PROGRAM:

1. App.java

```
import javafx.application.Application;
import javafx.fxml.FXMLLoader;
import javafx.scene.Parent;
import javafx.scene.Scene;
import javafx.scene.control.Alert;
import javafx.stage.Stage;
import java.io.IOException;
import java.sql.*;
public class App extends Application{
final static String url = "jdbc:mysql://localhost:3306/books";
final static String user = "root";
final static String pass = "0000";
public static void main(String[] args){
launch(args);
}
public void start(Stage stage){
Parent root;
try {
root = FXMLLoader.load(getClass().getResource("MainMenu.fxml"));
Scene scene = new Scene(root);
stage.setScene(scene);
stage.setTitle("Team 2's RetailShop");
```

```
stage.setResizable(false);
stage.show();
} catch (IOException e) {
e.printStackTrace();
}
}
public static String getBookID(){
String res ="Book ID\n\n";
try{
Connection con = DriverManager.getConnection(url, user, pass);
Statement stmt = con.createStatement();
String sql = "SELECT bookID FROM books;";
ResultSet rs = stmt.executeQuery(sql);
while(rs.next()){
res+=(String.valueOf(rs.getInt("bookID"))+"\n\n");
}
//System.out.println(res);
con.close();
}
catch(SQLException e){
e.printStackTrace();
}
return res;
public static String getBookNames(){
String res = "Book Name\n\n";
```

```
try{
Connection con = DriverManager.getConnection(url, user, pass);
Statement stmt = con.createStatement();
String sql = "SELECT bookname FROM books;";
ResultSet rs = stmt.executeQuery(sql);
while(rs.next()){
res+=(rs.getString("Bookname"))+"\n\n";
}
//System.out.println(res);
con.close();
}
catch(SQLException e){
e.printStackTrace();
}
return res;
}
public static String getAuthorNames(){
String res ="Author Name\n\n";
try{
Connection con = DriverManager.getConnection(url, user, pass);
Statement stmt = con.createStatement();
String sql = "SELECT bookAuthor FROM books;";
ResultSet rs = stmt.executeQuery(sql);
while(rs.next()){
res+=rs.getString("BookAuthor")+"\n\n";
}
```

```
//System.out.println(res);
con.close();
}
catch(SQLException e){
e.printStackTrace();
}
return res;
}
public static void enterBook(String bookName, String bookAuthor){
try{
Connection con = DriverManager.getConnection(url, user, pass);
Statement stmt = con.createStatement();
String findID ="SELECT bookID FROM books ORDER BY bookID DESC";
ResultSet id = stmt.executeQuery(findID);
id.next();
int newID = id.getInt("bookID")+1;
String sql ="INSERT INTO books VALUES ("+newID+", ""+bookName+"',
""+bookAuthor+"");";
stmt.execute(sql);
//System.out.println("\t\tInserted Successfully");
}
catch(SQLException e){
e.printStackTrace();
}
public static void showAlert(String Header, String message){
Alert alert = new Alert(Alert.AlertType.INFORMATION);
```

```
alert.setTitle("Successful");
alert.setHeaderText(Header);
alert.setContentText(message);
alert.showAndWait();
}
public static void deleteBook(int bookid){
String sql = "DELETE FROM books WHERE bookid = "+bookid+";";
try{
Connection con = DriverManager.getConnection(url, user, pass);
Statement stmt = con.createStatement();
stmt.execute(sql);
}
catch(SQLException e){
e.printStackTrace();
}
}
}
2. BookDetails.fxml
<?xml version="1.0" encoding="UTF-8"?>
<?import javafx.scene.control.Button?>
<?import javafx.scene.control.Label?>
<?import javafx.scene.control.ScrollPane?>
<?import javafx.scene.effect.DropShadow?>
<?import javafx.scene.image.Image?>
```

```
<?import javafx.scene.image.lmageView?>
<?import javafx.scene.layout.AnchorPane?>
<?import javafx.scene.layout.HBox?>
<?import javafx.scene.layout.VBox?>
<?import javafx.scene.text.Font?>
<?import javafx.scene.text.Text?>
<AnchorPane maxHeight="-Infinity" maxWidth="-Infinity" minHeight="-</p>
Infinity" minWidth="-Infinity" prefHeight="400.0" prefWidth="600.0"
xmlns="http://javafx.com/javafx/21" xmlns:fx="http://javafx.com/fxml/1"
fx:controller="BookDetailsController">
<children>
<ImageView fitHeight="400.0" fitWidth="600.0" pickOnBounds="true">
<image>
<lmage url="@../img/Menu.jpg" />
</image>
<Text fill="WHITE" layoutX="189.0" layoutY="45.0" stroke="BLACK"
strokeType="OUTSIDE" strokeWidth="2.0" text="Available Books"
textAlignment="CENTER" wrappingWidth="220.19921875">
<font>
<Font name="System Bold" size="25.0" />
</font>
</Text>
<ScrollPane layoutX="53.0" layoutY="74.0" prefHeight="241.0"</pre>
prefWidth="492.0">
<content>
<AnchorPane minHeight="0.0" minWidth="0.0" prefHeight="497.0"</pre>
prefWidth="492.0">
```

```
<children>
<HBox layoutX="3.0" layoutY="3.0" prefHeight="496.0" prefWidth="486.0"</pre>
spacing="30.0">
<children>
<VBox fx:id="BookIDVBox" alignment="TOP_CENTER" prefHeight="496.0"</pre>
prefWidth="136.0">
<children>
<Label alignment="TOP_CENTER" textAlignment="CENTER" />
</children>
</VBox>
<VBox fx:id="BookNameVBox" alignment="TOP_CENTER" prefHeight="496.0"</pre>
prefWidth="136.0">
<children>
<Label alignment="TOP_CENTER" prefHeight="17.0" prefWidth="19.0"</pre>
textAlignment="CENTER" />
</children>
</VBox>
<VBox fx:id="BookAuthorVBox" alignment="TOP CENTER" prefHeight="496.0"</pre>
prefWidth="136.0">
<children>
<Label alignment="TOP_CENTER" prefHeight="17.0" prefWidth="19.0"</pre>
textAlignment="CENTER" />
</children>
</VBox>
</children>
</HBox>
</children>
</AnchorPane>
```

```
</content>
</ScrollPane>
<Button layoutX="27.0" layoutY="22.0" mnemonicParsing="false"</pre>
onAction="#backButtonOnClicked" style="-fx-background-color: lightskyblue;"
text="Back">
<effect>
<DropShadow />
</effect></Button>
</children>
</AnchorPane>
3. BookDetailsController.java
import javafx.event.ActionEvent;
import javafx.fxml.FXML;
import javafx.scene.layout.VBox;
import java.io.IOException;
import java.net.URL;
import java.util.ResourceBundle;
import javafx.fxml.FXMLLoader;
import javafx.fxml.Initializable;
import javafx.scene.Node;
import javafx.scene.Parent;
import javafx.scene.Scene;
import javafx.scene.text.Text;
import javafx.stage.Stage;
public class BookDetailsController implements Initializable {
```

```
@FXML
private VBox BookAuthorVBox;
@FXML
private VBox BookIDVBox;
@FXML
private VBox BookNameVBox;
private Stage stage;
@FXML
void backButtonOnClicked(ActionEvent event) {
try{
Parent root = FXMLLoader.load(getClass().getResource("MainMenu.fxml"));
Scene scene = new Scene(root);
stage = (Stage)((Node)event.getSource()).getScene().getWindow();
stage.setScene(scene);
stage.show();
}
catch(IOException e){
e.printStackTrace();
}
}
public void initialize(URL url, ResourceBundle resourceBundle){
String BookID= App.getBookID();
System.out.println(BookID);
Text bookID = new Text(BookID);
BookIDVBox.getChildren().add(bookID);
String bookName = App.getBookNames();
```

```
Text Booknames = new Text(bookName);
BookNameVBox.getChildren().add(Booknames);
String Author = App.getAuthorNames();
Text Authornames = new Text(Author);
BookAuthorVBox.getChildren().add(Authornames);
}
}
4. BookDetailsAndDeletion.fxml
<?xml version="1.0" encoding="UTF-8"?>
<?import javafx.scene.control.Button?>
<?import javafx.scene.control.Label?>
<?import javafx.scene.control.ScrollPane?>
<?import javafx.scene.control.TextField?>
<?import javafx.scene.effect.DropShadow?>
<?import javafx.scene.image.Image?>
<?import javafx.scene.image.ImageView?>
<?import javafx.scene.layout.AnchorPane?>
<?import javafx.scene.layout.HBox?>
<?import javafx.scene.layout.VBox?>
<?import javafx.scene.text.Font?>
<?import javafx.scene.text.Text?>
<AnchorPane maxHeight="-Infinity" maxWidth="-Infinity" minHeight="-</p>
Infinity" minWidth="-Infinity" prefHeight="448.0" prefWidth="672.0"
xmlns="http://javafx.com/javafx/21" xmlns:fx="http://javafx.com/fxml/1"
fx:controller="DeletionController">
```

```
<children>
<ImageView fitHeight="456.0" fitWidth="682.0" layoutY="-5.0"</pre>
pickOnBounds="true">
<image>
<lmage url="@../img/Menu.jpg" />
</image>
/ImageView>
<ScrollPane layoutX="83.0" layoutY="73.0" prefHeight="217.0"</pre>
prefWidth="530.0">
<content>
<HBox alignment="TOP_CENTER" prefHeight="609.0" prefWidth="530.0"</pre>
spacing="25.0">
<children>
<VBox fx:id="BookIDVBox" alignment="TOP_CENTER" prefHeight="609.0"</pre>
prefWidth="144.0">
<children>
<Label />
</children>
</VBox>
<VBox fx:id="BookNameVBox" alignment="TOP CENTER" prefHeight="609.0"</pre>
prefWidth="144.0">
<children>
<Label prefHeight="17.0" prefWidth="16.0" />
</children>
</VBox>
<VBox fx:id="BookAuthorVBox" alignment="TOP_CENTER" prefHeight="609.0"</pre>
prefWidth="144.0">
<children>
```

```
<Label prefHeight="17.0" prefWidth="17.0" />
</children>
</VBox>
</children>
</HBox>
</content>
</ScrollPane>
<Text fill="WHITE" layoutX="226.0" layoutY="39.0" stroke="BLACK"
strokeType="OUTSIDE" text="Book Details" textAlignment="CENTER">
<font>
<Font name="Courier New Bold" size="32.0" />
</font>
</Text>
<Text layoutX="282.0" layoutY="325.0" strokeType="OUTSIDE"
strokeWidth="0.0" text="Deletion">
<font>
<Font name="Constantia" size="20.0" />
</font>
</Text>
<TextField fx:id="cusIDDeletion" layoutX="181.0" layoutY="343.0"
promptText="Enter Book ID">
<effect>
<DropShadow />
</effect>
</TextField>
<Button fx:id="deleteButton" layoutX="350.0" layoutY="343.0"
mnemonicParsing="false" onAction="#DeleteButtonOnClicked" style="-fx-
background-color: wheat;" text="Delete">
```

```
<effect>
<DropShadow />
</effect></Button>
<Button fx:id="backButton" layoutX="35.0" layoutY="18.0"
mnemonicParsing="false" onAction="#backButtonOnClicked" style="-fx-
background-color: lightskyblue;" text="Back">
<effect>
<DropShadow />
</effect></Button>
</children>
</AnchorPane>
5. DeletionController.java
import javafx.event.ActionEvent;
import javafx.fxml.FXML;
import javafx.fxml.FXMLLoader;
import javafx.fxml.Initializable;
import javafx.scene.Node;
import javafx.scene.Parent;
import javafx.scene.Scene;
import javafx.scene.control.Button;
import javafx.scene.control.TextField;
import javafx.scene.layout.VBox;
import javafx.scene.text.Text;
import javafx.stage.Stage;
import java.io.IOException;
```

```
import java.net.URL;
import java.util.ResourceBundle;
public class DeletionController implements Initializable {
@FXML
private VBox BookIDVBox;
@FXML
private VBox BookNameVBox;
@FXML
private VBox BookAuthorVBox;
@FXML
private Button backButton;
@FXML
private TextField cusIDDeletion;
@FXML
private Button deleteButton;
private Stage stage;
public void initialize(URL url, ResourceBundle res){
String BookID= App.getBookID();
System.out.println(BookID);
Text bookID = new Text(BookID);
BookIDVBox.getChildren().add(bookID);
String bookName = App.getBookNames();
Text Booknames = new Text(bookName);
BookNameVBox.getChildren().add(Booknames);
String Author = App.getAuthorNames();
Text Authornames = new Text(Author);
```

```
BookAuthorVBox.getChildren().add(Authornames);
}
@FXML
void DeleteButtonOnClicked(ActionEvent event) {
int cusID = Integer.parseInt(cusIDDeletion.getText());
App.deleteBook(cusID);
App.showAlert( "Entry Removed", "The Book with Book ID: "+cusID+" has been
deletd from the Database.");
}
@FXML
void backButtonOnClicked(ActionEvent event) {
try{
Parent root = FXMLLoader.load(getClass().getResource("MainMenu.fxml"));
Scene scene = new Scene(root);
stage = (Stage)((Node)event.getSource()).getScene().getWindow();
stage.setScene(scene);
stage.show();
}
catch(IOException e){
e.printStackTrace();
}
}
}
6. InsertBook.fxml
<?xml version="1.0" encoding="UTF-8"?>
<?import javafx.scene.control.Button?>
```

```
<?import javafx.scene.control.Label?>
<?import javafx.scene.control.TextField?>
<?import javafx.scene.effect.DropShadow?>
<?import javafx.scene.image.Image?>
<?import javafx.scene.image.lmageView?>
<?import javafx.scene.layout.AnchorPane?>
<?import javafx.scene.text.Font?>
<?import javafx.scene.text.Text?>
<AnchorPane maxHeight="-Infinity" maxWidth="-Infinity" minHeight="-</p>
Infinity" minWidth="-Infinity" prefHeight="400.0" prefWidth="600.0"
xmlns="http://javafx.com/javafx/21" xmlns:fx="http://javafx.com/fxml/1"
fx:controller="InsertBookController">
<children>
<ImageView fitHeight="406.0" fitWidth="612.0" layoutX="-8.0" layoutY="-1.0"</pre>
pickOnBounds="true">
<image>
<lmage url="@../img/Menu.jpg" />
</image>
<Text layoutX="165.0" layoutY="64.0" stroke="WHITE" strokeType="OUTSIDE"
strokeWidth="2.0" text="Enter a New Book">
<font>
<Font name="Arial Bold" size="32.0" />
</font>
</Text>
<TextField fx:id="NewBookField" layoutX="300.0" layoutY="143.0"
prefHeight="32.0" prefWidth="209.0" promptText="Book Name">
<effect>
```

```
<DropShadow />
</effect></TextField>
<Label layoutX="117.0" layoutY="148.0" text="Enter Book Name: "</pre>
textFill="WHITE">
<font>
<Font name="Calibri" size="19.0" />
</font>
</Label>
<Label layoutX="127.0" layoutY="200.0" text="Enter Book Author: "</pre>
textFill="WHITE">
<font>
<Font name="Calibri" size="19.0" />
</font>
</Label>
<TextField fx:id="NewAuthorField" layoutX="300.0" layoutY="195.0"
prefHeight="32.0" prefWidth="209.0" promptText="Author Name">
<effect>
<DropShadow />
</effect></TextField>
<Button layoutX="242.0" layoutY="328.0" mnemonicParsing="false"
onAction="#DoneButtonOnClicked" prefHeight="32.0" prefWidth="108.0"
style="-fx-background-color: wheat;" text="Done">
<effect>
<DropShadow />
</effect></Button>
<Button layoutX="25.0" layoutY="44.0" mnemonicParsing="false"</pre>
onAction="#backButtonOnClicked" style="-fx-background-color: lightskyblue;"
text="Back">
```

```
<effect>
<DropShadow />
</effect></Button>
</children>
</AnchorPane>
7. InsertBookController.java
import java.io.IOException;
import javafx.event.ActionEvent;
import javafx.fxml.FXML;
import javafx.fxml.FXMLLoader;
import javafx.scene.Node;
import javafx.scene.Parent;
import javafx.scene.Scene;
import javafx.scene.control.TextField;
import javafx.stage.Stage;
public class InsertBookController {
@FXML
private TextField NewAuthorField;
@FXML
private TextField NewBookField;
private Stage stage;
@FXML
void DoneButtonOnClicked(ActionEvent event) {
String bookname = NewBookField.getText();
```

```
String Authorname = NewAuthorField.getText();
App.enterBook(bookname, Authorname);
App.showAlert("Book Added!","The Book "+bookname+" is Added to the
Database");
}
@FXML
void backButtonOnClicked(ActionEvent event) {
try{
Parent root = FXMLLoader.load(getClass().getResource("MainMenu.fxml"));
Scene scene = new Scene(root);
stage = (Stage)((Node)event.getSource()).getScene().getWindow();
stage.setScene(scene);
stage.show();
}
catch(IOException e){
e.printStackTrace();
}
}
}
8. MainMenu.fxml
<?xml version="1.0" encoding="UTF-8"?>
<?import javafx.scene.control.Button?>
<?import javafx.scene.control.Menu?>
<?import javafx.scene.control.MenuBar?>
<?import javafx.scene.control.MenuItem?>
```

```
<?import javafx.scene.control.SeparatorMenuItem?>
<?import javafx.scene.image.Image?>
<?import javafx.scene.image.ImageView?>
<?import javafx.scene.layout.AnchorPane?>
<?import javafx.scene.layout.VBox?>
<?import javafx.scene.text.Font?>
<?import javafx.scene.text.Text?>
<VBox prefHeight="400.0" prefWidth="640.0"
xmlns="http://javafx.com/javafx/21" xmlns:fx="http://javafx.com/fxml/1"
fx:controller="MainMenuController">
<children>
<MenuBar VBox.vgrow="NEVER">
<menus>
<Menu mnemonicParsing="false" text="File">
<items>
<MenuItem mnemonicParsing="false" text="New" />
<MenuItem mnemonicParsing="false" text="Open..." />
<Menu mnemonicParsing="false" text="Open Recent" />
<SeparatorMenuItem mnemonicParsing="false" />
<MenuItem mnemonicParsing="false" text="Close" />
<MenuItem mnemonicParsing="false" text="Save" />
<MenuItem mnemonicParsing="false" text="Save As..." />
<MenuItem mnemonicParsing="false" text="Revert" />
<SeparatorMenuItem mnemonicParsing="false" />
<MenuItem mnemonicParsing="false" text="Preferences..." />
<SeparatorMenuItem mnemonicParsing="false" />
<MenuItem mnemonicParsing="false" text="Quit" />
```

```
</items>
</Menu>
<Menu mnemonicParsing="false" text="Edit">
<items>
<MenuItem mnemonicParsing="false" text="Undo" />
<MenuItem mnemonicParsing="false" text="Redo" />
<SeparatorMenuItem mnemonicParsing="false" />
<MenuItem mnemonicParsing="false" text="Cut" />
<MenuItem mnemonicParsing="false" text="Copy" />
<MenuItem mnemonicParsing="false" text="Paste" />
<MenuItem mnemonicParsing="false" text="Delete" />
<SeparatorMenuItem mnemonicParsing="false" />
<MenuItem mnemonicParsing="false" text="Select All" />
<MenuItem mnemonicParsing="false" text="Unselect All" />
</items>
</Menu>
<Menu mnemonicParsing="false" text="Help">
<items>
<MenuItem mnemonicParsing="false" text="About MyHelloApp" />
</items>
</Menu>
</menus>
</MenuBar>
<AnchorPane maxHeight="-1.0" maxWidth="-1.0" prefHeight="-1.0"</pre>
prefWidth="-1.0" VBox.vgrow="ALWAYS">
<children>
<ImageView fitHeight="425.0" fitWidth="648.0" pickOnBounds="true">
```

```
<image>
<lmage url="@../img/Menu.jpg" />
</image>
<Text fontSmoothingType="LCD" layoutX="111.0" layoutY="63.0"
stroke="WHITE" strokeType="OUTSIDE" strokeWidth="2.0" text="Library
Management System" textAlignment="JUSTIFY">
<font>
<Font name="Leelawadee Bold" size="40.0" />
</font>
</Text>
<VBox alignment="CENTER" fillWidth="false" layoutX="471.0" layoutY="105.0"</pre>
prefHeight="200.0" prefWidth="163.0" spacing="20.0">
<children>
<Button fx:id="showBooks" mnemonicParsing="false"
onAction="#OnClickShowBooks" style="-fx-background-color: #36ffb8;"
text="Show Books">
<font>
<Font name="Arial Bold" size="19.0" />
</font>
</Button>
<Button fx:id="insertBooks" mnemonicParsing="false"
onAction="#OnClickInsertBooks" style="-fx-background-color: #36ffb8;"
text="Insert Books">
<font>
<Font name="Arial Bold" size="19.0" />
</font>
</Button>
```

```
<Button fx:id="updateBooks" mnemonicParsing="false"
onAction="#OnClickUpdateBooks" style="-fx-background-color: #36ffb8;"
text="Update Books">
<font>
<Font name="Arial Bold" size="19.0" />
</font>
</Button>
<Button fx:id="deleteBooks" mnemonicParsing="false"
onAction="#OnClickDeleteBooks" style="-fx-background-color: #36ffb8;"
text="Delete Books">
<font>
<Font name="Arial Bold" size="19.0" />
</font>
</Button>
</children>
</VBox>
</children>
</AnchorPane>
</children>
</VBox>
9. MainMenuController.java
import javafx.fxml.FXML;
import javafx.fxml.FXMLLoader;
import javafx.scene.Node;
import javafx.scene.Parent;
```

```
import javafx.scene.Scene;
import javafx.stage.Stage;
import javafx.scene.control.Button;
import java.io.IOException;
import javafx.event.ActionEvent;
public class MainMenuController {
@FXML
private Button deleteBooks;
@FXML
private Button insertBooks;
@FXML
private Button showBooks;
@FXML
private Button updateBooks;
private Stage stage;
@FXML
void OnClickDeleteBooks(ActionEvent event) {
try{
Parent root =
FXMLLoader.load(getClass().getResource("BookDetailsAndDeletion.fxml"));
Scene scene = new Scene(root);
stage = (Stage)((Node)event.getSource()).getScene().getWindow();
stage.setScene(scene);
stage.show();
}
catch(IOException e){
e.printStackTrace();
```

```
}
}
@FXML
void OnClickInsertBooks(ActionEvent event) {
try{
Parent root = FXMLLoader.load(getClass().getResource("InsertBook.fxml"));
Scene scene = new Scene(root);
stage = (Stage)((Node)event.getSource()).getScene().getWindow();
stage.setScene(scene);
stage.show();
}
catch(IOException e){
e.printStackTrace();
}
}
@FXML
void OnClickShowBooks(ActionEvent event) {
try{
Parent root = FXMLLoader.load(getClass().getResource("BookDetails.fxml"));
Scene scene = new Scene(root);
stage = (Stage)((Node)event.getSource()).getScene().getWindow();
stage.setScene(scene);
stage.show();
catch(IOException e){
e.printStackTrace();
```

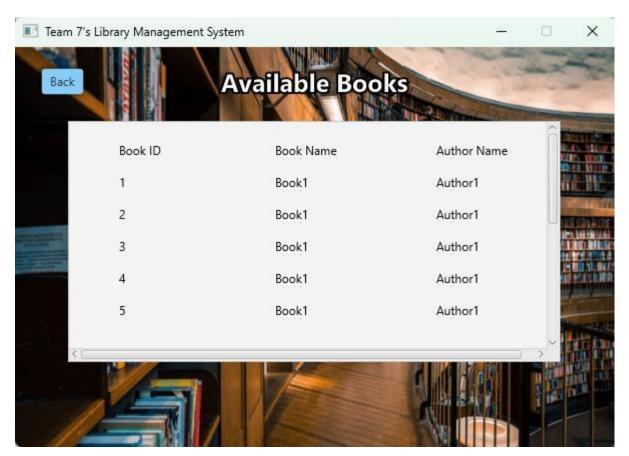
```
}

@FXML

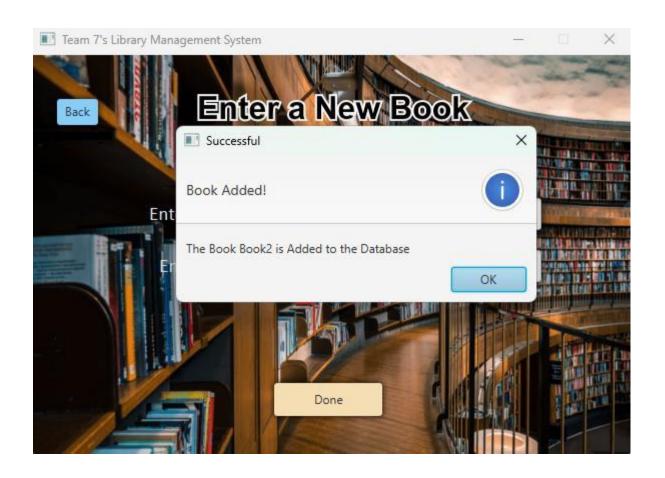
void OnClickUpdateBooks(ActionEvent event) {
}
```

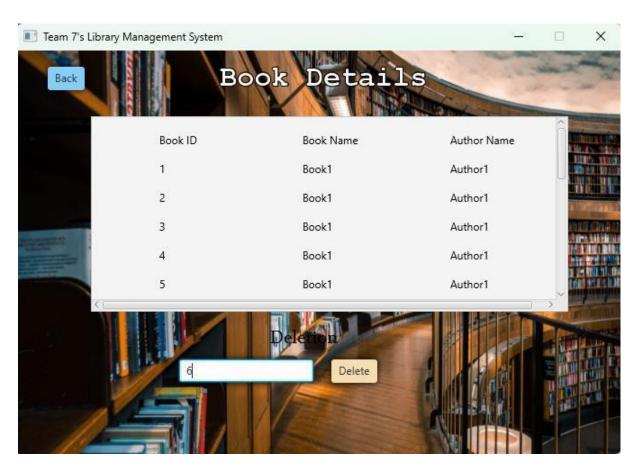
SAMPLE OUTPUT:

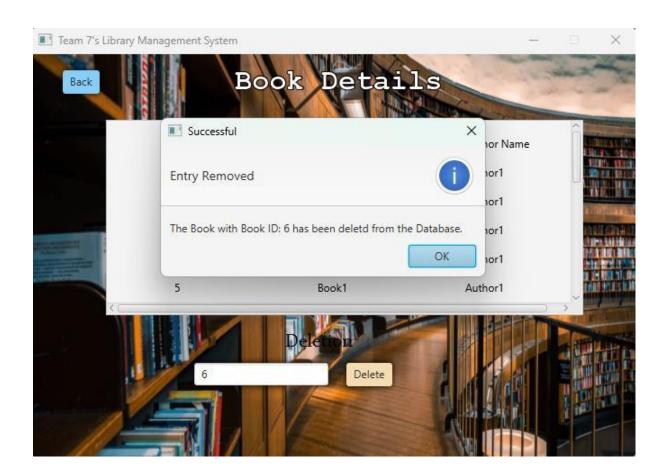












ER DIAGRAM:

