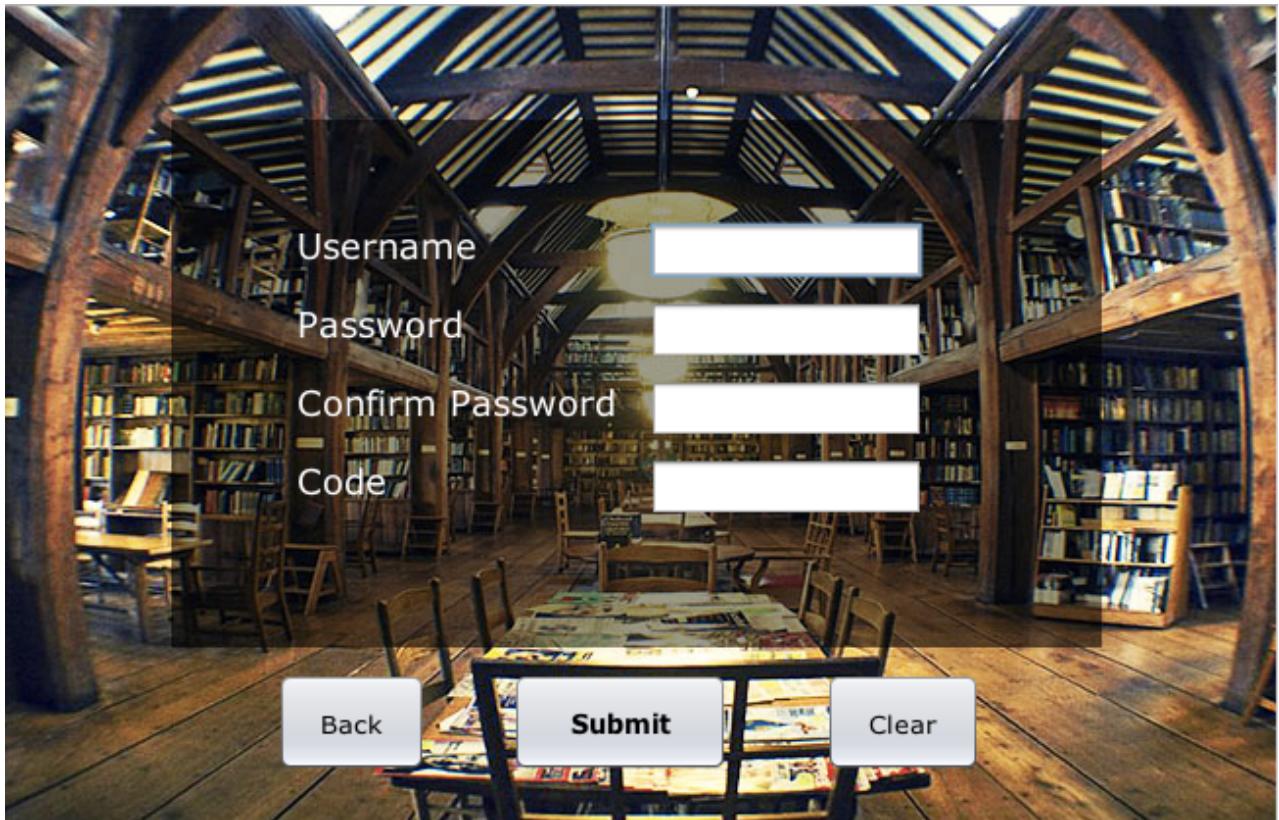
private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
    registerPage s= new registerPage();
    s.setVisible(true);
    this.dispose();
}

```

If login is unsuccessful



registerPage.java



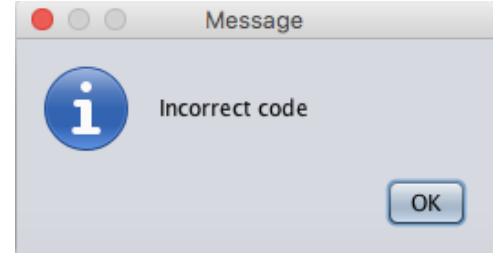
Submit Button

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {  
    String code = codeTF.getText();  
    String s1 = usernameTF.getText();  
    char c1[] = passwordTF.getPassword();  
    char c2[] = cpasswordTF.getPassword();  
    String s2 = new String(c1);  
    String s3 = new String(c2);  
    if(code.equals("drsis")) {  
        if (s2.equals(s3))  {  
            try{  
                Class.forName( "java.sql.Driver" );  
                Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/  
library","root","lego");  
                Statement st = con.createStatement();  
                String sql = "insert into login(username, password) values ('"+s1+"',  
"+s2+");";  
            }  
        }  
    }  
}
```

```

        st.executeUpdate(sql);
        JOptionPane.showMessageDialog(null, "Registration
Successful");
    } catch (Exception e) {
        System.out.println(e);
        JOptionPane.showMessageDialog(null, "Database connectivity error");
    }
} else {
    JOptionPane.showMessageDialog(null, "Password does not match");
}
} else {
    JOptionPane.showMessageDialog(null, "Incorrect code");
}
}

```



Clear Button

```

private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
    usernameTF.setText(null);
    cpasswordTF.setText(null);
    codeTF.setText(null);
}

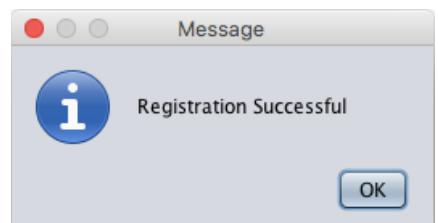
```

Back Button

```

private void
jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    loginPage s= new loginPage();
    s.setVisible(true);
    this.dispose();
}

```



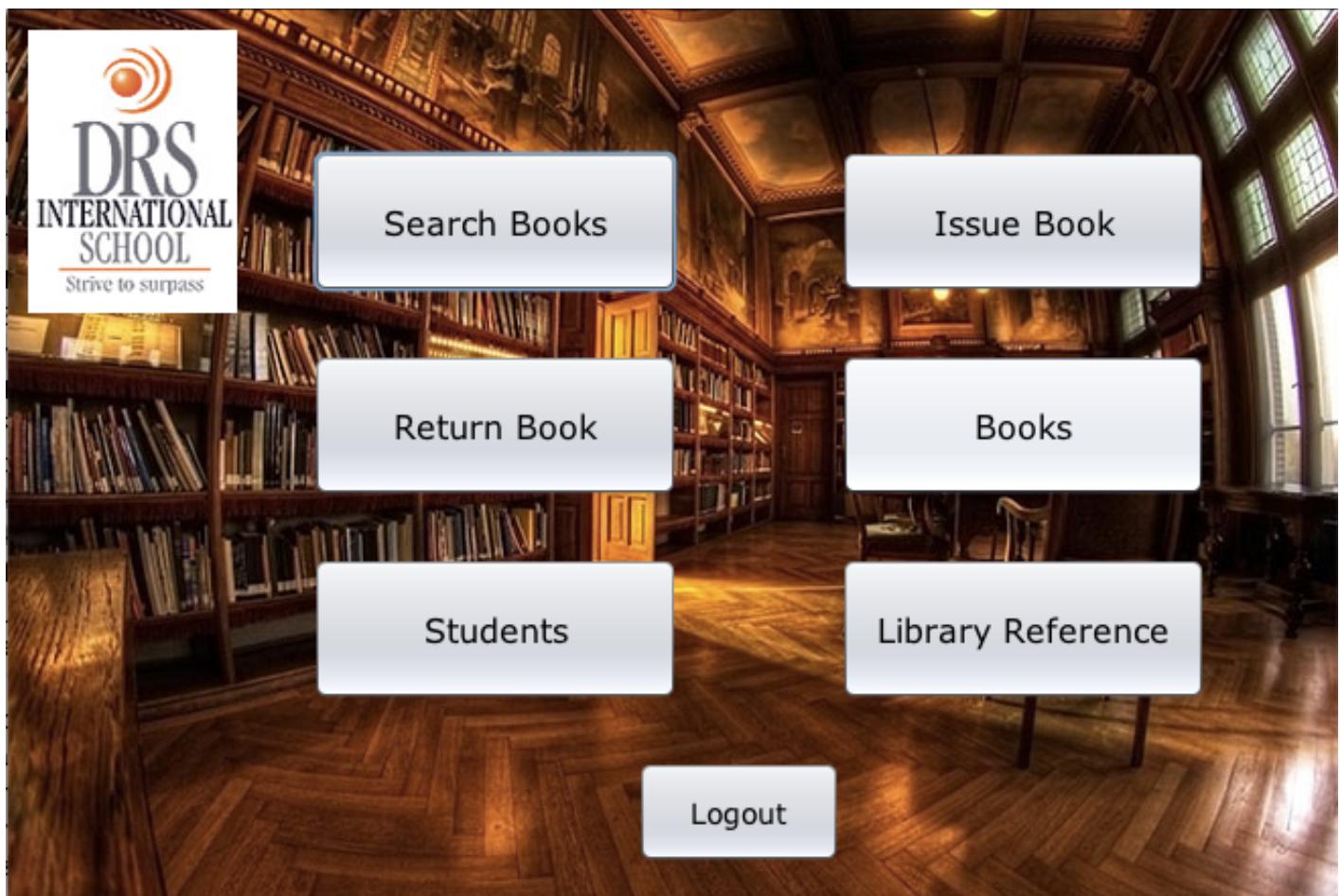
If registration is successful



If password and confirm password field do not match

If code is wrong

HomePage.java



Search Books Button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
    searchBooks s= new searchBooks();  
    s.setVisible(true);  
    this.dispose();  
}
```

```
}
```

Issue Book Button

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {  
    issueBook s= new issueBook();  
    s.setVisible(true);  
    this.dispose();  
}
```

Return Book Button

```
private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {  
    returnBook s= new returnBook();  
    s.setVisible(true);  
    this.dispose();  
}
```

Books Button

```
private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {  
    bookDetails s= new bookDetails();  
    s.setVisible(true);  
    this.dispose();  
}
```

Students Button

```
private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) {  
    studentDetails s= new studentDetails();  
    s.setVisible(true);  
    this.dispose();  
}
```

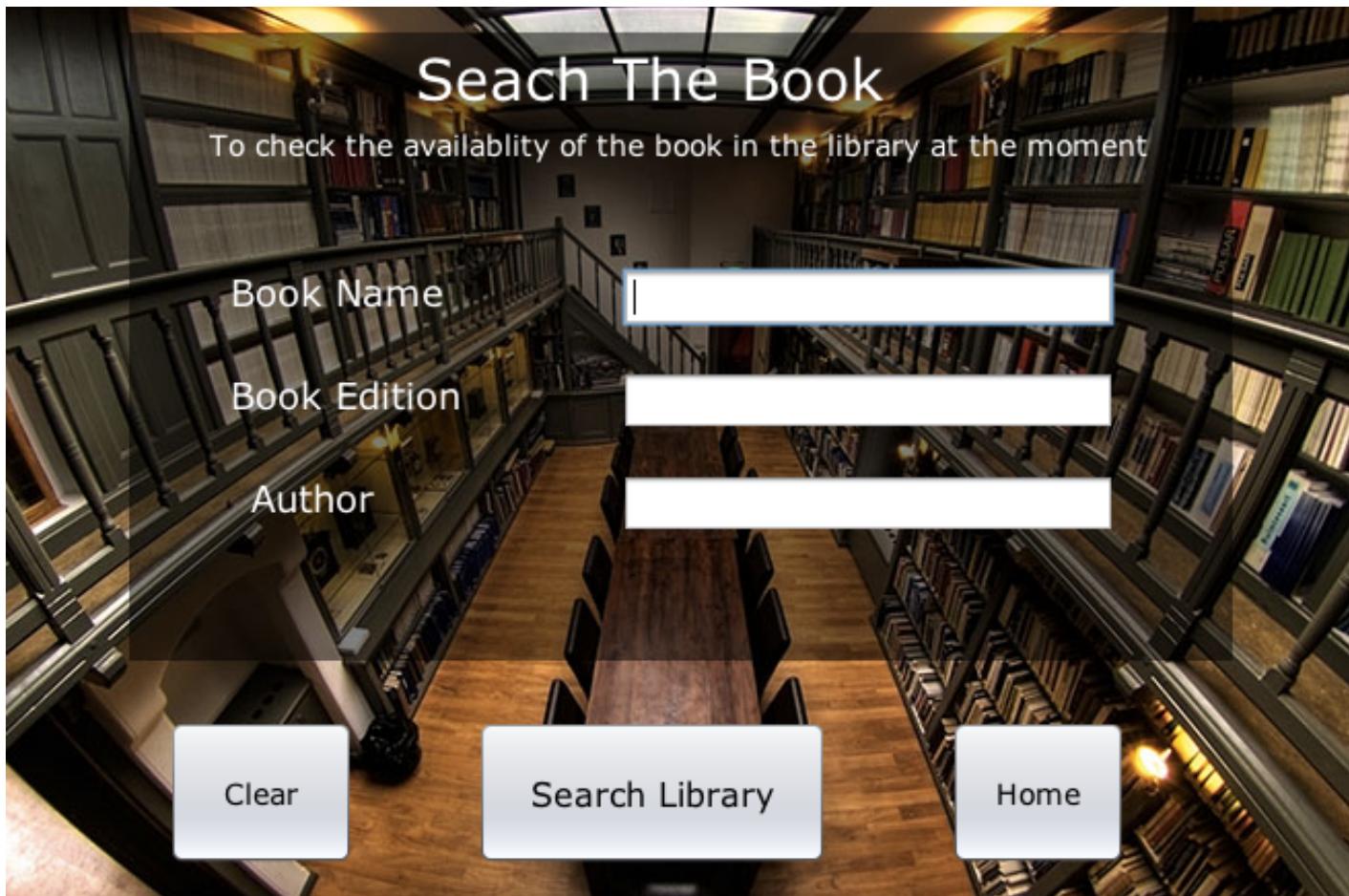
Library Reference Button

```
private void jButton6ActionPerformed(java.awt.event.ActionEvent evt) {  
    libraryReference s= new libraryReference();
```

```
s.setVisible(true);  
this.dispose();  
}
```

Logout Button

```
private void jButton7ActionPerformed(java.awt.event.ActionEvent evt) {  
    loginPage s= new loginPage();  
    s.setVisible(true);  
    this.dispose();  
}
```



searchBooks.java

Search Library Button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
    String Book_Name = book_nameTF.getText();  
    String Book_Edition = book_editionTF.getText();  
    String Author = authorTF.getText();  
    int x=0;  
    String s4=null;  
    try {  
        Class.forName("java.sql.Driver");  
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/  
library","root","lego");  
        Statement st = con.createStatement();  
        String sql = "select Book_ID from book where Book_Name = "+Book_Name+"  
and Book_Edition = "+Book_Edition+" and Author = "+Author+"";  
        ResultSet rs = st.executeQuery(sql);  
        while(rs.next()){  
            s4 = rs.getString("Book_ID");  
            x++;  
        }  
        if (x>0) {  
            JOptionPane.showMessageDialog(null, "Book available in the library. The Book ID is  
"+s4+");  
        } else {  
            JOptionPane.showMessageDialog(null, "Book is not available in the library  
currently. Check back later.");  
        }  
        st.close();  
        con.close();  
    } catch (Exception e) {  
        System.out.println(e);  
    }  
}
```

Clear Button

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
```

```

book_nameTF.setText(null);
book_editionTF.setText(null);
authorTF.setText(null);
}

```

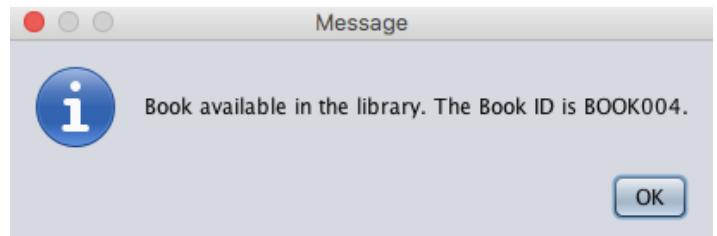
Home Button

```

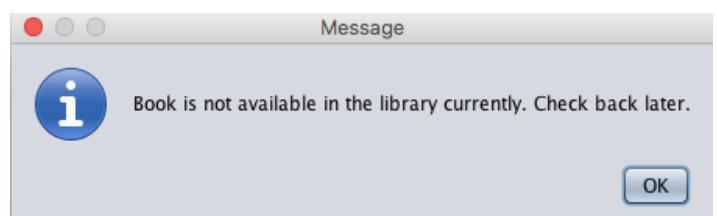
private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
    HomePage s= new HomePage();
    s.setVisible(true);
    this.dispose();
}

```

If book is available in the library



If book is not available in the library



issueBook.java

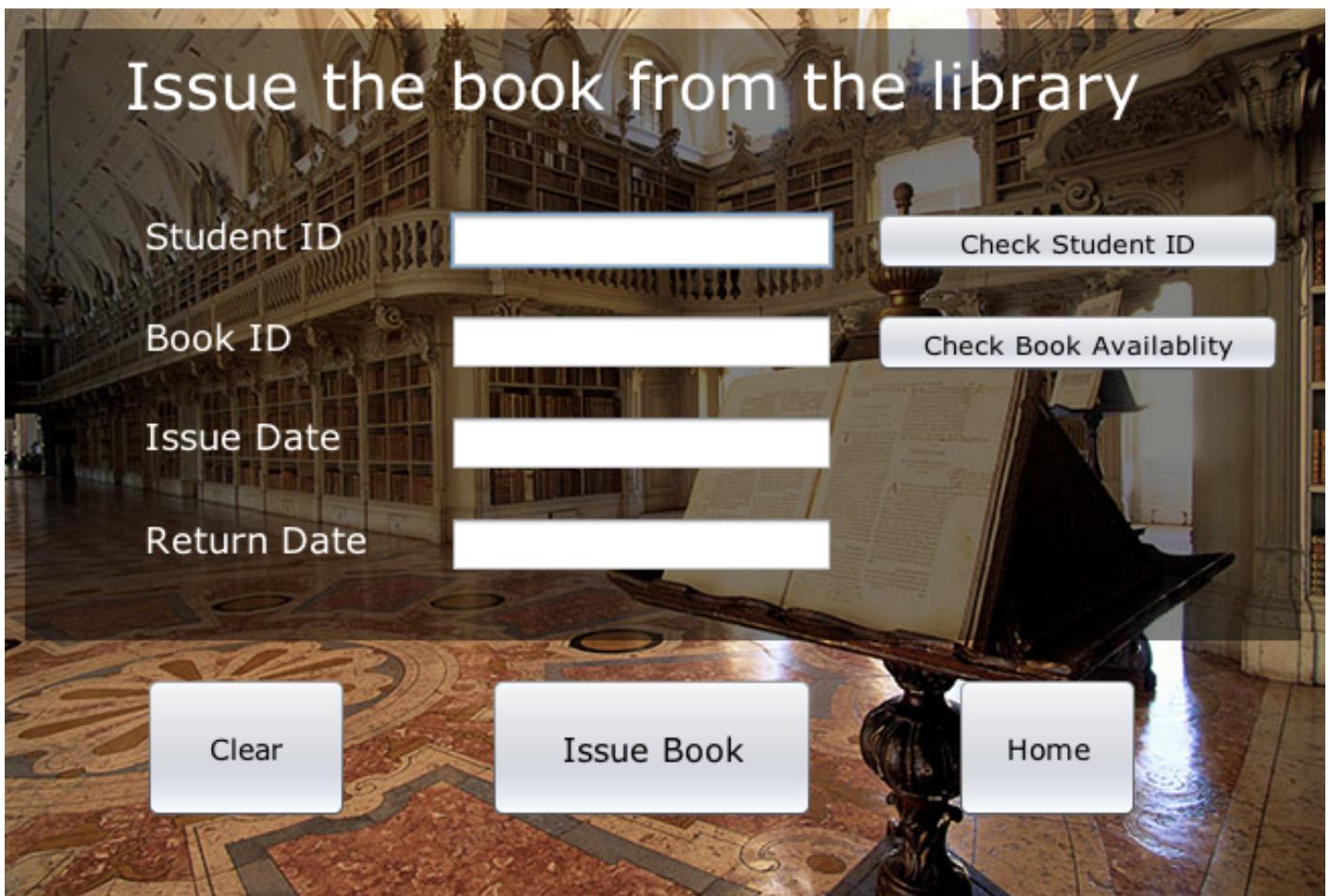
Issue Book Button

```

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    String Book_ID = book_idTF.getText();
    String Student_ID = student_idTF.getText();
    String Issue_Date = issue_dateTF.getText();
    String Return_Date = return_dateTF.getText();

    try {
        Class.forName("java.sql.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","lego");
        Statement st = con.createStatement();
    }
}

```



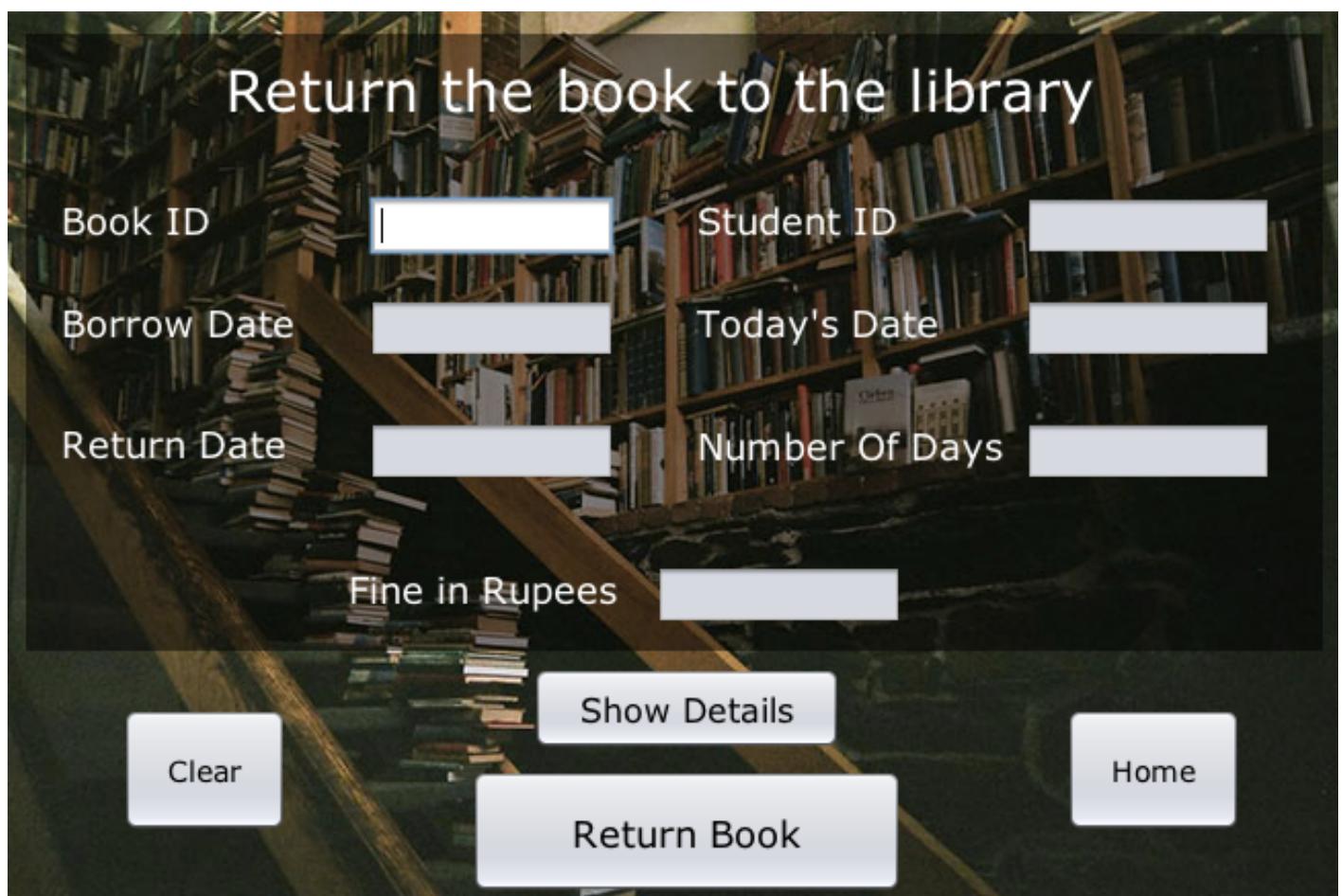
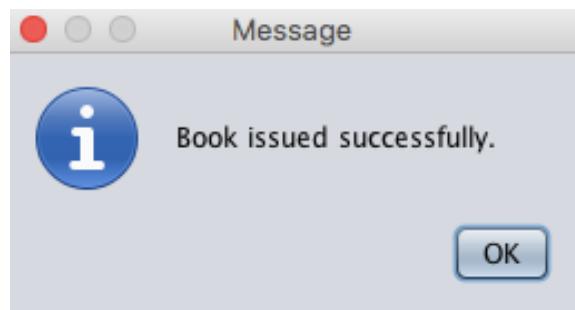
```
String sql = "insert into borrower values(" +Book_ID+ ", " +Student_ID+",
"+Issue_Date+, "+Return_Date+");";
st.executeUpdate(sql);
String sql1 = "delete from book where Book_ID=" +Book_ID+ ",";
st.executeUpdate(sql1);
JOptionPane.showMessageDialog(null, "Book issued successfully.");
} catch (Exception e) {
System.out.println(e);
JOptionPane.showMessageDialog(null, "Database connectivity error");
}
}
```

Clear Button

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
book_idTF.setText(null);
student_idTF.setText(null);
```

```
issue_dateTF.setText(null);  
return_dateTF.setText(null);  
}  
  
Home Button
```

```
private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {  
    HomePage s= new HomePage();  
    s.setVisible(true);  
    this.dispose();  
}
```



returnBook.java

Return Book Button

```
private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {  
    String Book_ID = book_idTF.getText();  
  
    try{  
        Class.forName("java.sql.Driver");  
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/  
library","root","lego");  
        Statement st = con.createStatement();  
        String sql = "delete from borrower where Book_ID = "+Book_ID+";";  
        st.executeUpdate(sql);  
        String sql1 = "insert into book select * from lib_ref where Book_ID = "+Book_ID+";";  
        st.executeUpdate(sql1);  
        JOptionPane.showMessageDialog(null, "Book returned successfully");  
    } catch (Exception e) {  
        System.out.println(e);  
        JOptionPane.showMessageDialog(null, "Database connectivity error");  
    }  
}
```

Show Details Button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
    String Book_ID = book_idTF.getText();  
    try {  
        Class.forName("java.sql.Driver");  
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/  
library","root","lego");  
        Statement st = con.createStatement();  
    }
```

```

        String sql = "select Student_ID, Borrow_Date, Return_Date from borrower
where Book_ID ="+Book_ID+";

        ResultSet rs = st.executeQuery(sql);

        while(rs.next()){
            String s1 = rs.getString("Student_ID");
            String s2 = rs.getString("Borrow_Date");
            String s3 = rs.getString("Return_Date");
            student_idTF.setText(s1+"");
            borrow_dateTF.setText(s2+"");
            return_dateTF.setText(s3+"");
        }

        st.close();
        con.close();

    } catch (Exception e) {
        JOptionPane.showMessageDialog(null, "Enter Book ID correctly");
        System.out.println(e);
    }

    try {
        Class.forName("java.sql.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","lego");

        Statement st = con.createStatement();
        String sql1 = "select CURDATE()";
        ResultSet rp = st.executeQuery(sql1);

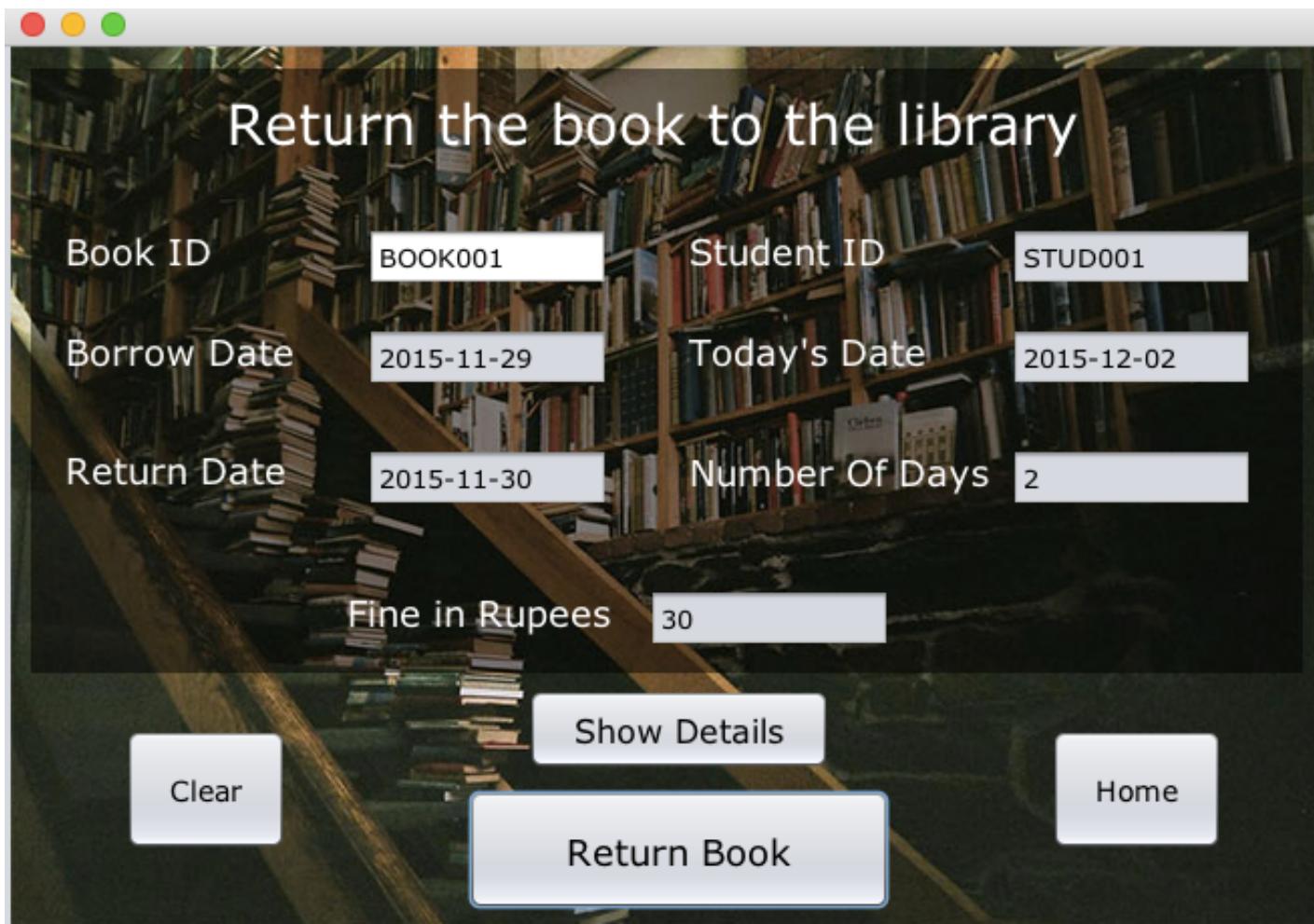
        while (rp.next()) {
            String s4 = rp.getString("CURDATE()");
            todays_dateTF.setText(s4+"");
        }

        st.close();
        con.close();

    }
} catch (Exception f) {
}

try {
    Class.forName("java.sql.Driver");
    Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","lego");

```



```
Statement st = con.createStatement();
String sql2 = "select DATEDIFF(curdate(), Return_Date) from borrower where
Book_ID = "+Book_ID+";";
ResultSet rq = st.executeQuery(sql2);
while(rq.next()) {
    String s5 = rq.getString("DATEDIFF(curdate(), Return_Date)");
    daysTF.setText(s5+"");
}

int days = Integer.parseInt(s5);
int fine = days*15;
fineTF.setText(fine+"");
}

st.close();
con.close();
} catch (Exception g) {
    System.out.println(g);
    JOptionPane.showMessageDialog(null, "Database connectivity error #2");
}
```

```
}
```

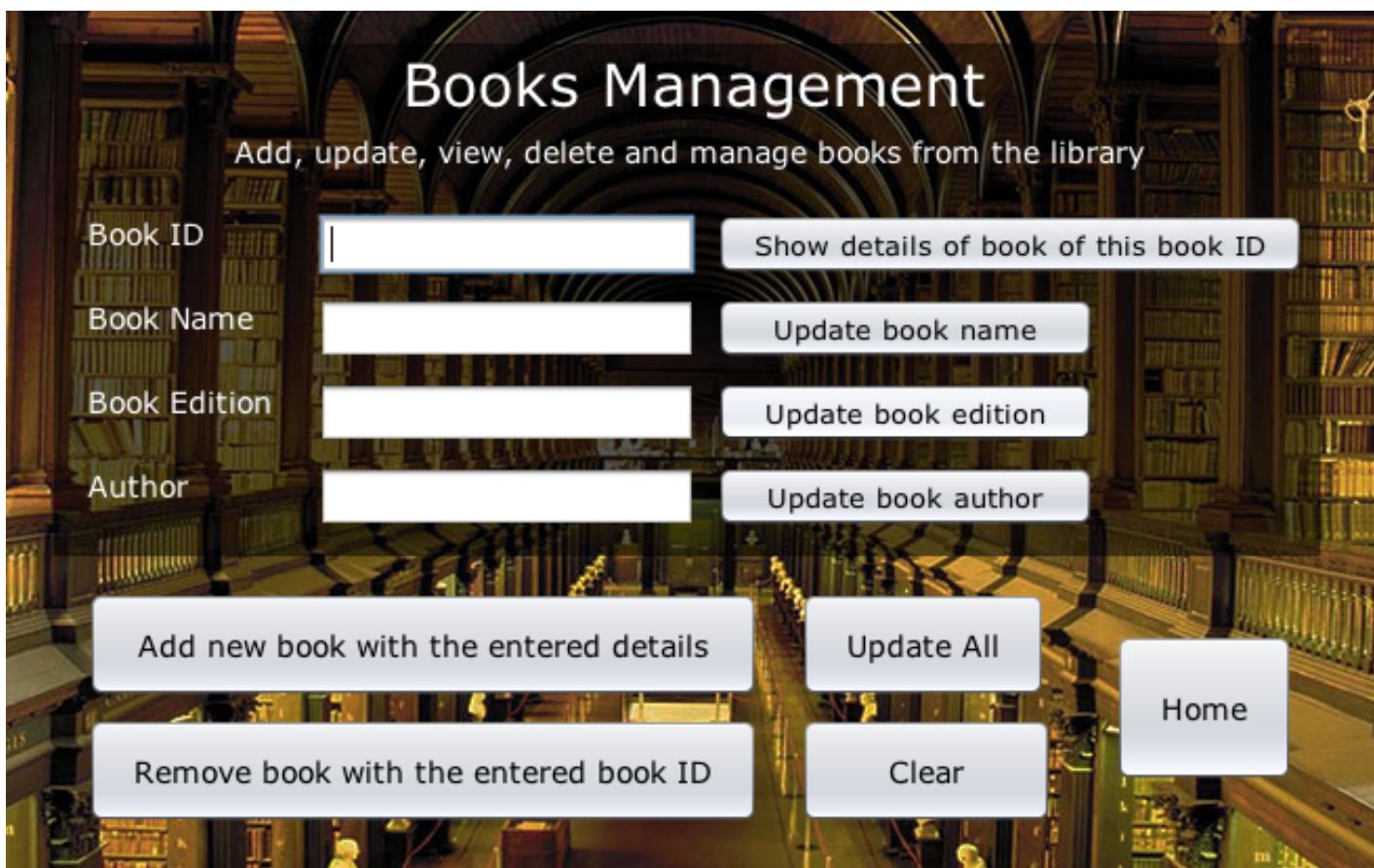
Clear Button

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {  
    book_idTF.setText(null);  
    student_idTF.setText(null);  
    borrow_dateTF.setText(null);  
    return_dateTF.setText(null);  
    todays_dateTF.setText(null);  
    daysTF.setText(null);  
    fineTF.setText(null);  
}
```

Home Button

```
private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {  
    HomePage s= new HomePage();  
    s.setVisible(true);  
    this.dispose();
```

bookDetails.java



'Show details of book of this book ID' Button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
    String Book_ID = book_idTF.getText();  
  
    try {  
        Class.forName("java.sql.Driver");
```

```

        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","lego");
        Statement st = con.createStatement();

        String sql = "select Book_Name, Book_Edition, Author from book where
Book_ID =" + Book_ID + "";
        ResultSet rs = st.executeQuery(sql);
        while(rs.next()){
            String s1 = rs.getString("Book_Name");
            String s2 = rs.getString("Book_Edition");
            String s3 = rs.getString("Author");
            book_nameTF.setText(s1+"");
            book_editionTF.setText(s2+"");
            authorTF.setText(s3+"");
        }
        st.close();
        con.close();
    } catch (Exception e) {
        JOptionPane.showMessageDialog(null, "Enter Book ID correctly");
    }
}

```

‘Update Book Name’ Button

```

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    String Book_ID = book_idTF.getText();
    String Book_Name = book_nameTF.getText();
    try{
        Class.forName("java.sql.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","lego");
        Statement st = con.createStatement();
        String sql = "update book set Book_Name = "+Book_Name+" where Book_ID =
"+Book_ID+";
        st.executeUpdate(sql);
    }
}

```

```

        String sql1 = "update lib_ref set Book_Name = "+Book_Name+" where
Book_ID = "+Book_ID+";";
        st.executeUpdate(sql1);
        JOptionPane.showMessageDialog(null, "Book name updated for "+Book_ID+".");
    } catch (Exception e) {
        System.out.println(e);
        JOptionPane.showMessageDialog(null, "Database connectivity error");
    }
}

```

‘Update Book Edition’ Button

```

private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
    String Book_ID = book_idTF.getText();
    String Book_Edition = book_editionTF.getText();
    try{
        Class.forName("java.sql.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","drs");
        Statement st = con.createStatement();
        String sql = "update book set Book_Edition = "+Book_Edition+" where Book_ID
= "+Book_ID+";";
        st.executeUpdate(sql);
        String sql1 = "update lib_ref set Book_Edition = "+Book_Edition+" where
Book_ID = "+Book_ID+";";
        st.executeUpdate(sql1);
        JOptionPane.showMessageDialog(null, "Book Edition updated for "+Book_ID+".");
    } catch (Exception e) {
        System.out.println(e);
        JOptionPane.showMessageDialog(null, "Database connectivity error");
    }
}

```

‘Update Book Author’ Button

```

private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {
    String Book_ID = book_idTF.getText();

```

```

String Author = authorTF.getText();
try{
    Class.forName("java.sql.Driver");
    Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","drs");
    Statement st = con.createStatement();
    String sql = "update book set Author = "+Author+" where Book_ID =
"+Book_ID+";
    st.executeUpdate(sql);
    String sql1 = "update lib_ref set Author = "+Author+" where Book_ID =
"+Book_ID+";
    st.executeUpdate(sql1);
    JOptionPane.showMessageDialog(null, "Author name updated for "+Book_ID+.");
} catch (Exception e) {
    System.out.println(e);
    JOptionPane.showMessageDialog(null, "Database connectivity error");
}
}

```

‘Add new book with the entered details’ Button

```

private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) {
    String Book_ID = book_idTF.getText();
    String Book_Name = book_nameTF.getText();
    String Book_Edition = book_editionTF.getText();
    String Author = authorTF.getText();
    try {
        Class.forName("java.sql.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","lego");
        Statement st = con.createStatement();
        String sql = "insert into book values ("+Book_ID+", "+Book_Name+",
"+Book_Edition+", "+Author+"),";
        st.executeUpdate(sql);
        String sql1 = "insert into lib_ref values ("+Book_ID+", "+Book_Name+",
"+Book_Edition+", "+Author+"),";
    }
}

```

```

        st.executeUpdate(sql1);

    JOptionPane.showMessageDialog(null, "Inserted a new book record successfully");

} catch (Exception e) {
    System.out.println(e);
    JOptionPane.showMessageDialog(null, "Database connectivity error");
}

}
}

```

‘Remove book with the entered book ID’ Button

```

private void jButton7ActionPerformed(java.awt.event.ActionEvent evt) {

    String Book_ID = book_idTF.getText();

    try{
        Class.forName("java.sql.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","drs");

        Statement st = con.createStatement();
        String sql = "delete from book where Book_ID = "+Book_ID+";";
        st.executeUpdate(sql);

        String sql1 = "delete from lib_ref where Book_ID = "+Book_ID+";";
        st.executeUpdate(sql1);

        JOptionPane.showMessageDialog(null, "Book deleted from library records");

        book_idTF.setText(null);
        book_nameTF.setText(null);
        book_editionTF.setText(null);
        authorTF.setText(null);

    } catch (Exception e) {
        System.out.println(e);
        JOptionPane.showMessageDialog(null, "Database connectivity error");
    }
}

```

‘Update All’ Button

```

private void jButton6ActionPerformed(java.awt.event.ActionEvent evt) {

    String Book_ID = book_idTF.getText();

```

```

String Book_Name = book_nameTF.getText();
String Book_Edition = book_editionTF.getText();
String Author = authorTF.getText();

try{
    Class.forName("java.sql.Driver");
    Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","drs");

    Statement st = con.createStatement();
    String sql = "update book set Book_Name = "+Book_Name+" , Book_Edition =
"+Book_Edition+" and Author = "+Author+" where Book_ID = "+Book_ID+";";
    st.executeUpdate(sql);

    String sql1 = "update lib_ref set Book_Name = "+Book_Name+" , Book_Edition =
"+Book_Edition+" and Author = "+Author+" where Book_ID = "+Book_ID+";";
    st.executeUpdate(sql1);

    JOptionPane.showMessageDialog(null, "All information updated for "+Book_ID+ ".");
} catch (Exception e) {
    System.out.println(e);
    JOptionPane.showMessageDialog(null, "Database connectivity error");
}
}

```

Clear Button

```

private void jButton8ActionPerformed(java.awt.event.ActionEvent evt) {
    book_idTF.setText(null);
    book_nameTF.setText(null);
    book_editionTF.setText(null);
    authorTF.setText(null);
}

```

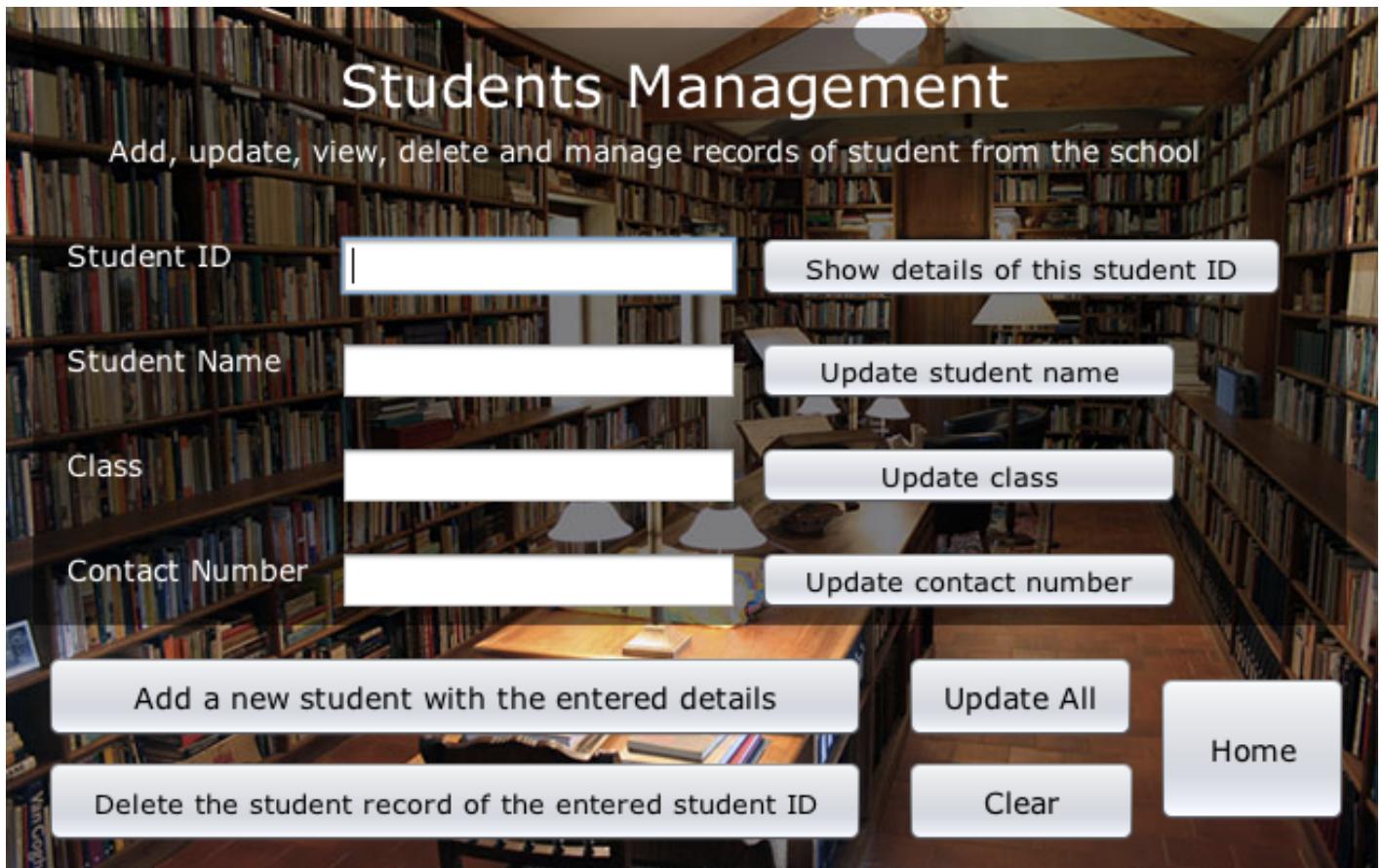
Home Button

```

private void jButton9ActionPerformed(java.awt.event.ActionEvent evt) {
    HomePage s= new HomePage();
    s.setVisible(true);
    this.dispose();
}

```

studentDetails.java



'Show details of this student ID' Button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
    String Student_ID = student_idTF.getText();  
    try {  
        Class.forName("java.sql.Driver");  
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/  
library","root","lego");  
        Statement st = con.createStatement();  
        String sql = "select Student_Name, Class, Contact_Number from student  
where Student_ID ="+Student_ID+";";  
    }  
}
```

```

        ResultSet rs = st.executeQuery(sql);
        while(rs.next()){
            String s1 = rs.getString("Student_Name");
            String s2 = rs.getString("Class");
            String s4 = rs.getString("Contact_Number");
            student_nameTF.setText(s1+"");
            classTF.setText(s2+"");
            contact_numberTF.setText(s4+"");
        }
        st.close();
        con.close();
    } catch (Exception e) {
        JOptionPane.showMessageDialog(null, "Enter Student ID correctly");
    }
}

```

‘Update student name’ Button

```

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    String Student_ID = student_idTF.getText();
    String Student_Name = student_nameTF.getText();
    try{
        Class.forName("java.sql.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","lego");
        Statement st = con.createStatement();
        String sql = "update student set student_Name = "+Student_Name+" where
student_ID = "+Student_ID+";
        st.executeUpdate(sql);
        JOptionPane.showMessageDialog(null, "Student name updated for
"+Student_ID+".");
    } catch (Exception e) {
        System.out.println(e);
        JOptionPane.showMessageDialog(null, "Database connectivity error");
    }
}

```

‘Update class’ Button

```
private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {  
    String Student_ID = student_idTF.getText();  
    String StudentClass = classTF.getText();  
    try{  
        Class.forName("java.sql.Driver");  
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/  
library","root","lego");  
        Statement st = con.createStatement();  
        String sql = "update student set Class = "+StudentClass+" where student_ID  
= "+Student_ID+";";  
        st.executeUpdate(sql);  
        JOptionPane.showMessageDialog(null, "Class name updated for "+Student_ID+".");  
    } catch (Exception e) {  
        System.out.println(e);  
        JOptionPane.showMessageDialog(null, "Database connectivity error");  
    }  
}
```

‘Update contact number’ Button

```
private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) {  
    String Student_ID = student_idTF.getText();  
    String Contact_Number= contact_numberTF.getText();  
    try{  
        Class.forName("java.sql.Driver");  
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/  
library","root","lego");  
        Statement st = con.createStatement();  
        String sql = "update student set Contact_Number = "+Contact_Number+" where  
student_ID = "+Student_ID+";";  
        st.executeUpdate(sql);  
        JOptionPane.showMessageDialog(null, "Contact Number updated for "+Student_ID  
+".");  
    }
```

```

        } catch (Exception e) {
            System.out.println(e);
            JOptionPane.showMessageDialog(null, "Database connectivity error");
        }
    }
}

```

'Add a new student with the entered details' Button

```

private void jButton6ActionPerformed(java.awt.event.ActionEvent evt) {
    String Student_ID = student_idTF.getText();
    String Student_Name = student_nameTF.getText();
    String StudentClass = classTF.getText();
    String Contact_Number = contact_numberTF.getText();
    try{
        Class.forName("java.sql.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","lego");
        Statement st = con.createStatement();
        String sql = "insert into student values ('"+Student_ID+"', '"+Student_Name+"', '"+StudentClass+"', '"+Contact_Number+"');";
        st.executeUpdate(sql);
        JOptionPane.showMessageDialog(null, "Inserted new student record successfully");
    } catch (Exception e) {
        System.out.println(e);
        JOptionPane.showMessageDialog(null, "Database connectivity error");
    }
}

```

'Delete the student record of the entered student ID' Button

```

private void jButton7ActionPerformed(java.awt.event.ActionEvent evt) {
    String Student_ID = student_idTF.getText();
    try{
        Class.forName("java.sql.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","lego");
        Statement st = con.createStatement();
        String sql = "delete from student where Student_ID = '"+Student_ID+"'";

```

```

        st.executeUpdate(sql);
        JOptionPane.showMessageDialog(null, "Student deleted from library records");
        student_idTF.setText(null);
        student_nameTF.setText(null);
        classTF.setText(null);
        contact_numberTF.setText(null);
    } catch (Exception e) {
        System.out.println(e);
        JOptionPane.showMessageDialog(null, "Database connectivity error");
    }
}

```

‘Update All’ Button

```

private void jButton8ActionPerformed(java.awt.event.ActionEvent evt) {
    String Student_ID = student_idTF.getText();
    String Student_Name = student_nameTF.getText();
    String StudentClass = classTF.getText();
    String Contact_Number = contact_numberTF.getText();

    try{
        Class.forName("java.sql.Driver");
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","lego");
        Statement st = con.createStatement();
        String sql = "update student set Student_Name='"+Student_Name+"',
        Class = "+StudentClass+" and Contact_Number='"+Contact_Number+"' where
        Student_ID='"+Student_ID+"'";
        st.executeUpdate(sql);
        JOptionPane.showMessageDialog(null, "All information updated for "+Student_ID+"");
    } catch (Exception e) {
        System.out.println(e);
        JOptionPane.showMessageDialog(null, "Database connectivity error");
    }
}

```

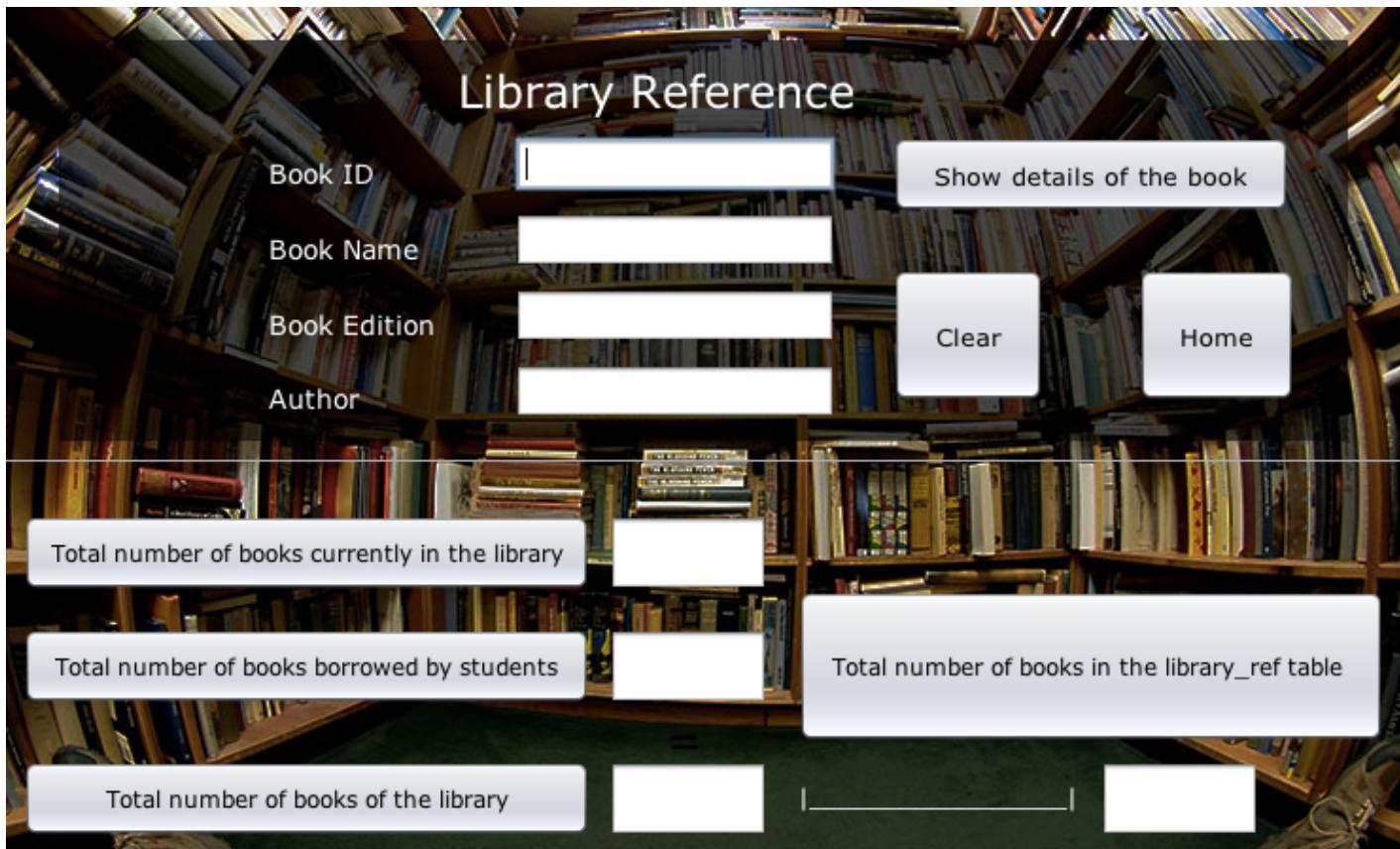
Clear Button

```
private void jButton9ActionPerformed(java.awt.event.ActionEvent evt) {  
    student_idTF.setText(null);  
    student_nameTF.setText(null);  
    classTF.setText(null);  
    contact_numberTF.setText(null);  
}  
}
```

Home Button

```
private void jButton10ActionPerformed(java.awt.event.ActionEvent evt) {  
    HomePage s= new HomePage();  
    s.setVisible(true);  
    this.dispose();  
}  
}
```

libraryReference.java



‘Show details of the book’ Button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
    String Book_ID = book_idTF.getText();  
    try {  
        Class.forName("java.sql.Driver");  
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/  
library","root","lego");  
        Statement st = con.createStatement();  
        String sql = "select Book_Name, Book_Edition, Author from lib_ref where  
Book_ID ="+Book_ID+";";  
        ResultSet rs = st.executeQuery(sql);  
        while(rs.next()){  
            String s1 = rs.getString("Book_Name");  
            String s2 = rs.getString("Book_Edition");  
            String s3 = rs.getString("Author");  
            book_nameTF.setText(s1+"");  
            book_editionTF.setText(s2+"");  
            authorTF.setText(s3+"");  
        }  
        st.close();  
        con.close();  
    } catch (Exception e) {  
        JOptionPane.showMessageDialog(null, "Enter Book ID correctly");  
    }  
}
```

Clear Button

```
private void jButton6ActionPerformed(java.awt.event.ActionEvent evt) {  
    book_idTF.setText(null);  
    book_nameTF.setText(null);  
    book_editionTF.setText(null);  
    authorTF.setText(null);  
}
```

Home Button

```
private void jButton7ActionPerformed(java.awt.event.ActionEvent evt) {  
    HomePage s= new HomePage();  
    s.setVisible(true);  
    this.dispose();  
}
```

‘Total number of books currently in the library’ Button

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {  
    try {  
        Class.forName("java.sql.Driver");  
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/  
library","root","lego");  
        Statement st = con.createStatement();  
        String sql = "select count(Book_ID) from book;";  
        ResultSet rs = st.executeQuery(sql);  
        while(rs.next()){  
            String s1 = rs.getString("Count(Book_ID)");  
            booksTF.setText(s1+ "");  
        }  
        st.close();  
        con.close();  
    } catch (Exception e) {  
        JOptionPane.showMessageDialog(null, "Database error");  
    }  
}
```

‘Total number of books borrowed by student’ Button

```
private void jButton8ActionPerformed(java.awt.event.ActionEvent evt) {  
  
    try {  
        Class.forName("java.sql.Driver");  
        Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/  
library","root","lego");  
        Statement st = con.createStatement();  
    }
```

```

String sql = "select count(Book_ID) from borrower;";
ResultSet rs = st.executeQuery(sql);
while(rs.next()){
    String s1 = rs.getString("Count(Book_ID)");
    borrowerTF.setText(s1+"");
}
st.close();
con.close();
} catch (Exception e) {
JOptionPane.showMessageDialog(null, "Database error");
}
}

```

‘Total number of books of the library’ Button

```

private void jButton9ActionPerformed(java.awt.event.ActionEvent evt) {
    int lib = Integer.parseInt(booksTF.getText()) +
Integer.parseInt(borrowerTF.getText());
    libTF.setText(lib+"");
}

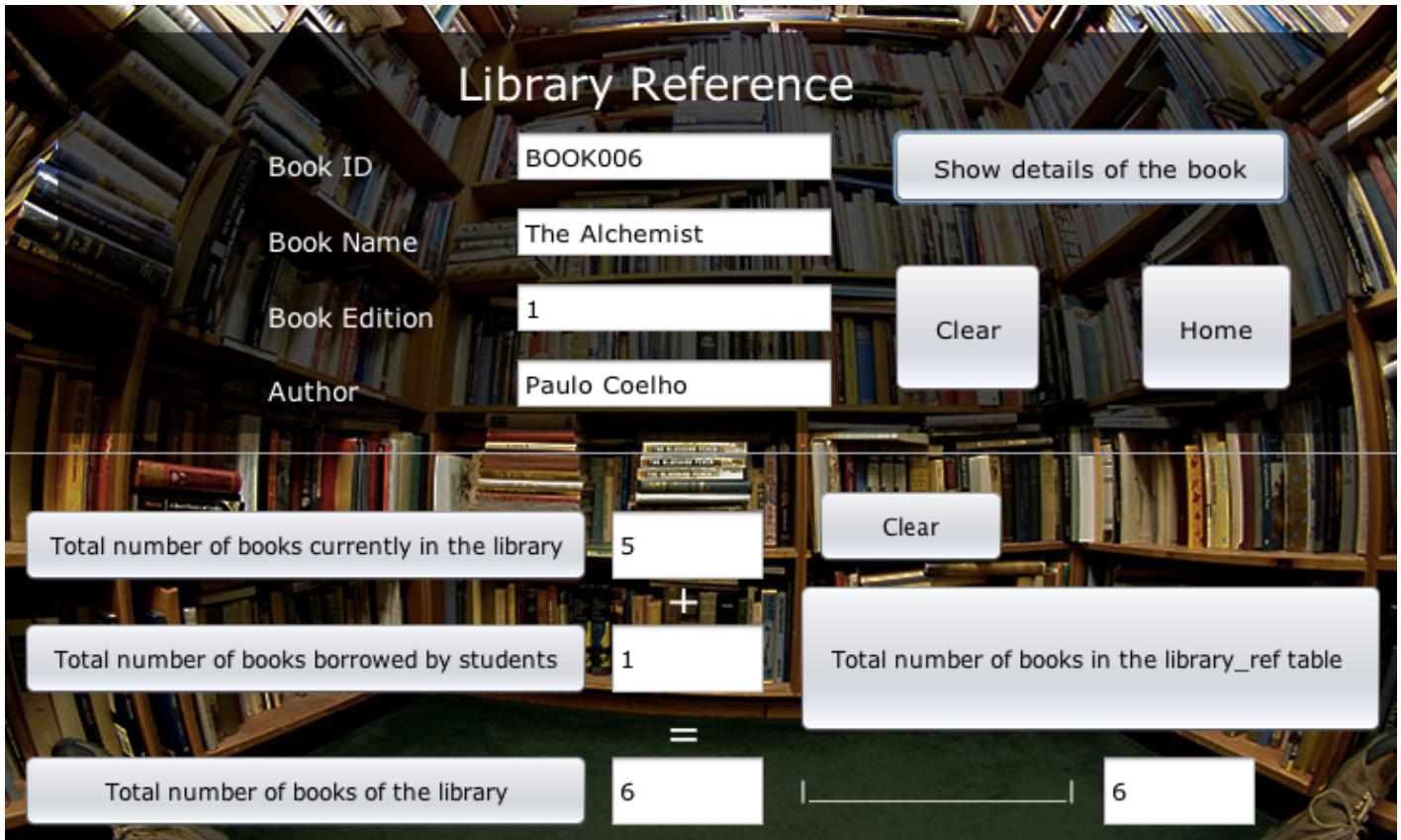
```

‘Total number of books in the lib_ref table’ Button

```

private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) {
try {
    Class.forName("java.sql.Driver");
    Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/
library","root","lego");
    Statement st = con.createStatement();
    String sql = "select count(Book_ID) from lib_ref;";
    ResultSet rs = st.executeQuery(sql);
    while(rs.next()){
        String s1 = rs.getString("Count(Book_ID)");
        librefTF.setText(s1+"");
    }
    st.close();
    con.close();
} catch (Exception e) {
}

```



```
JOptionPane.showMessageDialog(null, "Database error");  
    }  
}
```

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