

PROJECT REPORT

ON

LIBRARY

MANAGEMENT

SYSTEM

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INTRODUCTION AND OBJECTIVES

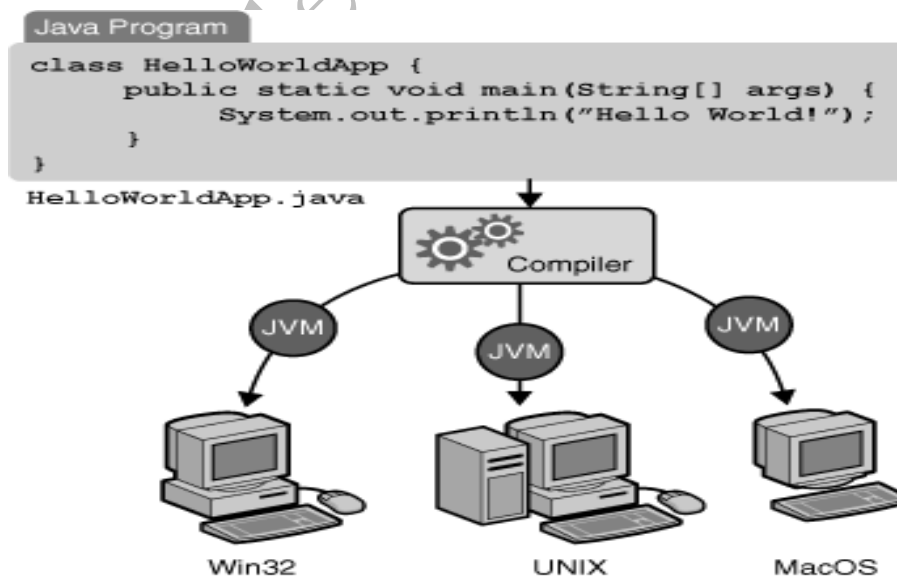
The Project titled Library Management System is a database connectivity application that uses front end as java and back end as MySql.

The application is created using NetBeans IDE as NetBeans IDE is the official IDE for Java 8. With its editors, code analyzers, and converters, you can quickly and smoothly upgrade your applications to use new Java 8 language constructs, such as lambdas, functional operations, and method references. Batch analyzers and converters are provided to search through multiple applications at the same time, matching patterns for conversion to new Java 8 language constructs. With its constantly improving Java Editor, many rich features and an extensive range of tools, templates and samples, NetBeans IDE sets the standard for developing with cutting edge technologies out of the box.

OVERVIEW OF JAVA

Java was conceived by James Gosling, Patrick Naughton, Chris Warth, Ed Frank, and Mike Sheridan at Sun Microsystems, Inc. in 1991. This language was initially called “Oak” but was renamed “Java” in 1995.

In the Java programming language, all source code is first written in plain text files ending with the .java extension. Those source files are then compiled into .class files by the javac compiler. A .class file does not contain code that is native to your processor; it instead contains *bytecodes* — the machine language of the Java Virtual Machine¹ (Java VM). The java launcher tool then runs your application with an instance of the Java Virtual Machine.



An overview of the software development process.

OVERVIEW OF MYSQL

MySQL is a fast, easy-to-use RDBMS used for small and big business applications. MySQL was originally developed, marketed, and supported by a Swedish Company MySQL AB. Now a days Oracle Corporation is the developer of MySQL. MySQL is released under an open-source license so it is customizable. It requires no payment for its usage.

- MySQL is a very powerful software to handle RDBMS.
- MySQL uses a standard form of the well-known ANSI-SQL standards.
- MySQL is a platform independent application which works on many operating systems like Windows, UNIX, LINUX etc. And has compatibility with many languages including JAVA , C++, PHP, PERL, etc.
- MySQL is a easy to install RDBMS and capable of handling large data sets.

Details of tables used in the project

```
C:\Program Files\MySQL\MySQL Server 5.1\bin\mysql.exe
Enter password: ***
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 3
Server version: 5.1.33-community MySQL Community Server (GPL)

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.
```

```
mysql> create database library;
Query OK, 1 row affected (0.06 sec)
```

```
mysql> use library;
Database changed
```

```
mysql> create table book
-> (
->     book_id int(5) primary key,
->     title varchar(25),
->     author varchar(15),
->     publisher varchar(20),
->     category varchar(12),
->     price int(4),
->     edition int(4)
-> );
Query OK, 0 rows affected (0.43 sec)
```

```
mysql>
mysql>
mysql> create table member
-> (
->     member_id int(5) primary key,
->     member_name varchar(10),
->     address varchar(25),
->     phone int(13),
->     membership varchar(10),
->     gender char(6)
-> );
Query OK, 0 rows affected (0.08 sec)
```

```
mysql>
mysql> create table transaction
-> (
->     book_id int(5),
->     member_id int(5),
->     issue_date date,
->     return_date date,
->     fine int(3),
->     rating varchar(15)
-> );
Query OK, 0 rows affected (0.06 sec)

mysql>
```

Table Book

Create Table Book

```
(  
  Book_Id  Int(5)           Primary Key,  
  Title    Varchar(25),  
  Author   Varchar(15),  
  Publisher Varchar(20),  
  Category Varchar(13),  
  Price    Int(4),  
  Edition   Int(4)  
);
```

Table Member

Create Table Member

```
(  
  Member_Id      Int(5)           Primary Key,  
  Member_Name    Varchar(20),  
  Address         Varchar(30),  
  Membership     Varchar(10),  
  Gender         Char(10)  
);
```

Table Transaction

Create Table Transaction

```
(  
  Book_Id      Int(5),  
  Member_Id    Int(5),  
  Issue_Date   Date,  
  Return_Date  Date,  
  Fine         Int(4),  
  Book_Rating  Varchar(20)  
);
```

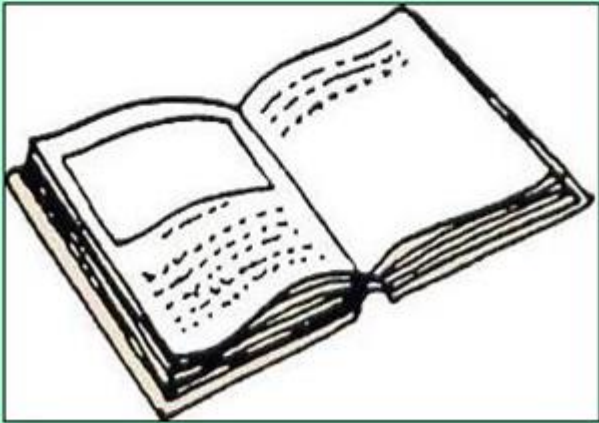
Login Form

Login

LOGIN FORM

USER_ID

PASSWORD



Import the following :-

```
import javax.swing.JOptionPane;
```

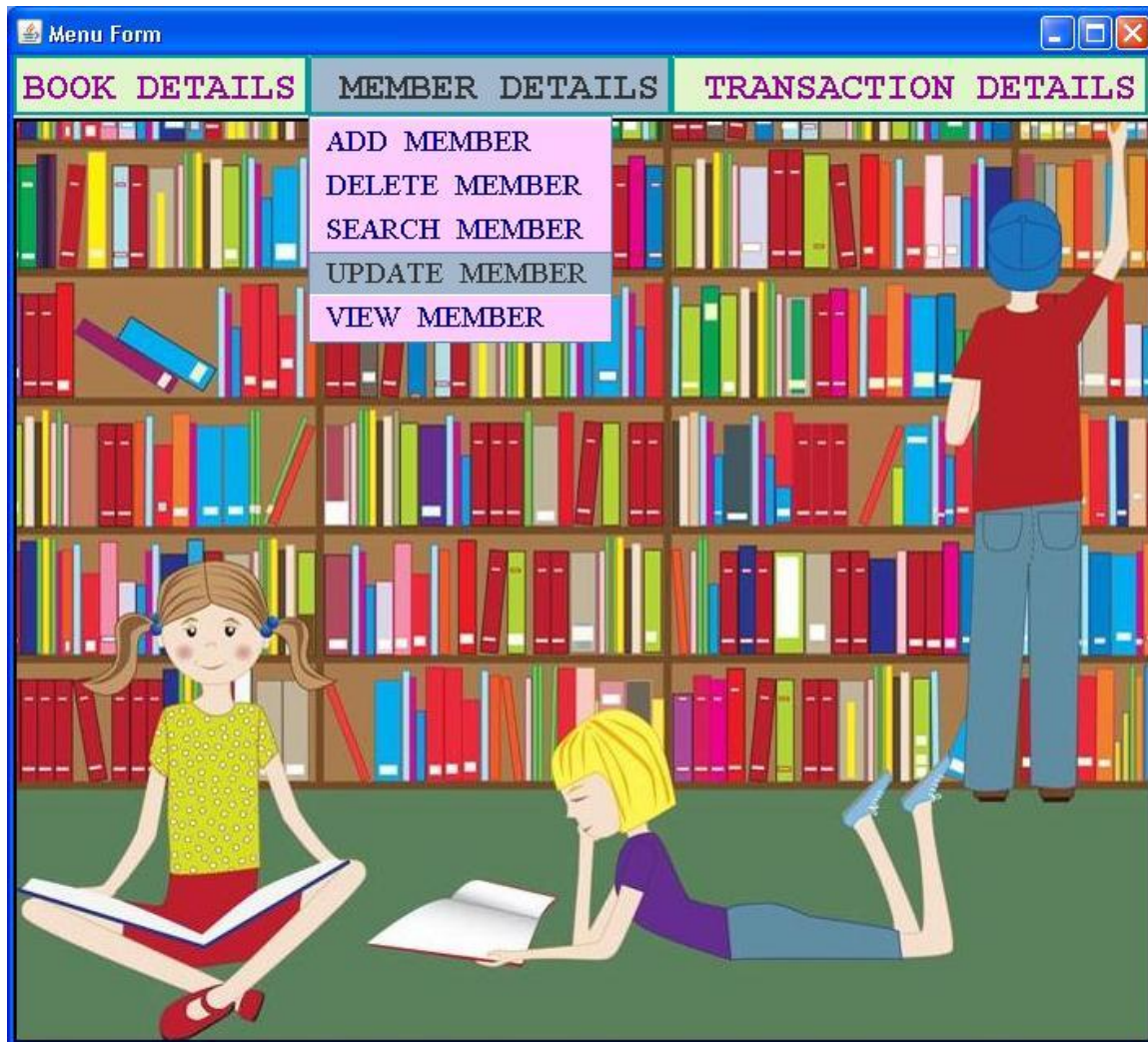
Code on Login button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
    String p=new String(pwf1.getPassword());  
    if(p.equals("root"))  
    {  
        new MenuForm().setVisible(true);  
        this.setVisible(false);  
    }  
    else  
    {  
        new MenuForm().setVisible(false);  
        this.setVisible(true);  
        JOptionPane.showMessageDialog(null,"Password Entered Is Incorrect");  
    }  
}
```

Code on Cancel button

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {  
    System.exit(0);  
}
```


Menu Form



Code on Add Book Menu Item

```
private void jMenuItem1ActionPerformed(java.awt.event.ActionEvent evt) {  
    new AddBook().setVisible(true);  
}
```

Code on Delete Book Menu Item

```
private void jMenuItem2ActionPerformed(java.awt.event.ActionEvent evt) {  
    new DeleteBook().setVisible(true);  
}
```

Code on Search Book Menu Item

```
private void jMenuItem3ActionPerformed(java.awt.event.ActionEvent evt) {  
    new SearchBook().setVisible(true);  
}
```

Code on Update Book Menu Item

```
private void jMenuItem4ActionPerformed(java.awt.event.ActionEvent evt) {  
    new UpdateBook().setVisible(true);  
}
```

Code on View Book Menu Item

```
private void jMenuItem5ActionPerformed(java.awt.event.ActionEvent evt) {  
    new ViewBook().setVisible(true);  
}
```

Code on Add Member Menu Item

```
private void jMenuItem6ActionPerformed(java.awt.event.ActionEvent evt) {  
    new AddMember().setVisible(true);  
}
```

Code on Delete Member Menu Item

```
private void jMenuItem7ActionPerformed(java.awt.event.ActionEvent evt) {  
    new DeleteMember().setVisible(true);  
}
```

Code on Search Member Menu Item

```
private void jMenuItem8ActionPerformed(java.awt.event.ActionEvent evt) {  
    new SearchMember().setVisible(true);  
}
```

Code on Update Member Menu Item

```
private void jMenuItem9ActionPerformed(java.awt.event.ActionEvent evt) {  
    new UpdateMember().setVisible(true);  
}
```

Code on View Member Menu Item

```
private void jMenuItem10ActionPerformed(java.awt.event.ActionEvent evt) {  
    new ViewMember().setVisible(true);  
}
```

Code on Add Transaction Menu Item

```
private void jMenuItem11ActionPerformed(java.awt.event.ActionEvent evt) {  
    new AddTransaction().setVisible(true);  
}
```

Code on Delete Transaction Menu Item

```
private void jMenuItem12ActionPerformed(java.awt.event.ActionEvent evt) {  
    new DeleteTransaction().setVisible(true);  
}
```

Code on Search Transaction Menu Item

```
private void jMenuItem13ActionPerformed(java.awt.event.ActionEvent evt) {  
    new SearchTransaction().setVisible(true);  
}
```

Code on Update Transaction Menu Item

```
private void jMenuItem14ActionPerformed(java.awt.event.ActionEvent evt) {  
    new UpdateTransaction().setVisible(true);  
}
```

Code on View Transaction Menu Item

```
private void jMenuItem15ActionPerformed(java.awt.event.ActionEvent evt) {  
    new ViewTransaction().setVisible(true);  
}
```

Adding Book Details

DETAILS OF A BOOK

BOOK_ID* 12001

TITLE Chemistry Today

AUTHOR Piyush Sharma

PUBLISHER India Today

PRICE

CATEGORY

- ☐ FICTION
- ☐ NON-FICTION
- ☒ MAGAZINE
- ☐ BIOGRAPHIES

EDITION

Message

RECORD ADDED

OK

Import the following :-

```
import java.sql.*;  
import javax.swing.JOptionPane;
```

Code on Add Button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
try  
{  
Class.forName("java.sql.DriverManager");
```

```

Connection con= DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
int book_id,price,edition = 0;
String title,author,publisher,category = null;
book_id=Integer.parseInt(tfbook.getText());
title=tftitle.getText();
author=tfauthor.getText();
publisher=tfpublisher.getText();
price=Integer.parseInt(tfprice.getText());
if(rbfiction.isSelected()==true)
    category="FICTION";
else if(rbnonfiction.isSelected()==true)
    category="NON-FICTION";
else if(rbmagazine.isSelected()==true)
    category="MAGAZINE";
else if(rbbiographies.isSelected()==true)
    category="BIOGRAPHIES";
int ind=jList1.getSelectedIndex();
if(ind==0)
    edition=2011;
else if(ind==1)
    edition=2010;
else if(ind==2)
    edition=2009;
else if(ind==3)
    edition=2008;
else if(ind==4)
    edition=2007;
else if(ind==5)
    edition=2006;
else if(ind==6)
    edition=2005;
String sql="Insert into book values("+ book_id + "," + title + "," + author + "," + publisher + "," +
category + "," + price + "," + edition + ")";
Statement st=(Statement) con.createStatement();
st.executeUpdate(sql);
JOptionPane.showMessageDialog(null,"RECORD ADDED");
}
catch(Exception e){ JOptionPane.showMessageDialog(null,e.getMessage());}
}

```

Deleting Book Details

The screenshot shows a Java Swing window titled "Deleting Book Details". Inside the window, there is a form with the following fields and values:

- BOOK_ID***: 12001
- Title**: Chemistry Today
- Author**: Piyush Sharma
- Publisher**: Goyal Prakashan
- Price**: 35
- CATEGORY**: ☐ FICTION, ☐ NON-FICTION
- EDITION**: 2011, 2010

At the bottom of the form, there are two buttons: "SEARCH" and "DELETE". A "Message" dialog box is overlaid on the form, displaying the message "RECORD DELETED" with an "OK" button.

Import the following :-

```
import java.sql.*;  
import javax.swing.JOptionPane;
```

Code on Search Button-

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
try {
```

```

        Class.forName("java.sql.DriverManager");
        Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
        String book_id,sql;
        book_id=tfbook.getText();
        sql="select * from book where book_id=" +book_id;
        Statement st=(Statement) con.createStatement();
        ResultSet rs=st.executeQuery(sql);
        if (!rs.next())
        JOptionPane.showMessageDialog(null,"No such record");
        else {
            tftitle.setText(rs.getString("title"));
            tfauthor.setText(rs.getString("author"));
            tfpublisher.setText(rs.getString("publisher"));
            tfprice.setText(rs.getString("price"));
        }
    }
}
catch(Exception e) {
    JOptionPane.showMessageDialog(null,"Error"+e.getMessage());
}
}
}

```

Code on Delete Button-

```

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
try{
    Class.forName("java.sql.DriverManager");
    Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    int book_id = 0;
    book_id=Integer.parseInt(tfbook.getText());
    String sql="delete from book where book_id="+book_id;
    Statement st=(Statement) con.createStatement();
    st.executeUpdate(sql);
    JOptionPane.showMessageDialog(null,"RECORD DELETED");
}
catch(Exception e){
    JOptionPane.showMessageDialog(null,e.getMessage());
}
}
}

```


Searching Book Details

Search a Book

Search a Book

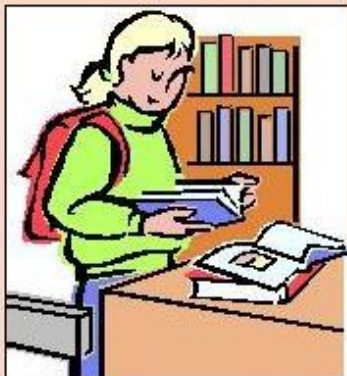
Book_Id* **Publisher**

Title **Price**

Author **Edition**

Category

SEARCH



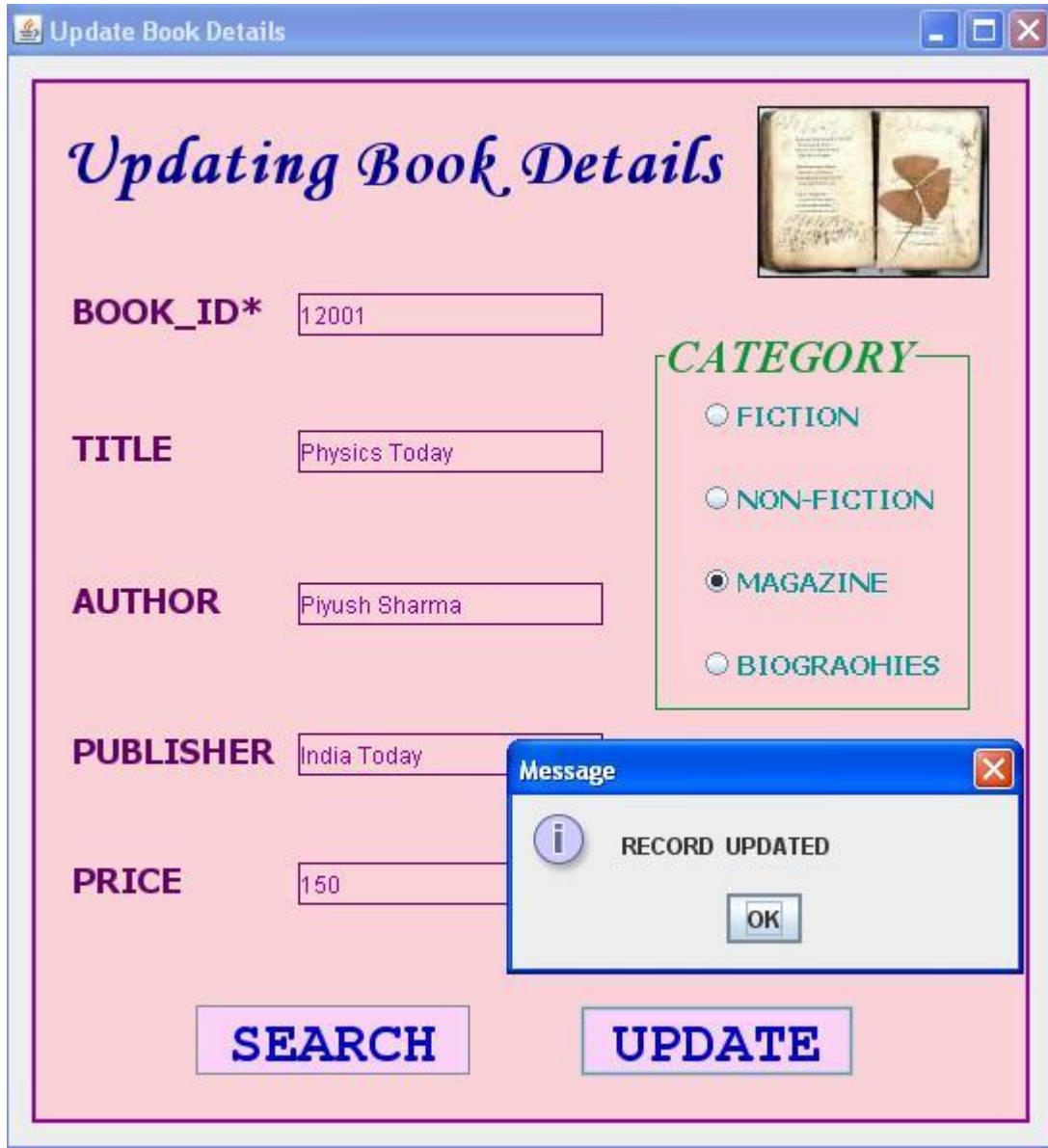
Import the following :-

```
import java.sql.*;
import javax.swing.JOptionPane;
```

Code on Search Button-

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
try {
    Class.forName("java.sql.DriverManager");
    Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    String book_id,sql;
    book_id=tfbook.getText();
    sql="select * from book where book_id=" +book_id;
    Statement st=(Statement) con.createStatement();
    ResultSet rs=st.executeQuery(sql);
    if (!rs.next())
        JOptionPane.showMessageDialog(null,"No such record");
    else {
        tftitle.setText(rs.getString("title"));
        tfauthor.setText(rs.getString("author"));
        tfpublisher.setText(rs.getString("publisher"));
        tfprice.setText(rs.getString("price"));
        tfedition.setText(rs.getString("edition"));
        tfcategory.setText(rs.getString("category"));
    }
}
catch(Exception e) {
    JOptionPane.showMessageDialog(null,"Error"+e.getMessage());
}
}
```

Updating Book Details



Update Book Details

Updating Book Details

BOOK_ID* 12001

TITLE Physics Today

AUTHOR Piyush Sharma

PUBLISHER India Today

PRICE 150

CATEGORY

- ☐ FICTION
- ☐ NON-FICTION
- ☒ MAGAZINE
- ☐ BIOGRAPHIES

SEARCH **UPDATE**

Message

RECORD UPDATED

OK

Import the following :-

```
import java.sql.*;  
import javax.swing.JOptionPane;
```

Code on Search Button

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {  
    btupdate.setEnabled(true);  
    try{
```

```

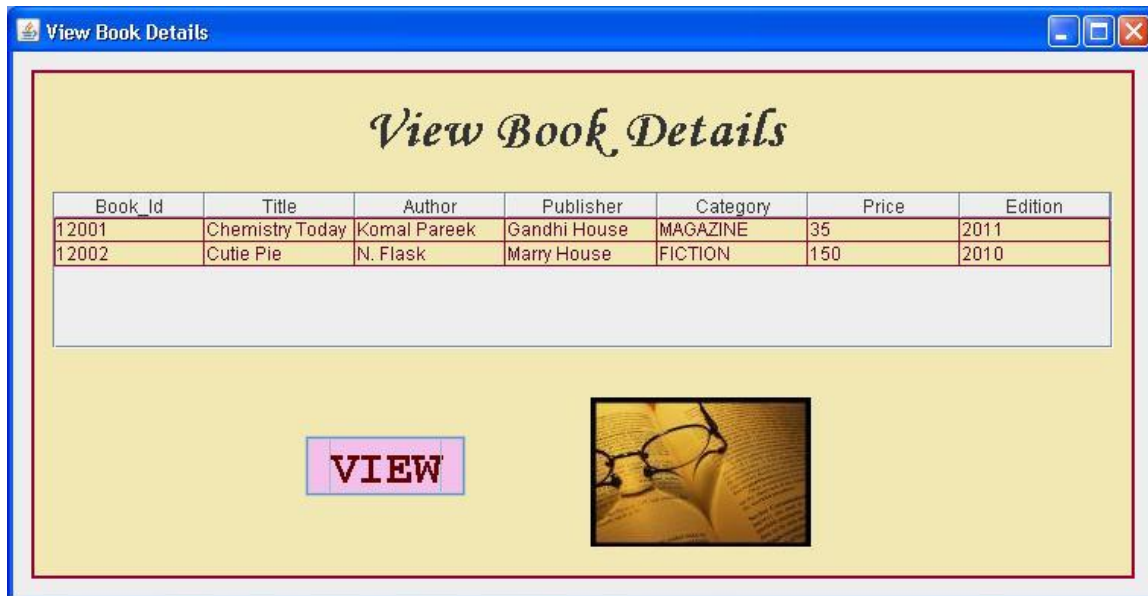
        Class.forName("java.sql.DriverManager");
        Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
        String book_id,sql;
        book_id=tfbook.getText();
        sql="select * from book where book_id=" +book_id;
        Statement st=(Statement) con.createStatement();
        ResultSet rs=st.executeQuery(sql);
        if (!rs.next())
            JOptionPane.showMessageDialog(null,"No such record");
        else {
            tftitle.setText(rs.getString("title"));
            tfauthor.setText(rs.getString("author"));
            tfpublisher.setText(rs.getString("publisher"));
            tfprice.setText(rs.getString("price"));
        }
    }
    catch(Exception e) {
        JOptionPane.showMessageDialog(null,"Error"+e.getMessage());
    }
}
}

```

Code on Update Button

```
private void btupdateActionPerformed(java.awt.event.ActionEvent evt) {
try {
    Class.forName("java.sql.DriverManager");
    Connection
con=DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    int book_id,price,edition = 0;
    String title,author,publisher,category = null;
    book_id=Integer.parseInt(tfbook.getText());
    title=tftitle.getText();
    author=tfauthor.getText();
    publisher=tfpublisher.getText();
    price=Integer.parseInt(tfprice.getText());
    if(rbfiction.isSelected()==true)
        category="FICTION";
    else if(rbnonfiction.isSelected()==true)
        category="NON-FICTION";
    else if(rbmagazine.isSelected()==true)
        category="MAGAZINE";
    else if(rbbiographies.isSelected()==true)
        category="BIOGRAPHIES";
    int ind=jList1.getSelectedIndex();
    if(ind==0)
        edition=2011;
    else if(ind==1)
        edition=2010;
    else if(ind==2)
        edition=2009;
    else if(ind==3)
        edition=2008;
    else if(ind==4)
        edition=2007;
    else if(ind==5)
        edition=2006;
    else if(ind==6)
        edition=2005;
    String sql="update book set title= '"+ title+"',author = '"+ author + "', publisher ='"+publisher
+ "',category= '"+ category+"',price="+price+",edition="+edition+" where book_id="+book_id;
    Statement st=(Statement) con.createStatement();
    st.executeUpdate(sql);
    JOptionPane.showMessageDialog(null,"RECORD UPDATED");
}
catch(Exception e){
    JOptionPane.showMessageDialog(null,e.getMessage());
}
}
```

Viewing Book Details



Import the following :-

```
import java.sql.*;  
import javax.swing.table.DefaultTableModel;
```

Code on View Button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
try {  
    Class.forName("java.sql.DriverManager");
```

```

Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
String book_id,price,edition;
String title,author,publisher,category,sql;
sql="select * from book";
Statement st=(Statement) con.createStatement();
ResultSet rs=st.executeQuery(sql);
DefaultTableModel model=(DefaultTableModel) jTable1.getModel();
int rows=model.getRowCount();
if (rows>0){
    for (int i=0; i<rows; i++) {
        model.removeRow(0);
    }
}

while(rs.next())
{
    book_id=rs.getString("book_id");
    title=rs.getString("title");
    author=rs.getString("author");
    publisher=rs.getString("publisher");
    category=rs.getString("category");
    price=rs.getString("price");
    edition=rs.getString("edition");
    model.addRow (new Object[] {book_id,title,author,publisher,category,price,edition});
}
}
catch(Exception e) {
System.out.println("Error"+e.getMessage());
}

}

```

Adding Member Details

Add New Member Details

Adding New Member Details



Member_ID*

Member Name

Address

Phone

Membership Type

- ☐ Gem (above 40)
- ☒ Vital (21-40)
- ☐ Juvenile(10-20)

GENDER

- ☐ Male
- ☒ Female

Message

RECORD ADDED

OK

ADD

Import the following :-

```
import java.sql.*;
import javax.swing.JOptionPane;
```

Code on Add Button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
try
{
    Class.forName("java.sql.DriverManager");
    Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    int member__id=0;
    String name,address,membership = null,gender = null;
    member_id=Integer.parseInt(tfid.getText());
    name=tfname.getText();
    address=tfadd.getText();
    int phone=Integer.parseInt(tfphone.getText());
    if(rbgem.isSelected()==true)
        membership="GEM";
    else if(rbvital.isSelected()==true)
        membership="VITAL";
    else if(rbjvenile.isSelected()==true)
        membership="JUVENILE";
    if(rbmale.isSelected()==true)
        gender="MALE";
    else if(rbfem.isSelected()==true)
        gender="FEMALE";
    String sql="Insert into member values(" + member_id + ", '" + name + "', '" + address + "', '" +
    phone + "', '" + membership + "', '" + gender + "')";
    Statement st=(Statement) con.createStatement();
    st.executeUpdate(sql);
    JOptionPane.showMessageDialog(null,"RECORD ADDED");
}
catch(Exception e){
    JOptionPane.showMessageDialog(null,e.getMessage());
}
}
```

Deleting Member Details

Deleting Member Details

Member_ID*

Member Name

Address

Phone

MEMBERSHIP TYPE

☐ GEM (Above 40)

☐ VITAL (21-40)

☐ JUVENILE (10-20)

Gender

☐ Male ☐ Female

SEARCH **DELETE**

Message

RECORD DELETED

OK



Import the following :-

```
import java.sql.*;
import javax.swing.JOptionPane;
```

Code on Search button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
try{
    Class.forName("java.sql.DriverManager");
    Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    String member_id,sql;
    member_id=tfid.getText();
    sql="select * from member where member_id=" +member_id;
    Statement st=(Statement) con.createStatement();
    ResultSet rs=st.executeQuery(sql);
    if (!rs.next())
        JOptionPane.showMessageDialog(null,"No such record");
    else {
        tfname.setText(rs.getString("member_name"));
        tfadd.setText(rs.getString("address"));
        tfphone.setText(rs.getString("phone"));
    }
}
    catch(Exception e) {
        JOptionPane.showMessageDialog(null,"Error"+e.getMessage());
    }
}
```

Code on Delete button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
try {
    Class.forName("java.sql.DriverManager");
    Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    int member_id = 0;
    member_id=Integer.parseInt(tfid.getText());
    String sql="delete from member where member_id="+member_id;
    Statement st=(Statement) con.createStatement();
    st.executeUpdate(sql);
    JOptionPane.showMessageDialog(null,"RECORD DELETED");
}
    catch(Exception e){
        JOptionPane.showMessageDialog(null,e.getMessage());
    }
}
```

Searching Member Details



The screenshot shows a Java Swing window titled "Search a Member". The window has a blue title bar with standard Windows controls. The main content area has a light orange background and is titled "Search a Member" in a purple, cursive font. The form contains several input fields and a search button:

- Member_ID***: Input field containing "02". A small blue tooltip box above the field says "Mandatory To Fill".
- Membership Type**: Input field containing "VITAL".
- Member Name**: Input field containing "Bhavika Shah".
- Gender**: Input field containing "FEMALE".
- Address**: Input field containing "Kerala".
- Phone**: Input field containing "2293675".
- SEARCH**: A yellow button with the word "SEARCH" in bold black letters.

On the right side of the form, there is a small rectangular image of a woman with short brown hair, wearing a black tank top, sitting and reading a book in a library setting with bookshelves in the background.

Import the following :-

```
import java.sql.*;  
import javax.swing.JOptionPane;
```

Code on Search button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
try{
    Class.forName("java.sql.DriverManager");
    Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    String member_id,sql;
    member_id=tfid.getText();
    sql="select * from member where member_id=" +member_id;
    Statement st=(Statement) con.createStatement();
    ResultSet rs=st.executeQuery(sql);
    if (!rs.next())
        JOptionPane.showMessageDialog(null,"No such record");
    else {
        tfname.setText(rs.getString("member_name"));
        tfadd.setText(rs.getString("address"));
        tfphone.setText(rs.getString("phone"));
        tfmembership.setText(rs.getString("membership"));
        tfgender.setText(rs.getString("gender"));
    }
}
catch(Exception e) {
    JOptionPane.showMessageDialog(null,"Error"+e.getMessage());
}
}
```

Updating Member Details

Update Member Details

Member_ID* 02

Member Name Bhavika Shah

Address Kerala

Phone 2293675

MEMBERSHIP TYPE

☐ GEM (Above 40)

☒ VITAL (21-40)

GENDER

☐ MALE

☒ FEMALE

SEARCH **UPDATE**

Message

RECORD UPDATED

OK

Import the following :-

```
import java.sql.*;  
import javax.swing.JOptionPane;
```

Code on Search button

```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {  
    btupdate.setEnabled(true);  
    try{  
        Class.forName("java.sql.DriverManager");
```

```

Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
String member_id,sql;
member_id=tfid.getText();
sql="select * from member where member_id=" +member_id;
Statement st=(Statement) con.createStatement();
ResultSet rs=st.executeQuery(sql);
if (!rs.next())
    JOptionPane.showMessageDialog(null,"No such record");
    else {
        tfname.setText(rs.getString("member_name"));
        tfadd.setText(rs.getString("address"));
        tfphone.setText(rs.getString("phone"));
    }
}
catch(Exception e) {
    JOptionPane.showMessageDialog(null,"Error"+e.getMessage());
}
}

```

Code on Update button

```

private void btupdateActionPerformed(java.awt.event.ActionEvent evt) {
try{
    Class.forName("java.sql.DriverManager");
    Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    int id,phone = 0;
    String name,address,membership = null,gender = null;
    id=Integer.parseInt(tfid.getText());
    name=tfname.getText();
    address=tfadd.getText();

```

```

phone=Integer.parseInt(tfphone.getText());
{
    if(rbgem.isSelected()==true)
        membership="GEM";
    else if(rbvital.isSelected()==true)
        membership="VITAL";
    else if(rbjunvenile.isSelected()==true)
        membership="JUVENILE";
}
{
    if(rbmale.isSelected()==true)
        gender="MALE";
    else if(rbfem.isSelected()==true)
        gender="FEMALE";
}
String sql="update member set member_id="+id+", member_name='"+name+"', address='"+
address+"',phone="+phone+",membership='"+membership+",gender='"+gender+" where
member_id="+id;
Statement st=(Statement) con.createStatement();
st.executeUpdate(sql);
JOptionPane.showMessageDialog(null,"RECORD UPDATED");
}
catch(Exception e){
    JOptionPane.showMessageDialog(null,e.getMessage());
}
}
}

```

Viewing Member Details



Import the following :-

```
import java.sql.*;
import javax.swing.table.DefaultTableModel;
```

Code on View button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
try{  
    Class.forName("java.sql.DriverManager");  
    Connection con=  
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");  
    String book_id,price,edition;  
    String title,author,publisher,category,sql;  
    sql="select * from book";  
    Statement st=(Statement) con.createStatement();  
    ResultSet rs=st.executeQuery(sql);  
    DefaultTableModel model=(DefaultTableModel) jTable1.getModel();  
    int rows=model.getRowCount();  
    if (rows>0){  
        for (int i=0; i<rows; i++)  
        {  
            model.removeRow(0);  
        }  
    }  
  
while(rs.next())  
{  
    book_id=rs.getString("book_id");  
    title=rs.getString("title");  
    author=rs.getString("author");  
    publisher=rs.getString("publisher");  
    category=rs.getString("category");  
    price=rs.getString("price");  
    edition=rs.getString("edition");  
    model.addRow (new Object[] {book_id,title,author,publisher,category,price,edition});  
}  
}  
catch(Exception e) {  
    System.out.println("Error"+e.getMessage());  
}  
}
```

Issue Book

Issue Book

BOOK_ID* 12001

Member_ID* 02

Issue Date 2011-07-03

Return Date 2011-07-03

Fine (10/day) 0

BOOK RATING

☒ EXCELLENT

☐ GOOD

Message

Book Issued

OK

Issue Book

Import the following :-

```
import java.sql.*;  
import java.text.SimpleDateFormat;  
import java.util.Date;  
import javax.swing.JOptionPane;
```

Code on Issue Book button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
try{  
    Class.forName("java.sql.DriverManager");  
    Connection con=  
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");  
    int book_id,member_id,fine = 0;  
    String book_rating = null,issue_date,return_date;  
    book_id=Integer.parseInt(tfbook.getText());  
    member_id=Integer.parseInt(tfid.getText());  
    issue_date=tfissue.getText();  
    return_date=tfreturn.getText();  
    fine=Integer.parseInt(tffine.getText());  
    if(tfexcellent.isSelected()==true)  
        book_rating="EXCELLENT";  
    else if(tfgood.isSelected()==true)  
        book_rating="GOOD";  
    else if(tfavg.isSelected()==true)  
        book_rating="AVERAGE";  
    else if(tfbelow.isSelected()==true)  
        book_rating="BELOW AVERAGE";  
    String sql="Insert into transaction values(" + book_id + "," + member_id + "," + issue_date + "," + return_date + "," + fine + "," + book_rating + ")";  
    Statement st=(Statement) con.createStatement();  
    st.executeUpdate(sql);  
    JOptionPane.showMessageDialog(null,"Book Issued");  
    }  
    catch(Exception e){  
        JOptionPane.showMessageDialog(null,e.getMessage());  
    }  
}
```

Code on return book

```
private void tfreturnFocusGained(java.awt.event.FocusEvent evt) {  
    String tfidate=tfissue.getText();  
    tfreturn.setText(tfidate);  
}  
  
public static final String DATE_FORMAT = "yyyy-MM-dd";
```

Code on issue book

```
private void tfissueFocusGained(java.awt.event.FocusEvent evt) {  
    SimpleDateFormat sdf = new SimpleDateFormat(DATE_FORMAT);  
    Date d=new Date();  
    tfissue.setText(sdf.format(d));  
}
```

Deleting Transaction Details



Deleting Transaction Details

BOOK_ID* 12001

Member_ID* 2

Issue Date 2011-07-03

Return Date 2011-07-03

Fine (10/Day) 0

Book Rating

☐ EXCELLENT

☐ GOOD

MESSAGE

RECORD DELETED

OK

SEARCH

DELETE

Import the following :-

```
import java.sql.*;  
import javax.swing.JOptionPane;
```

Code on Search button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {  
try{  
    Class.forName("java.sql.DriverManager");  
    Connection con=  
    DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
```

```

String book_id,sql;
book_id=tfbook.getText();
sql="select * from transaction where book_id=" +book_id;
Statement st=(Statement) con.createStatement();
ResultSet rs=st.executeQuery(sql);
if (!rs.next())
    JOptionPane.showMessageDialog(null,"No such record");
else {
    tfid.setText(rs.getString("member_id"));
    tfissue.setText(rs.getString("issue_date"));
    tfreturn.setText(rs.getString("return_date"));
    tffine.setText(rs.getString("fine"));
}
}
catch(Exception e) {
    JOptionPane.showMessageDialog(null,"Error"+e.getMessage());
}
}

```

Code on Delete button

```

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
try{
    Class.forName("java.sql.DriverManager");
    Connection con=
    DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    int book_id = 0;
    book_id=Integer.parseInt(tfbook.getText());
    String sql="delete from transaction where book_id="+book_id;
    Statement st=(Statement) con.createStatement();
    st.executeUpdate(sql);
    JOptionPane.showMessageDialog(null,"RECORD DELETED");
}
catch(Exception e){
    JOptionPane.showMessageDialog(null,e.getMessage());
}
}

```

Searching Transaction Details

Search Transaction Details

Search Transaction Details

Book_Id* <input type="text" value="12001"/> <input type="button" value="Mandatory To Fill"/>	Return Date <input type="text" value="2011-07-03"/>
Member_Id* <input type="text" value="2"/>	Fine (10/Day) <input type="text" value="0"/>
Issue Date <input type="text" value="2011-07-03"/>	Book Rating <input type="text" value="EXCELLENT"/>

Import the following :-

```
import java.sql.*;
import java.sql.ResultSet;
import javax.swing.JOptionPane;
```

Code on Search button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
try{
    Class.forName("java.sql.DriverManager");
    Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    String book_id,sql;
    book_id=tfbook.getText();
    sql="select * from transaction where book_id=" +book_id;
```

```

Statement st=(Statement) con.createStatement();
ResultSet rs=st.executeQuery(sql);
if (!rs.next())
    JOptionPane.showMessageDialog(null, "No such record");
else {
    tfid.setText(rs.getString("member_id"));
    tfissue.setText(rs.getString("issue_date"));
    tfreturn.setText(rs.getString("return_date"));
    tffine.setText(rs.getString("fine"));
    tfrating.setText(rs.getString("book_rating"));
}
}
catch(Exception e) {
    JOptionPane.showMessageDialog(null, "Error"+e.getMessage());
}
}

```

Return Book

Return Book

BOOK_ID* 12002

Member_ID* 3

Issue Date 2011-06-15

Return_Date 2011-07-03

Fine (10/Day) 80

BOOK RATING

☐ EXCELLENT

☐ GOOD

☒ AVERAGE

☐ BELOW AVERAGE

Message

RECORD UPDATED

OK

Return Book **Calculate Fine**

Import the following :-

```
import java.sql.*;
import java.text.SimpleDateFormat;
import java.util.Date;
import javax.swing.JOptionPane;
```

Code on Search button

```

public static final String DATE_FORMAT = "yyyy-MM-dd";

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
try{
    Class.forName("java.sql.DriverManager");
    Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    String book_id,sql;
    book_id=tfbook.getText();
    sql="select *from transaction where book_id=" +book_id;
    Statement st=(Statement) con.createStatement();
    ResultSet rs=st.executeQuery(sql);
    if (!rs.next())
        JOptionPane.showMessageDialog(null, "No such record");
    else {
        tfid.setText(rs.getString("member_id"));
        tfissue.setText(rs.getString("issue_date"));
        tffine.setText(rs.getString("fine"));

        SimpleDateFormat sdf = new SimpleDateFormat(DATE_FORMAT);
        Date d=new Date();
        tfreturn.setText(""+sdf.format(d));
    }
}
catch(Exception e) {
    JOptionPane.showMessageDialog(null, "Error"+e.getMessage());
}
}

```

Code on Return Book button

```

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    btcalcfine.setEnabled(true);
try{
        Class.forName("java.sql.DriverManager");
        Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");

```

```

int book_id,member_id,fine = 0;
String book_rating = null,issue_date,return_date;
book_id=Integer.parseInt(tfbook.getText());
member_id=Integer.parseInt(tfid.getText());
fine=Integer.parseInt(tffine.getText());
issue_date=tfissue.getText();
return_date=tfreturn.getText();
if(rbexcellent.isSelected()==true)
    book_rating="EXCELLENT";
else if(rbgood.isSelected()==true)
    book_rating="GOOD";
else if(rbaverage.isSelected()==true)
    book_rating="AVERAGE";
else if(rbbelow.isSelected()==true)
    book_rating="BELOW AVERAGE";
String sql="update transaction set member_id = " + member_id + ",issue_date ='"+ issue_date +
"',return_date='"+ return_date + "',fine='"+ fine + ",book_rating='"+ book_rating+"'' where book_
id="+book_id;
Statement st=(Statement) con.createStatement();
st.executeUpdate(sql);
JOptionPane.showMessageDialog(null,"RECORD UPDATED");
}
catch(Exception e){
    JOptionPane.showMessageDialog(null,e.getMessage());
}
}

```

Code on Calculate Fine button

```

private void btcalcfineActionPerformed(java.awt.event.ActionEvent evt) {
try{
    Class.forName("java.sql.DriverManager");

```

```

Connection con=
DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
String book_id,sql;
int totaldays=0,fine=0;
book_id=tfbook.getText();
sql="select datediff(return_date,issue_date) as totaldays from transaction where book_id=" +book_
id;
Statement st=(Statement) con.createStatement();
ResultSet rs=st.executeQuery(sql);
if (!rs.next())
    JOptionPane.showMessageDialog(null,"No such record");
else {
    totaldays=rs.getInt("totaldays");
    if (totaldays>10)
        fine =(totaldays - 10) *10;
    else
        fine = 0;
    tffine.setText(""+fine);
}
}
catch(Exception e) {
    JOptionPane.showMessageDialog(null,"Error"+e.getMessage());
}
}

```

Viewing Transaction Details

Import the following :-

```
import java.sql.*;
import javax.swing.table.DefaultTableModel;
```

Code on View button

```
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
try{
    Class.forName("java.sql.DriverManager");
    Connection con=
    DriverManager.getConnection("jdbc:mysql://localhost:3306/library","root","root");
    String book_id,member_id,issue_date,return_date,fine,book_rating,sql;
    sql="select * from transaction";
    Statement st=(Statement) con.createStatement();
    ResultSet rs=st.executeQuery(sql);
    DefaultTableModel model=(DefaultTableModel) jTable1.getModel();
    int rows=model.getRowCount();
    if (rows>0){
        for (int i=0; i<rows; i++) {
            model.removeRow(0);
        }
    }

    while(rs.next())
    {
        book_id=rs.getString("book_id");
        member_id=rs.getString("member_id");
        issue_date=rs.getString("issue_date");
        return_date=rs.getString("return_date");
        fine=rs.getString("fine");
        book_rating=rs.getString("book_rating");
        model.addRow(new Object[] {book_id,member_id,issue_date,return_date,fine,book_rating});
    }
} catch(Exception e) {
    System.out.println("Error"+e.getMessage());
}
}
```

Bibliography

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2. Text book of Informatics Practices
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