CONCERT BOOKING MANAGEMENT SYSTEM

A MINI-PROJECT REPORT

Submitted by

M. AISHWARYA 230701016

ATHIENA RACHEL 230701046

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THANDALAM

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BONAFIDE CERTIFICATE

Certified that this project report "**CONCERT BOOKING MANAGEMENT SYSTEM**" is the Bonafide work of **"M. AISHWARYA (230701016), ATHIENA RACHEL(230701046),"**

who carried out the project work under my supervision.

Submitted for the Practical Examination held on _____

SIGNATURE

Ms. DHARANI DEVI
Assistant Professor (SG),
Computer Science and Engineering,
Rajalakshmi Engineering College,
(Autonomous),
Thandalam, Chennai - 602 105

INTERNAL EXAMINER **EXTERNAL EXAMINER**

ABSTRACT

Concert Booking Management System is a simple console application written in C that uses linked lists to manage concert bookings. The system allows users to book tickets, cancel bookings, and view booking records with user details. Each concert is identified by a unique concert ID, and users can book tickets by entering the concert ID along with their personal details.

The system ensures that users can only book one ticket for a concert at a time. When a user cancels their booking, the ticket becomes available for others. The system also provides a way to display the list of all current bookings, showing which concerts have been booked and by which users. Through basic operations, such as booking tickets, cancelling bookings, and viewing records, the system efficiently tracks concert attendance and user participation.

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INTRODUCTION

In this Concert Booking Management System, users can perform basic operations like booking tickets for concerts and viewing booked ticket records along with user details. Here a new user can sign-up to the interface by entering the necessary details and then with those details they can login to the interface.
If a user is already existing they can just login with the details.
After login, users can select the desired concert and book tickets accordingly.
If tickets for a particular concert is sold out the interface will show an error , notifying the user immediately, else it will generate a bill. This system offers a secure, user-friendly way to manage concert ticket booking.

SYSTEM SPECIFICATIONS

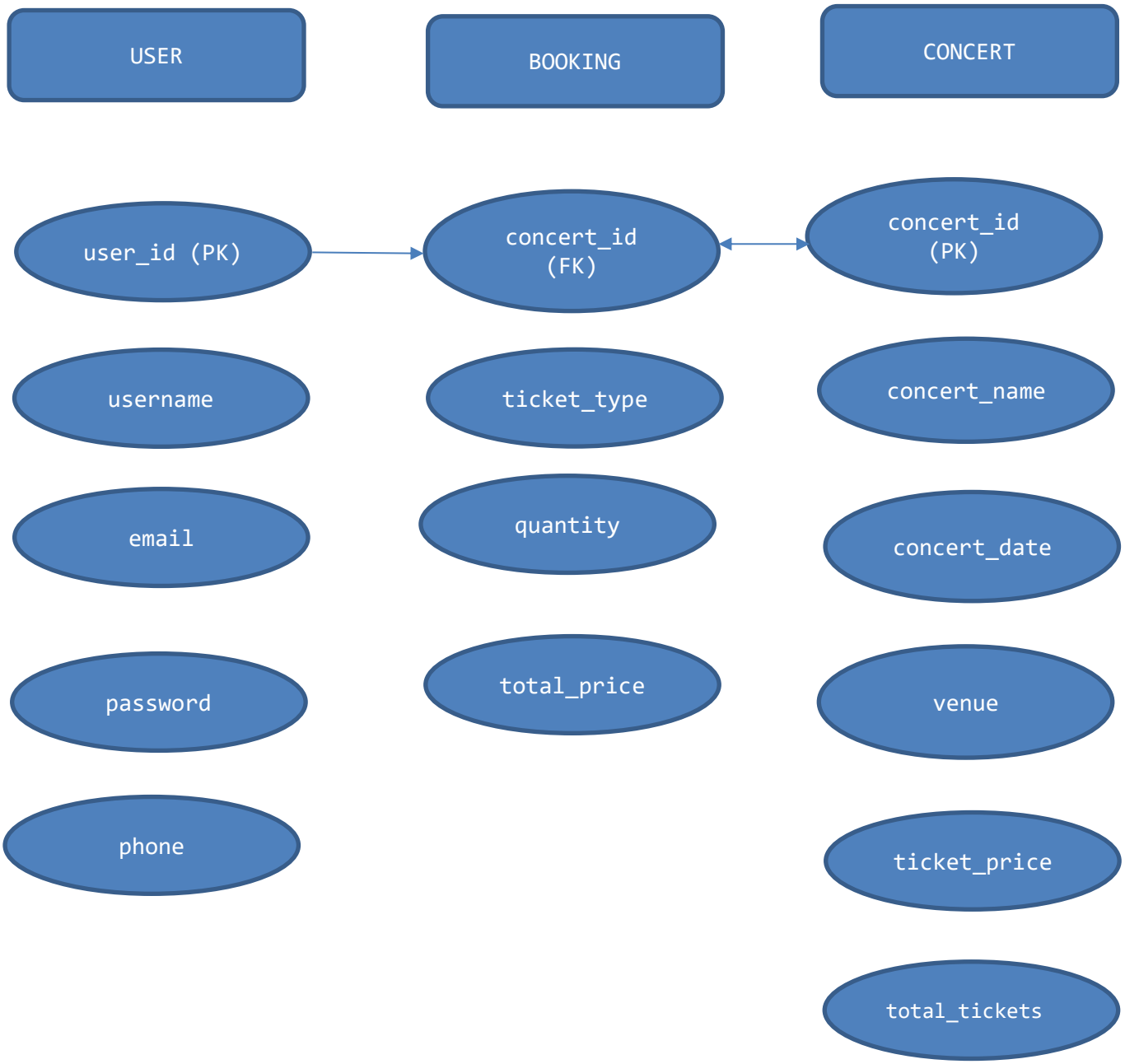
HARDWARE SPECIFICATIONS:

- PROCESSOR : Intel i5
- MEMORY SIZE : 4GB(Minimum)
- HARD DISK : 500 GB of free space

SOFTWARE SPECIFICATIONS:

- PROGRAMMING LANGUAGE : Java, MySQL
- FRONT-END : Java
- BACK-END : MySQL
- OPERATING SYSTEM : Windows 10

ER DIAGRAM


USER
BOOKING
CONCERT
user_id (PK)
concert_id (FK)
concert_id (PK)
username
ticket_type
concert_name
email
quantity
concert_date
password
total_price
venue
phone
ticket_price
total_tickets

NORMALIZATION

Step 1: First Normal Form (1NF)

The system is in **1NF** as each column contains atomic values and no repeating groups:

- **User**: user_id (PK), username, email, password, phone
- **Booking**: booking_id (PK), user_id (FK), concert_id (FK), ticket_type, quantity, total_price
- **Concert**: concert_id (PK), concert_name, concert_date, venue, ticket_price, total_tickets

Step 2: Second Normal Form (2NF)

The system is in **2NF** as all non-key attributes are fully dependent on the primary key. The Booking table meets this condition since attributes like ticket_type, quantity, and total_price depend on both **user_id** and **concert_id**.

Step 3: Third Normal Form (3NF)

The system is in **3NF** after eliminating transitive dependency. The **ticket_price** was moved to a new table **Concert_Pricing** because it depended on the concert, not on the booking directly.

Normalized Tables (3NF):

1. **User**: user_id (PK), username, email, password, phone
2. **Booking**: booking_id (PK), user_id (FK), concert_id (FK), ticket_type, quantity, total_price
3. **Concert**: concert_id (PK), concert_name, concert_date, venue, total_tickets
4. **Concert_Pricing**: concert_id (PK, FK), ticket_price

This design reduces redundancy and ensures data integrity.

PROGRAM:

//Main.java

```
package application;
import javafx.application.Application;
import javafx.scene.effect.DropShadow;
import javafx.scene.paint.Color;
import javafx.scene.text.Font;
import javafx.scene.text.FontWeight;
import javafx.geometry.Insets;
import javafx.geometry.Pos;
import javafx.scene.Scene;
import javafx.scene.control.Alert;
import javafx.scene.control.Button;
import javafx.scene.control.Label;
import javafx.scene.control.PasswordField;
import javafx.scene.control.TextField;
import javafx.scene.layout.BorderPane;
import javafx.scene.layout.VBox;
import javafx.scene.paint.Color;
import javafx.scene.paint.LinearGradient;
import javafx.scene.paint.Stop;
import javafx.scene.text.Font;
import javafx.stage.Stage;
import javafx.scene.layout.Background;
import javafx.scene.layout.BackgroundFill;
import javafx.scene.layout.CornerRadii;
import javafx.scene.control.*;
import javafx.scene.image.Image;
import javafx.scene.image.ImageView;

import javafx.scene.layout.*;
import javafx.scene.text.Text;
import javafx.scene.control.ComboBox;
import javafx.scene.control.DatePicker;
import java.time.LocalDate;
import java.util.Arrays;
import java.util.ArrayList;
import java.util.List;
import javafx.scene.layout.StackPane;
import java.io.File;
import java.sql.ResultSet;

import  java.sql.Connection;
import java.sql.SQLException;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.Statement;
```

```java
public class Main extends Application {
       public static String loginn,emaill;
       public static long mobilee;
    private Stage primaryStage; // Store the primary stage for scene switching

    @Override
    public void start(Stage primaryStage) {
        this.primaryStage = primaryStage; // Initialize the primary stage

        // Start with the home scene
        showHomeScene();

        // Set the stage title
        primaryStage.setTitle("Concert Ticket Management System");
        primaryStage.show();
    }

    private void showHomeScene() {
        BorderPane root = new BorderPane();

        // Create a VBox for buttons
        VBox buttonLayout = new VBox(20); // 20 is the spacing between buttons
        buttonLayout.setAlignment(Pos.CENTER); // Center the buttons in the VBox
        buttonLayout.setStyle("-fx-padding: 20;"); // Add padding around the buttons

        // Create buttons
        Button loginButton = new Button("User Login");
        Button signUpButton = new Button("Sign Up");
        Button concertsButton = new Button("View Concerts");
        concertsButton.setVisible(false);
        // Style buttons
        styleButton(loginButton);
        styleButton(signUpButton);
        styleButton(concertsButton);

        // Set button actions
        loginButton.setOnAction(e -> showLoginScene());
        signUpButton.setOnAction(e -> showSignUpScene());
        concertsButton.setOnAction(e -> showConcertsScene());

        // Add buttons to the VBox
        buttonLayout.getChildren().addAll(loginButton, signUpButton, concertsButton);

        // Place the VBox at the center of the root layout
        root.setCenter(buttonLayout);
```

```
        // Create the scene with the root layout
        Scene scene = new Scene(root, 800, 600);

scene.getStylesheets().add(getClass().getResource("application.css").toExternalForm());

        // Set the scene on the primary stage
        primaryStage.setScene(scene);
    }


    private void showLoginScene() {

        BorderPane root = new BorderPane();

        // Set a gradient background to resemble concert lighting
        root.setBackground(new Background(new BackgroundFill(
            new LinearGradient(0, 0, 1, 1, true, null,
                new Stop(0, Color.DARKBLUE),
                new Stop(1, Color.MEDIUMPURPLE)),
            CornerRadii.EMPTY, Insets.EMPTY)));

        // Create a rectangular VBox for the login form
        VBox layout = new VBox(15);
        layout.setPadding(new Insets(20));
        layout.setAlignment(Pos.CENTER);
        layout.setPrefWidth(350);  // Set a fixed width for rectangular shape
        layout.setPrefHeight(400); // Set a fixed height to give it a rectangular shape

        // Set a background color for the login box
        layout.setBackground(new Background(new BackgroundFill(
            Color.rgb(30, 30, 30, 0.9), // Dark, semi-transparent box
            new CornerRadii(10), Insets.EMPTY)));
        layout.setStyle("-fx-border-color: #FF5733; -fx-border-width: 2px;");  // Border for
definition

        // Title label with vibrant color and larger font size
        Label title = new Label("Concert Ticket Login");
        title.setFont(Font.font("Arial", 26));
        title.setTextFill(Color.web("#FFDD44"));  // Bright yellow color for clear
visibility

        // Username and password fields with labels
        Label usernameLabel = new Label("Username:");
        usernameLabel.setFont(Font.font("Arial", 20));  // Increase font size for labels
        usernameLabel.setTextFill(Color.web("#FFDD44"));
        TextField usernameField = new TextField();
        usernameField.setPrefWidth(250);
        usernameField.setStyle("-fx-background-color: #222; -fx-text-fill: white; -fx-
border-color: #4CAF50;");

        Label passwordLabel = new Label("Password:");
        passwordLabel.setFont(Font.font("Arial", 20));  // Increase font size for labels
        passwordLabel.setTextFill(Color.web("#FFDD44"));
        PasswordField passwordField = new PasswordField();
        passwordField.setPrefWidth(250);
        passwordField.setStyle("-fx-background-color: #222; -fx-text-fill: white; -fx-
border-color: #4CAF50;");

        // Login button with vibrant color and hover effect
        Button loginButton = new Button("Login");
        loginButton.setStyle("-fx-background-color: #FF5733; -fx-text-fill: white; -fx-font-
```

```
size: 14px; " +
            "-fx-padding: 10px 20px; -fx-border-radius: 5px; -fx-background-radius: 5px;");

        loginButton.setOnMouseEntered(e -> loginButton.setStyle("-fx-background-color:
#FF8C00; -fx-text-fill: white;"));
        loginButton.setOnMouseExited(e -> loginButton.setStyle("-fx-background-color:
#FF5733; -fx-text-fill: white;"));

     // Back to Home button
        Button backButton = new Button("Back to Home");
        backButton.setStyle("-fx-background-color: #4CAF50; -fx-text-fill: white; -fx-font-
size: 14px; " +
            "-fx-padding: 10px 20px; -fx-border-radius: 5px; -fx-background-radius: 5px;");

        backButton.setOnMouseEntered(e -> backButton.setStyle("-fx-background-color:
#81C784; -fx-text-fill: white;"));
        backButton.setOnMouseExited(e -> backButton.setStyle("-fx-background-color: #4CAF50;
-fx-text-fill: white;"));

        backButton.setOnAction(e -> showHomeScene());

        // Adding all components to the layout
        layout.getChildren().addAll(title, usernameLabel, usernameField, passwordLabel,
passwordField, loginButton, backButton);
        root.setCenter(layout);

        Scene scene = new Scene(root, 800, 600);
        primaryStage.setScene(scene);




        loginButton.setOnAction(e -> {

                String url1 = "jdbc:mysql://localhost:3306/concert_booking"; // Replace with
your DB URL
               String dbUsername1 = "root"; // Your DB username
               String dbPassword1 = "ramco"; // Your DB password



             String un=usernameField.getText();
             String pa=passwordField.getText();
             String sql="select count(*) as cou from users where username='" + un + "' and
password='" + pa + "'";

             Integer val=null;
            System.out.println("Login method called with username: " + sql);  // Debugging
line


            try (Connection conn1 = DriverManager.getConnection(url1, dbUsername1,
dbPassword1);
                    Statement st = conn1.createStatement())
                    {
                    ResultSet rs1 = st.executeQuery(sql);
                    while (rs1.next())
                    {
                                  val = rs1.getInt(1);
                    }

                    rs1.close();
```

```
                    rs1 = st.executeQuery("select email,mobile from users where username='"
+ un + "'");
                    while (rs1.next())
                    {
                                 emaill= rs1.getString(1);
                                mobilee= rs1.getLong(2);
                    }

                    rs1.close();

                   // Check if the user exists and the password matches
                   if (val==1) {
                       System.out.println("Login successful!");  // Debugging line
                       Alert alert = new Alert(Alert.AlertType.INFORMATION);
                       alert.setTitle("Login Successful");
                       alert.setContentText("Welcome, " + un + "!");
                       alert.showAndWait();
                       loginn=un;
                       showConcertsScene();
                       // You can proceed with the next scene or functionality after login
                   } else {
                       System.out.println("Invalid username or password.");  // Debugging
line
                       Alert alert = new Alert(Alert.AlertType.ERROR);
                       alert.setTitle("Login Failed");
                       alert.setContentText("Invalid username or password. Please try
again.");
                       usernameField.clear();
                       passwordField.clear();

                       alert.showAndWait();
                   }

               } catch (SQLException ex) {
                   // Handle database exceptions
                   System.out.println("SQLException: " + ex.getMessage());  // Debugging
line
                   Alert alert = new Alert(Alert.AlertType.ERROR);
                   alert.setTitle("Database Error");
                   alert.setContentText("An error occurred while connecting to the
database.");
                   alert.showAndWait();
                   ex.printStackTrace();

               }

        });


        }



    private void login(String username, String password) {

            /*
             * Integer val=null; System.out.println("Login method called with username: " +
             * username); // Debugging line
             *
             * String url = "jdbc:mysql://localhost:3306/concert_booking"; // Replace with
             * your DB URL String dbUsername = "root"; // Your DB username String
```

```
dbPassword
                * = "ramco"; // Your DB password String query =
                * "SELECT * FROM userlogin WHERE username = ? AND password = ?"; // SQL query
                * for validation
                *
                * try (Connection conn = DriverManager.getConnection(url, dbUsername,
                * dbPassword); Statement st = conn.createStatement()) { ResultSet rs =
                * st.executeQuery(query); while (rs.next()) { val = rs.getInt(0); }
                *
                * rs.close();
                *
                * // Check if the user exists and the password matches if (val==1) {
                * System.out.println("Login successful!"); // Debugging line Alert alert = new
                * Alert(Alert.AlertType.INFORMATION); alert.setTitle("Login Successful");
                * alert.setContentText("Welcome, " + username + "!"); alert.showAndWait(); //
                * You can proceed with the next scene or functionality after login } else {
                * System.out.println("Invalid username or password."); // Debugging line Alert
                * alert = new Alert(Alert.AlertType.ERROR); alert.setTitle("Login Failed");
                * alert.setContentText("Invalid username or password. Please try again.");
                * alert.showAndWait(); }
                *
                * } catch (SQLException ex) { // Handle database exceptions
                * System.out.println("SQLException: " + ex.getMessage()); // Debugging line
                * Alert alert = new Alert(Alert.AlertType.ERROR);
                * alert.setTitle("Database Error");
                * alert.setContentText("An error occurred while connecting to the database.");
                * alert.showAndWait(); ex.printStackTrace(); }
                */
                    }


    private void stylePasswordField(PasswordField passwordField) {
        passwordField.setStyle(
            "-fx-background-color: #f0f0f0; " + // Light gray background
            "-fx-border-color: #ccc; " + // Light border
            "-fx-border-radius: 5px; " +
            "-fx-padding: 10px; " + // Padding inside the field
            "-fx-font-size: 14px; " + // Font size
            "-fx-pref-width: 300px;"); // Preferred width
    }

    private void styleLoginButton(Button button) {
        button.setStyle(
            "-fx-background-color: #4CAF50; " + // Green background
            "-fx-text-fill: white; " +
            "-fx-font-size: 16px; " + // Larger font size
            "-fx-padding: 10px 20px; " +
            "-fx-border-radius: 5px; " +
            "-fx-background-radius: 5px; " +
            "-fx-effect: dropshadow(gaussian, rgba(0,0,0,0.5), 5, 0.0, 0, 1);");

        // Add hover effects
        button.setOnMouseEntered(e -> button.setStyle(
            "-fx-background-color: #45a049; " + // Darker green on hover
            "-fx-text-fill: white; " +
            "-fx-font-size: 16px; " +
            "-fx-padding: 10px 20px; " +
            "-fx-border-radius: 5px; " +
            "-fx-background-radius: 5px; " +
            "-fx-effect: dropshadow(gaussian, rgba(0,0,0,0.5), 5, 0.0, 0, 1);"));

        button.setOnMouseExited(e -> styleLoginButton(button)); // Reset to original style
```

```
    }

    private void showSignUpScene() {
        BorderPane root = new BorderPane();

        // Set a gradient background for the signup scene
        root.setBackground(new Background(new BackgroundFill(
            new LinearGradient(0, 0, 1, 1, true, null,
                new Stop(0, Color.DARKBLUE),
                new Stop(1, Color.MEDIUMPURPLE)),
            CornerRadii.EMPTY, Insets.EMPTY)));

        // Create a rectangular VBox for the sign-up form
        VBox layout = new VBox(15);
        layout.setPadding(new Insets(20));
        layout.setAlignment(Pos.CENTER);
        layout.setPrefWidth(350);  // Set a fixed width for rectangular shape
        layout.setPrefHeight(450); // Set a fixed height for rectangular shape

        // Set a background color for the signup box
        layout.setBackground(new Background(new BackgroundFill(
            Color.rgb(30, 30, 30, 0.9), // Dark, semi-transparent box
            new CornerRadii(10), Insets.EMPTY)));
        layout.setStyle("-fx-border-color: #FF5733; -fx-border-width: 2px;");  // Border for
definition

        // Title label with vibrant color and larger font size
        Label title = new Label("Sign Up");
        title.setFont(Font.font("Arial", 26));
        title.setTextFill(Color.web("#FFDD44"));  // Bright yellow color

        // Username, email, and password fields with labels
        Label usernameLabel = new Label("Username:");
        usernameLabel.setFont(Font.font("Arial", 20));
        usernameLabel.setTextFill(Color.web("#FFDD44"));
        TextField usernameField = new TextField();
        usernameField.setPrefWidth(250);
        usernameField.setStyle("-fx-background-color: #222; -fx-text-fill: white; -fx-
border-color: #4CAF50;");

        Label emailLabel = new Label("Email:");
        emailLabel.setFont(Font.font("Arial", 20));
        emailLabel.setTextFill(Color.web("#FFDD44"));
        TextField emailField = new TextField();
        emailField.setPrefWidth(250);
        emailField.setStyle("-fx-background-color: #222; -fx-text-fill: white; -fx-border-
color: #4CAF50;");

        Label passwordLabel = new Label("Password:");
        passwordLabel.setFont(Font.font("Arial", 20));
        passwordLabel.setTextFill(Color.web("#FFDD44"));
        PasswordField passwordField = new PasswordField();
        passwordField.setPrefWidth(250);
        passwordField.setStyle("-fx-background-color: #222; -fx-text-fill: white; -fx-
border-color: #4CAF50;");



        Label mobileLabel = new Label("Mobile:");
        mobileLabel.setFont(Font.font("Arial", 20));
        mobileLabel.setTextFill(Color.web("#FFDD44"));
```

```
        TextField mobileField = new TextField();
        mobileField.setPrefWidth(250);
        mobileField.setStyle("-fx-background-color: #222; -fx-text-fill: white; -fx-border-
color: #4CAF50;");


        // Sign-up button with vibrant color and hover effect
        Button signUpButton = new Button("Sign Up");
        signUpButton.setStyle("-fx-background-color: #FF5733; -fx-text-fill: white; -fx-
font-size: 14px; " +
            "-fx-padding: 10px 20px; -fx-border-radius: 5px; -fx-background-radius: 5px;");

        signUpButton.setOnMouseEntered(e -> signUpButton.setStyle("-fx-background-color:
#FF8C00; -fx-text-fill: white;"));
        signUpButton.setOnMouseExited(e -> signUpButton.setStyle("-fx-background-color:
#FF5733; -fx-text-fill: white;"));

        signUpButton.setOnAction(e -> {
            // Get values from the input fields
            String username = usernameField.getText();
            String email = emailField.getText();
            String password = passwordField.getText();
            long mob=Long.parseLong(mobileField.getText());
            // Call the signUp method
            signUp(username, email, password,mob);

            // Show an alert after signing up
            Alert alert = new Alert(Alert.AlertType.INFORMATION);
            alert.setTitle("Sign Up");
            alert.setContentText("Signing up with username: " + username + " and email: " +
email);
            alert.showAndWait();
        });


        // Back button to return to the home scene
        Button backButton = new Button("Back to Home");
        backButton.setStyle("-fx-background-color: #4CAF50; -fx-text-fill: white; -fx-font-
size: 14px; " +
            "-fx-padding: 10px 20px; -fx-border-radius: 5px; -fx-background-radius: 5px;");

        backButton.setOnMouseEntered(e -> backButton.setStyle("-fx-background-color:
#81C784; -fx-text-fill: white;"));
        backButton.setOnMouseExited(e -> backButton.setStyle("-fx-background-color: #4CAF50;
-fx-text-fill: white;"));

        backButton.setOnAction(e -> showHomeScene());

        // Adding all components to the layout
        layout.getChildren().addAll(title, usernameLabel, usernameField,  passwordLabel,
passwordField,emailLabel, emailField,mobileLabel,mobileField, signUpButton, backButton);
        root.setCenter(layout);

        Scene scene = new Scene(root, 800, 600);
        primaryStage.setScene(scene);
    }
    private void signUp(String username, String email, String password,long mobile) {

       String url = "jdbc:mysql://localhost:3306/concert_booking"; // Replace with your DB
URL
       String dbUsername = "root"; // Your DB username
        String dbPassword = "ramco"; // Your DB password
```

```
        String sql="select count(*) as cou from users where username='" + username + "'";
       Integer val=null;
        System.out.println("Sign-up method called with username: " + sql);  // Debugging line

       try (Connection conn1 = DriverManager.getConnection(url, dbUsername, dbPassword);
                 Statement st = conn1.createStatement())
              {
              ResultSet rs1 = st.executeQuery(sql);
              while (rs1.next())
              {
                            val = rs1.getInt(1);
              }

              rs1.close();
             } catch (SQLException ex) {
                 // Handle database exceptions
                 System.out.println("SQLException: " + ex.getMessage());  // Debugging line
                 Alert alert = new Alert(Alert.AlertType.ERROR);
                 alert.setTitle("Database Error");
                 alert.setContentText("An error occurred while connecting to the database.");
                 alert.showAndWait();
                 ex.printStackTrace();

             }




        String query = "INSERT INTO users (username, email, password,mobile) VALUES (?, ?,
?,?)"; // SQL query for insertion

        try (Connection conn = DriverManager.getConnection(url, dbUsername, dbPassword);
             PreparedStatement pstmt = conn.prepareStatement(query)) {

             // Set the parameters for the query
             pstmt.setString(1, username);
             pstmt.setString(2, email);
             pstmt.setString(3, password);
             pstmt.setString(4, String.valueOf(mobile));
             // Execute the insert query


             // Show success or failure message based on query result
             if (val==0) {
              pstmt.executeUpdate();
                 System.out.println("User registered successfully!");  // Debugging line
                 Alert alert = new Alert(Alert.AlertType.INFORMATION);
                 alert.setTitle("Sign Up Successful");
                 alert.setContentText("User registered successfully!");
                 alert.showAndWait();
             } else {
                 System.out.println("Already user exists.Please select some other user
name");  // Debugging line
                 Alert alert = new Alert(Alert.AlertType.ERROR);
                 alert.setTitle("Sign Up Failed");
                 alert.setContentText("Already user exists.Please select some other user
name");
```

```
                alert.showAndWait();
            }
conn.close();
        } catch (SQLException ex) {
            // Handle database exceptions
            System.out.println("SQLException: " + ex.getMessage());  // Debugging line
            Alert alert = new Alert(Alert.AlertType.ERROR);
            alert.setTitle("Database Error");
            alert.setContentText("An error occurred while connecting to the database.");
            alert.showAndWait();
            ex.printStackTrace();
        }
    }


    private void bookTicket(String concertName) {
        // Example: Show an alert dialog when the user tries to book a ticket
        Alert alert = new Alert(Alert.AlertType.INFORMATION);
        alert.setTitle("Ticket Booking");
        alert.setHeaderText(null);
        alert.setContentText("You have booked a ticket for: " + concertName);
        alert.showAndWait();
    }


    private void showConcertsScene() {
        BorderPane root = new BorderPane();

        // Set a gradient background
        root.setBackground(new Background(new BackgroundFill(
                new LinearGradient(0, 0, 1, 1, true, null,
                        new Stop(0, Color.DARKSLATEBLUE),
                        new Stop(1, Color.DEEPPINK)),
                CornerRadii.EMPTY, Insets.EMPTY)));

        // Create an HBox for concert layout to arrange them horizontally
        HBox concertLayout = new HBox(30); // Horizontal spacing between concert items
        concertLayout.setAlignment(Pos.CENTER); // Center the HBox layout
        concertLayout.setPadding(new Insets(20));

        // Updated concert data
        String[] concertNames = {
            "Rhythms of Chennai: Arijit Singh Live",
            "Soul Beats: Neha Kakkar in Concert",
            "Symphony of Sounds: A. R. Rahman",
            "Bollywood Beats: Badshah's Live Performance"
        };
        String[] concertDates = {
            "Date: Dec 15, 2024",
            "Date: Jan 20, 2025",
            "Date: Feb 10, 2025",
            "Date: Mar 5, 2025"
        };
        String[] concertVenues = {
            "Nehru Indoor Stadium, Chennai",
            "Phoenix Marketcity, Chennai",
            "YMCA Grounds, Chennai",
            "VGP Universal Kingdom, Chennai"
        };
        String[] imagePaths = {

"https://media.insider.in/image/upload/c_crop,g_custom/v1676965539/cniesjacjimsjfeuuzqc.png"
```

```
, // Arijit Singh
            "https://encrypted-
tbn0.gstatic.com/images?q=tbn:ANd9GcR09PvLnPFtNYCydZBIaVAVJy1BxdL9yoZm8Q&s", // Neha Kakkar
            "https://i.ytimg.com/vi/n-acwP5pwlo/maxresdefault.jpg", // A. R. Rahman
            "https://encrypted-
tbn0.gstatic.com/images?q=tbn:ANd9GcSAcYuZH6tYSUXkMb8qaJwJtLTRFL0iRGSUqw&s" // Badshah
        };
        String[] locationLinks = {

"https://www.google.com/maps/place/Jawaharlal+Nehru+Stadium/@13.0857373,80.2691727,17z/data=
!3m1!4b1!4m6!3m5!1s0x3a5265fbe6a909ab:0x5a6046dfc9f0d784!8m2!3d13.0857373!4d80.2717476!16zL2
0vMDc4YzV5?entry=ttu&g_ep=EgoyMDI0MTAyOS4wIKXMDSoASAFQAw%3D%3D", // Arijit Singh

"https://www.google.com/maps/place/Phoenix+Marketcity/@12.9929399,80.2152932,17z/data=!3m1!4
b1!4m6!3m5!1s0x3a526763b48e60eb:0xdb3a29009036c251!8m2!3d12.9929399!4d80.2178681!16s%2Fg%2F1
q54w6krf?entry=ttu&g_ep=EgoyMDI0MTAyOS4wIKXMDSoASAFQAw%3D%3D", // Neha Kakkar

"https://www.google.com/maps/place/YMCA+Ground/@13.0243033,80.2340264,17z/data=!3m1!4b1!4m6!
3m5!1s0x3a5267ae8bbecdcf:0x59928b97b499c64b!8m2!3d13.0243033!4d80.2366013!16s%2Fg%2F1hcbjbjz
y?entry=ttu&g_ep=EgoyMDI0MTAyOS4wIKXMDSoASAFQAw%3D%3D", // A. R. Rahman

"https://www.google.com/maps/place/VGP+Universal+Kingdom/@12.914221,80.2479491,17z/data=!3m1
!4b1!4m6!3m5!1s0x3a525ce7cfa58535:0x96c3e0481b851d2f!8m2!3d12.914221!4d80.250524!16s%2Fm%2F0
5q6np0?entry=ttu&g_ep=EgoyMDI0MTAyOS4wIKXMDSoASAFQAw%3D%3D" // Badshah
        };



        String url1 = "jdbc:mysql://localhost:3306/concert_booking"; // Replace with your DB
URL
        String dbUsername1 = "root"; // Your DB username
        String dbPassword1 = "ramco"; // Your DB password
        String sql="select *  from concertmaster ";



     try (Connection conn3 = DriverManager.getConnection(url1, dbUsername1, dbPassword1);
             Statement st = conn3.createStatement())
             {
             ResultSet rs1 = st.executeQuery(sql);
             while (rs1.next())
             {

                     // Image view for concert poster
                ImageView posterView = new ImageView();
                posterView.setFitWidth(200);
                posterView.setFitHeight(150);
                posterView.setPreserveRatio(true);

                try {
                    Image posterImage = new Image(rs1.getString(6));
                    posterView.setImage(posterImage);
                } catch (Exception e) {
                    System.out.println("Error loading image: " + e.getMessage());
                }

                // Label for concert details
                Label concertTitle = new Label(rs1.getString(2));
                concertTitle.setFont(Font.font("Arial", FontWeight.BOLD, 16));
                concertTitle.setTextFill(Color.WHITE);

                Label concertDate = new Label(rs1.getString(3));
```

```
                concertDate.setFont(Font.font("Arial", FontWeight.NORMAL, 14));
                concertDate.setTextFill(Color.LIGHTGRAY);

                Label concertVenue = new Label("Venue: " + rs1.getString(4));
                concertVenue.setFont(Font.font("Arial", FontWeight.NORMAL, 14));
                concertVenue.setTextFill(Color.LIGHTGRAY);

                // Hyperlink for venue location
                Hyperlink venueLocationLink = new Hyperlink("View on Map");
                venueLocationLink.setOnAction(e -> {
                    getHostServices().showDocument(locationLinks[0]); // Open in the default
web browser
                });

                // Button to book tickets
                Button bookTicketButton = new Button("Book Ticket");
                bookTicketButton.setStyle("-fx-background-color: #FF5733; -fx-text-fill:
white; -fx-font-weight: bold; -fx-border-radius: 5; -fx-padding: 10 15;");
                int conid=rs1.getInt(1);
                String conname=rs1.getString(2);
                bookTicketButton.setOnAction(e -> showTicketOptions(conid,conname));

                // Create a VBox for each concert entry
                VBox concertEntry = new VBox(10, posterView, concertTitle, concertDate,
concertVenue,  bookTicketButton);
                concertEntry.setAlignment(Pos.CENTER);
                concertEntry.setStyle("-fx-padding: 20; -fx-background-color: rgba(255, 255,
255, 0.1); -fx-border-radius: 10; -fx-background-radius: 10; -fx-effect:
dropshadow(gaussian, rgba(0,0,0,0.3), 10, 0, 0, 0);");

                // Add concert entry to the HBox
                concertLayout.getChildren().add(concertEntry);


            // Add the concert layout to the center of the root layout
            root.setCenter(concertLayout);

            // Create a Back button to return to the home scene
            Button backButton = new Button("Back to Home");
            backButton.setStyle("-fx-background-color: #444; -fx-text-fill: white; -fx-font-
weight: bold; -fx-padding: 10 20;");
            backButton.setOnAction(e -> showHomeScene());
            root.setBottom(backButton);
            BorderPane.setAlignment(backButton, Pos.CENTER);

            // Create the scene with the root layout
            Scene scene = new Scene(root, 1000, 600);
            primaryStage.setScene(scene);

             }

             rs1.close();


             } catch (SQLException ex) {
            // Handle database exceptions
            System.out.println("SQLException: " + ex.getMessage());  // Debugging line
            Alert alert = new Alert(Alert.AlertType.ERROR);
            alert.setTitle("Database Error");
            alert.setContentText("An error occurred while connecting to the database.");
            alert.showAndWait();
            ex.printStackTrace();
```

```
            }
        }


private void showTicketOptions(int conid,String concertName) {

    // Create a dialog to show ticket options
    Dialog<ButtonType> dialog = new Dialog<>();
    dialog.setTitle("Select Ticket Type for " + concertName);
    dialog.setHeaderText("Choose your ticket type and enter your details:");

    // Create a VBox for the dialog content
    VBox dialogPane = new VBox(10);
    dialogPane.setPadding(new Insets(20));



    // Ticket options with prices
    String[] ticketTypes = {"Gold - ₹3000", "Silver - ₹2000", "Bronze - ₹1000"};
    ComboBox<String> ticketTypeDropdown = new ComboBox<>();
    ticketTypeDropdown.getItems().addAll(ticketTypes);
    ticketTypeDropdown.setPromptText("Select Ticket Type");

    // Ticket quantity selection
    Label quantityLabel = new Label("Number of Tickets:");
    Spinner<Integer> ticketQuantitySpinner = new Spinner<>(1, 10, 1); // Minimum 1 ticket,
maximum 10 tickets

    // User details fields
    TextField connamee = new TextField();
    connamee.setText(concertName);
    connamee.setDisable(true);
    TextField nameField = new TextField();
    nameField.setPromptText("Enter your name");
    nameField.setText(loginn);
    TextField emailField = new TextField();
    emailField.setPromptText("Enter your email");
    emailField.setText(emaill);
    TextField phoneField = new TextField();
    phoneField.setPromptText("Enter your phone number");
    phoneField.setText(String.valueOf(mobilee));

    // Add all elements to the dialog pane
    dialogPane.getChildren().addAll(new Label("Concert Name"),connamee,
        new Label("Ticket Types:"), ticketTypeDropdown,
        quantityLabel, ticketQuantitySpinner,
        new Label("Your Details:"),
        new Label("Name:"), nameField,
        new Label("Email:"), emailField,
        new Label("Phone Number:"), phoneField
    );

    // Create buttons for the dialog
    ButtonType bookButton = new ButtonType("Book Ticket", ButtonBar.ButtonData.OK_DONE);
    dialog.getDialogPane().getButtonTypes().addAll(bookButton, ButtonType.CANCEL);
    dialog.getDialogPane().setContent(dialogPane);

    // Handle the booking when the book button is clicked
    dialog.setResultConverter(dialogButton -> {
        if (dialogButton == bookButton) {
            String selectedTicket = ticketTypeDropdown.getValue();
            int quantity = ticketQuantitySpinner.getValue();
```

```
            String name = nameField.getText();
            String email = emailField.getText();
            String phone = phoneField.getText();




            // Validate email and phone number
            if (selectedTicket != null && !name.isEmpty() && isValidEmail(email) &&
isValidPhone(phone)) {
                // Extract the price from the selected ticket type
                int ticketPrice = Integer.parseInt(selectedTicket.split("₹")[1].replace(",",
""));
                int totalPrice = ticketPrice * quantity;

                // Show confirmation alert with total price and user details
                Alert confirmationAlert = new Alert(Alert.AlertType.INFORMATION);
                confirmationAlert.setTitle("Booking Details");
                confirmationAlert.setHeaderText("Booking Details are :");
                confirmationAlert.setContentText(
                    "Ticket Type1: " + selectedTicket + "\n" +
                    "Concert: " + concertName + "\n" +
                    "Quantity: " + quantity + "\n" +
                    "Total Price: ₹" + totalPrice + "\n\n" +
                    "Booked By:\nName: " + name + "\nEmail: " + email + "\nPhone: " + phone
                );
                confirmationAlert.showAndWait();
            } else {
                // Show warning if required fields are not filled or invalid
                Alert warningAlert = new Alert(Alert.AlertType.WARNING);
                warningAlert.setTitle("Invalid Information");
                warningAlert.setHeaderText("Please check your details.");
                warningAlert.setContentText("Ensure all fields are filled correctly:\n"
                                            + "- Name should not be empty\n"
                                            + "- Email should be in the correct format\n"
                                            + "- Phone number should contain only digits and
be 10 digits long.");
                warningAlert.showAndWait();
                System.exit(0);
            }



            int totaltickets = 0,bookedtickets = 0,availabletickets=0;

            String url = "jdbc:mysql://localhost:3306/concert_booking"; // Replace with your
DB URL
            String dbUsername = "root"; // Your DB username
             String dbPassword = "ramco"; // Your DB password
             String sql;


             sql=" select totaltickets from concertmaster where cid=" + conid;

             try (Connection conn1 = DriverManager.getConnection(url, dbUsername,
dbPassword);
                     Statement st = conn1.createStatement())
                    {
                    ResultSet rs1 = st.executeQuery(sql);
                    while (rs1.next())
                    {
                            totaltickets = rs1.getInt(1);
```

```
                    }

                    rs1.close();

                    sql="select cid,sum(nooftickets) from concerttransaction where cid=" +
conid + "  group by cid";
                    rs1 = st.executeQuery(sql);
                    while (rs1.next())
                    {
                           bookedtickets = rs1.getInt(2);
                    }

                    rs1.close();

                    availabletickets=totaltickets-bookedtickets;


                } catch (SQLException ex) {
                    // Handle database exceptions
                    System.out.println("SQLException: " + ex.getMessage());  // Debugging
line
                    Alert alert = new Alert(Alert.AlertType.ERROR);
                    alert.setTitle("Database Error");
                    alert.setContentText("An error occurred while connecting to the
database.");
                    alert.showAndWait();
                    ex.printStackTrace();

                }

             String query = "INSERT INTO concerttransaction (cid, bookedby,
tickettype,nooftickets) VALUES (?, ?, ?,?)"; // SQL query for insertion

             try (Connection conn2 = DriverManager.getConnection(url, dbUsername,
dbPassword);
                  PreparedStatement pstmt = conn2.prepareStatement(query)) {

                 // Set the parameters for the query
                 pstmt.setInt(1, conid);
                 pstmt.setString(2, loginn);
                 pstmt.setString(3, selectedTicket);
                 pstmt.setInt(4, quantity);


                 int rowsAffected = 0;
                System.out.print("Tot"+totaltickets);
                System.out.print("Booked"+bookedtickets);
                System.out.print("Avai"+availabletickets);

                 // Execute the insert query
                 if(availabletickets>=quantity)
                {
                  rowsAffected = pstmt.executeUpdate();

                 }

                 // Show success or failure message based on query result
                 if (rowsAffected > 0) {
                     System.out.println("Tickets Booked successfully!"+availabletickets);
// Debugging line
                     Alert alert = new Alert(Alert.AlertType.INFORMATION);
                     alert.setTitle("Booking Status");
```

```
                    alert.setContentText("Tickets Booked successfully!");
                    alert.showAndWait();
                } else {
                    System.out.println("Tickets not availabe.");  // Debugging line
                    Alert alert = new Alert(Alert.AlertType.INFORMATION);
                    alert.setTitle("Booking Status");
                    alert.setContentText("Tickets not availabe. Please try for other
dates");
                    alert.showAndWait();
                }
     conn2.close();
            } catch (SQLException ex) {
                // Handle database exceptions
                System.out.println("SQLException: " + ex.getMessage());  // Debugging line
                Alert alert = new Alert(Alert.AlertType.ERROR);
                alert.setTitle("Database Error");
                alert.setContentText("An error occurred while connecting to the
database.");
                alert.showAndWait();
                ex.printStackTrace();
            }

        }
        return null;
    });

    dialog.showAndWait();
}

private void storeTicketBooking(String concertName, String ticketType, int quantity, int
totalPrice, String name, String email, String phone) {
    String sql = "INSERT INTO tickets (concert_name, ticket_type, quantity, total_price,
name, email, phone) VALUES (?, ?, ?, ?, ?, ?, ?)";

    try (PreparedStatement stmt = connection.prepareStatement(sql)) {
        stmt.setString(1, concertName);
        stmt.setString(2, ticketType);
        stmt.setInt(3, quantity);
        stmt.setInt(4, totalPrice);
        stmt.setString(5, name);
        stmt.setString(6, email);
        stmt.setString(7, phone);

        int rowsAffected = stmt.executeUpdate();

        if (rowsAffected > 0) {
            System.out.println("Booking successful! Data saved in the database.");
        } else {
            System.out.println("Failed to save booking in the database.");
        }
    } catch (SQLException e) {
        System.out.println("Error saving booking: " + e.getMessage());
    }
}



// Email validation method
private boolean isValidEmail(String email) {
    // Basic email pattern for validation
    String emailPattern = "^[\\w-\\.]+@([\\w-]+\\.)+[\\w-]{2,4}$";
    return email.matches(emailPattern);
```

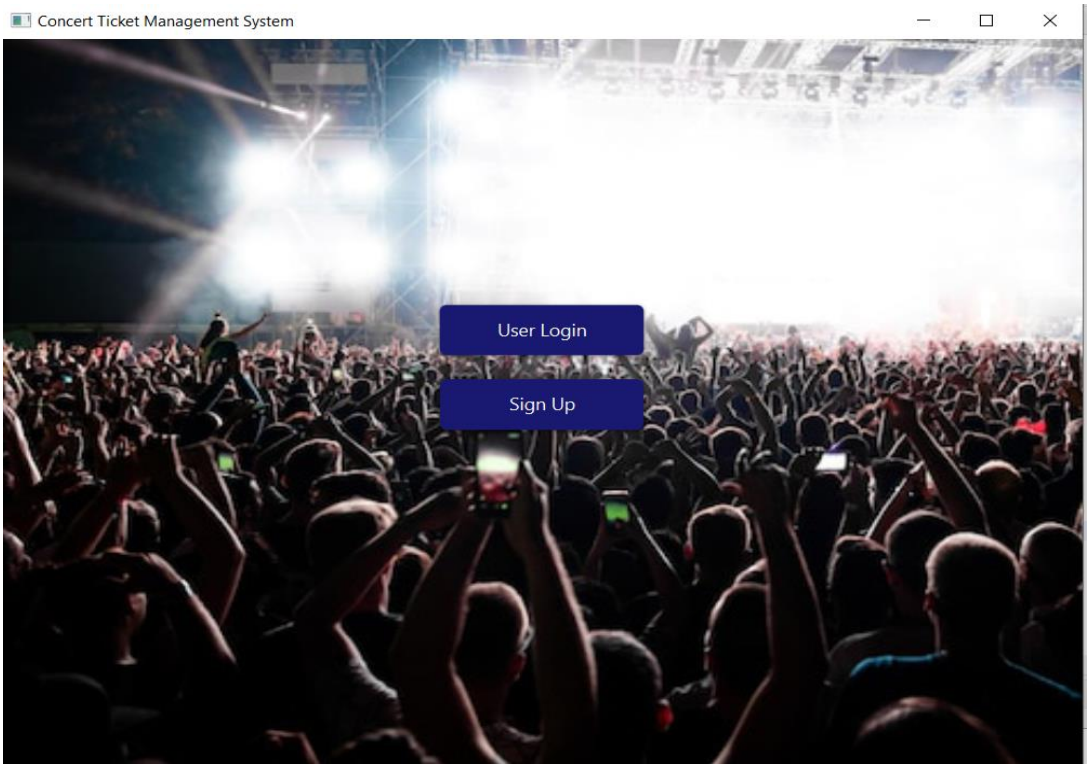
```java
}

// Phone number validation method
private boolean isValidPhone(String phone) {
    // Check if phone has only digits and is 10 characters long
    return phone.matches("\\d{10}");
}




    private void styleButton(Button button)
    {
        button.setPrefWidth(150); // Set preferred width
        button.setStyle("-fx-font-size: 14; -fx-padding: 10;");
        button.setStyle(
            "-fx-background-color: #191970; " +
            "-fx-text-fill: white; " +
            "-fx-font-size: 14px; " +
            "-fx-padding: 10px 20px; " +
            "-fx-border-radius: 5px; " +
            "-fx-background-radius: 5px; " +
            "-fx-effect: dropshadow(gaussian, rgba(0,0,0,0.5), 5, 0.0, 0, 1);");

        button.setOnMouseEntered(e -> button.setStyle(
            "-fx-background-color: #005B99; " +
            "-fx-text-fill: white; " +
            "-fx-font-size: 14px; " +
            "-fx-padding: 10px 20px; " +
            "-fx-border-radius: 5px; " +
            "-fx-background-radius: 5px; " +
            "-fx-effect: dropshadow(gaussian, rgba(0,0,0,0.5), 5, 0.0, 0, 1);"));

        button.setOnMouseExited(e -> styleButton(button));



    }

    public static void main(String[] args)
    {

        launch(args);
    }


}
```

//application.css

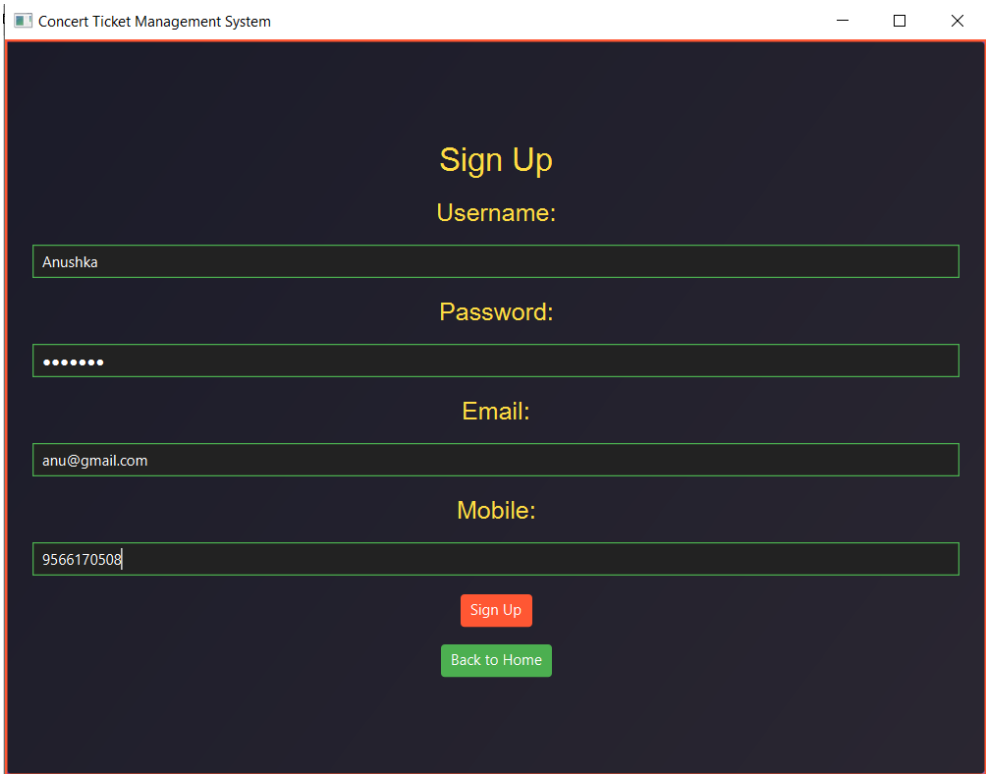
```
/* Setting background image for BorderPane */
.root {
    -fx-background-image: url("https://img.freepik.com/free-photo/back-view-excited-audience-
with-arms-raised-cheering-front-stage-music-concert-copy-space_637285-538.jpg");
    -fx-background-size: cover; /* Makes the image cover the entire window */
    -fx-background-position: center; /* Centers the image */
}


.button {
    -fx-background-color: #5C6BC0; /* Background color */
    -fx-text-fill: white; /* Text color */
    -fx-font-size: 14px; /* Font size */
    -fx-padding: 10px 20px; /* Padding */
    -fx-border-radius: 5px; /* Rounded corners */
    -fx-background-radius: 5px; /* Rounded background */
    -fx-effect: dropshadow(gaussian, rgba(0,0,0,0.5), 5, 0.0, 0, 1); /* Shadow effect */
}

.button:hover {
    -fx-background-color: #3F51B5; /* Darker background on hover */
}

/* application.css */

/* Style for the login scene */

/* styles.css */
.login-background {
    -fx-background-image: url("https://cdn.prod.website-
files.com/64ad227a3e66387fc5d89320/65cc59af2da41a018f861fae_concert-background-
dd0syeox7rmi78l0.jpg");
    -fx-background-size: cover; /* Ensures the image covers the entire pane */
    -fx-background-position: center; /* Centers the image */

}


/* Optional: Style for the buttons */
.button {
    -fx-background-color: #4CAF50; /* Green background */
    -fx-text-fill: white; /* White text */
    -fx-font-size: 14px; /* Font size */
    -fx-padding: 10px; /* Padding inside the button */
}

/* Optional: Style for labels */
.label {
    -fx-font-size: 16px; /* Font size for labels */
    -fx-text-fill: #333; /* Dark text color */
}
```

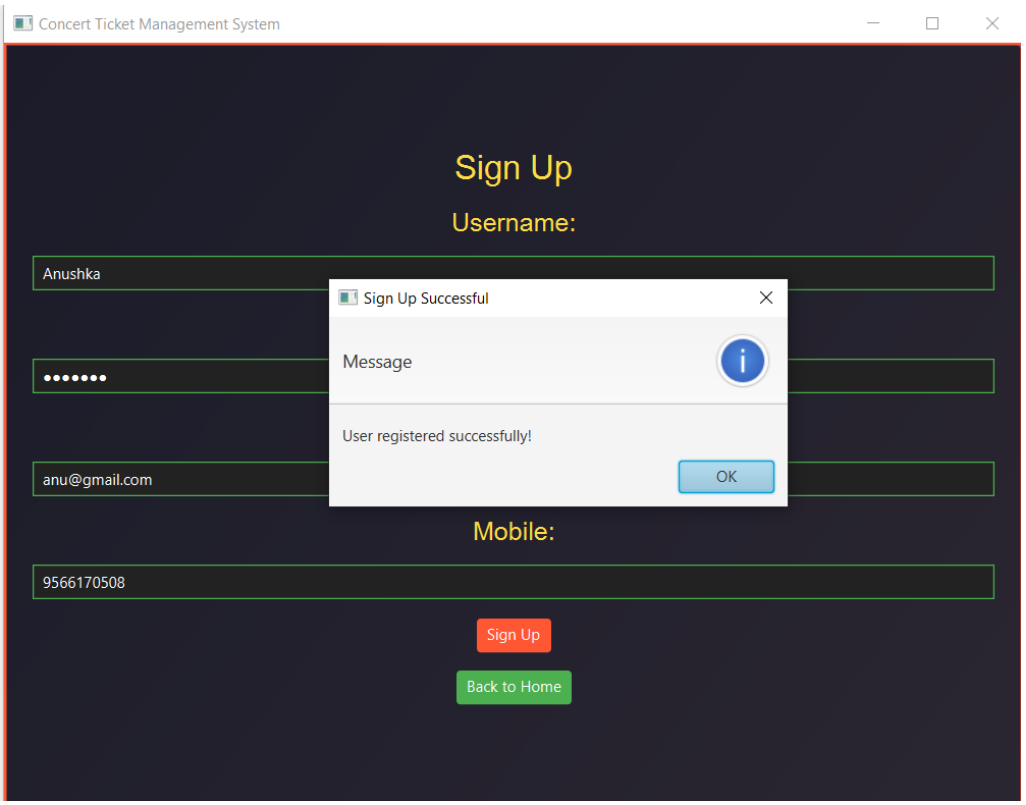
SNAPSHOTS

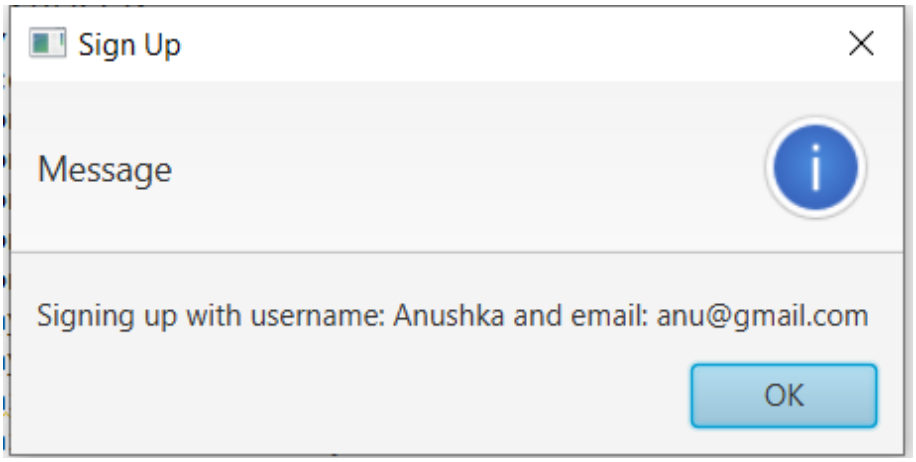
HOME PAGE



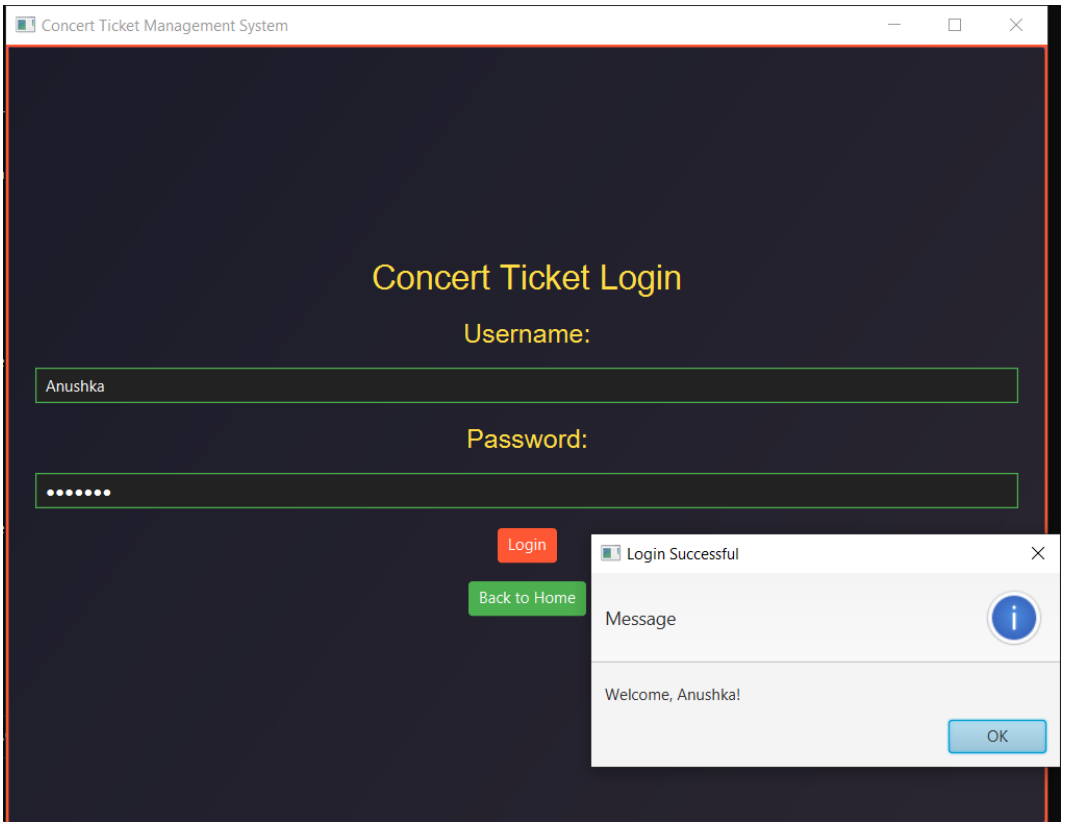
SIGN UP PAGE



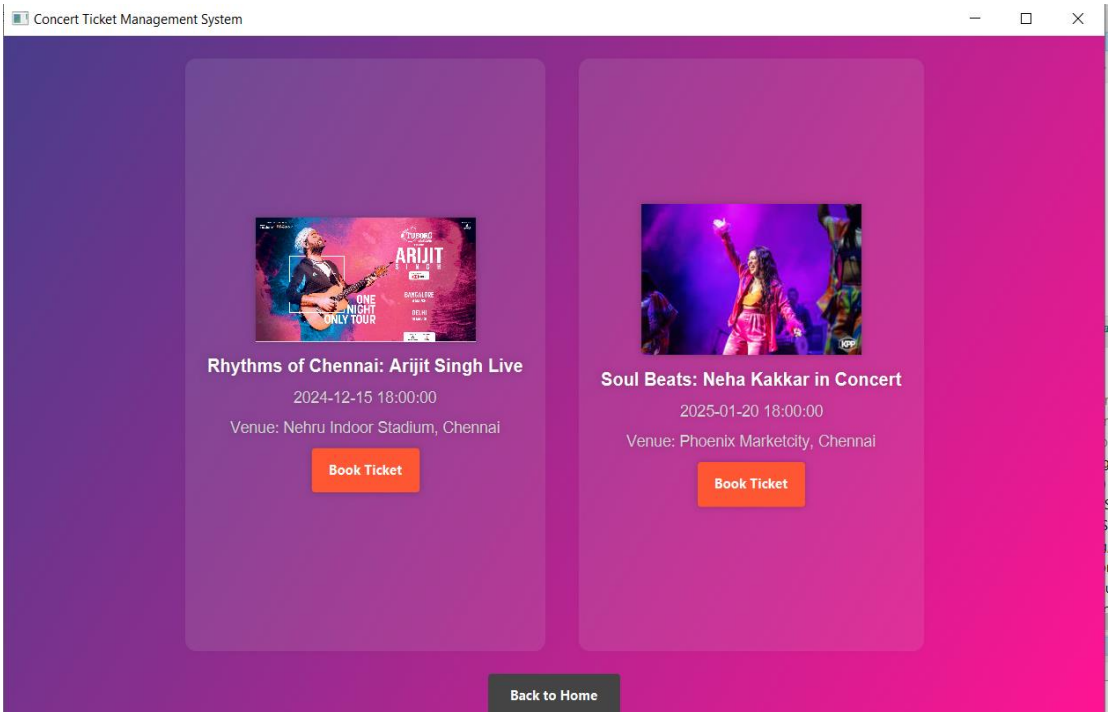

Concert Ticket Management System
Sign Up
Username:
Anushka
Sign Up Successful
Message
User registered successfully!
OK
anu@gmail.com
Mobile:
9566170508
Sign Up
Back to Home

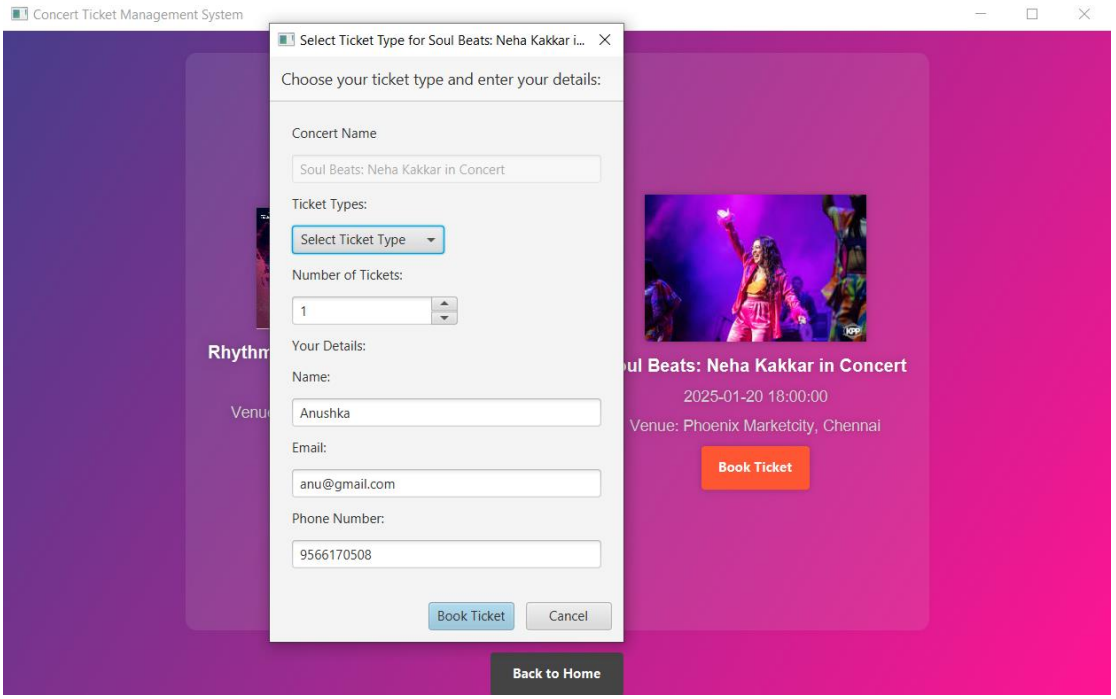

Sign Up
Message
Signing up with username: Anushka and email: anu@gmail.com
OK

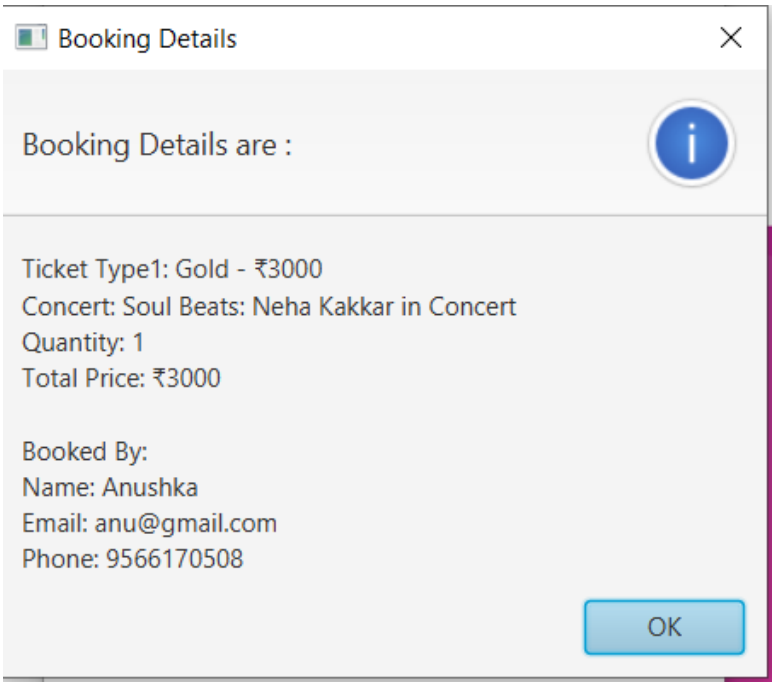
LOGIN PAGE

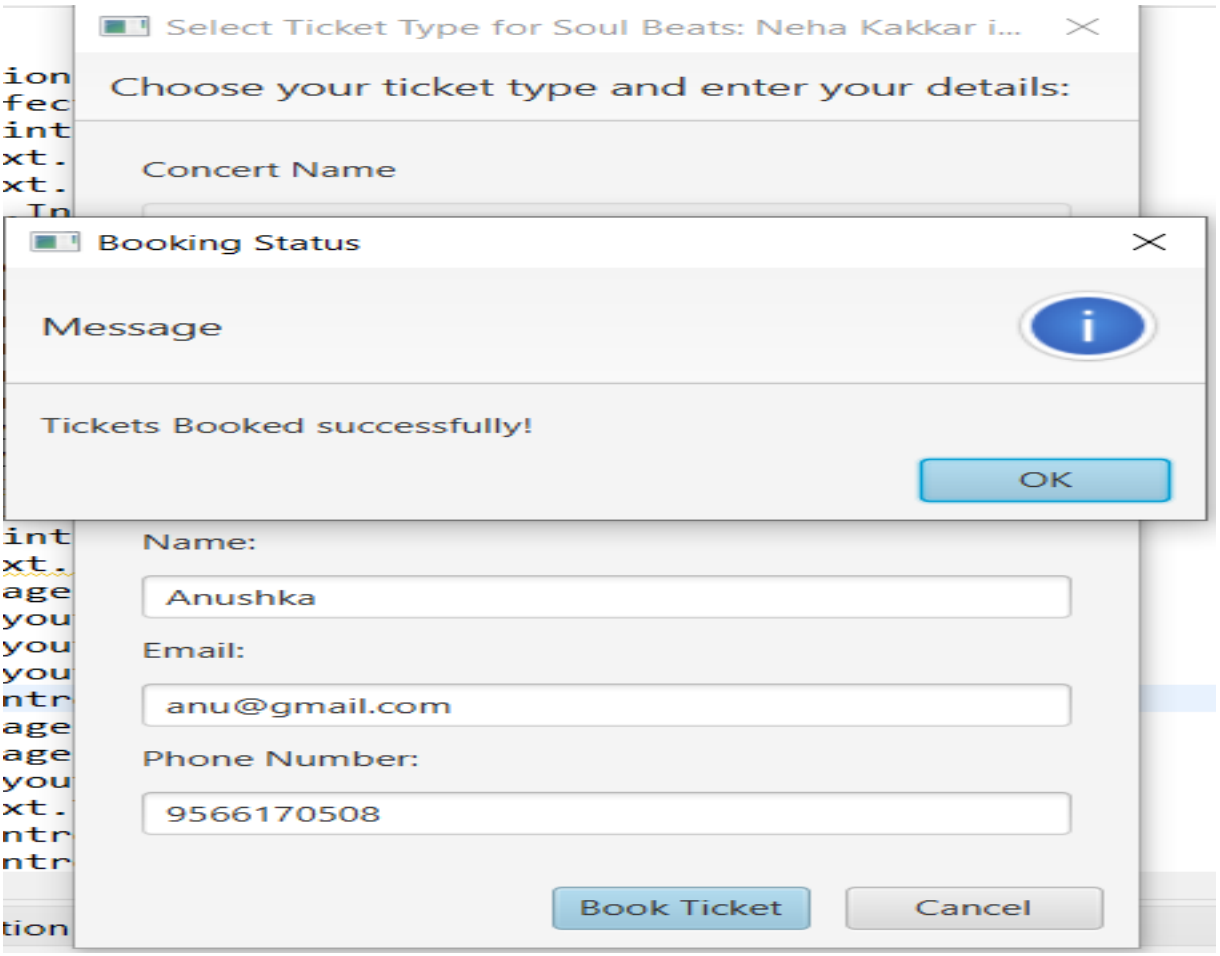


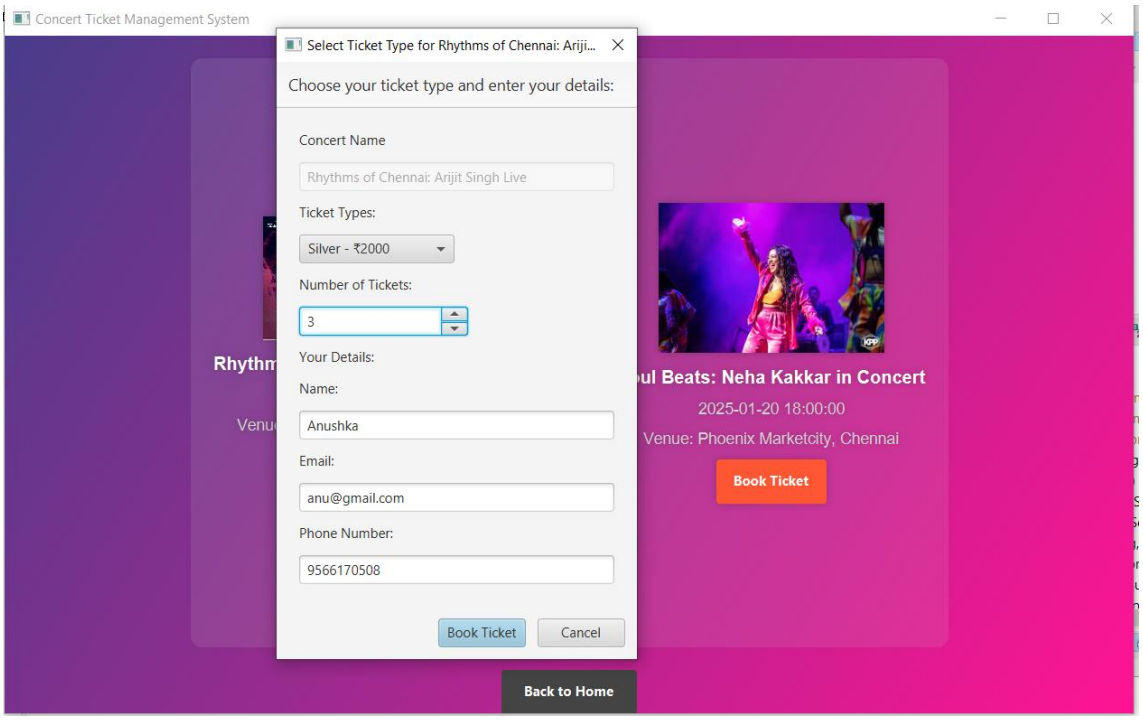
CONCERT PAGE

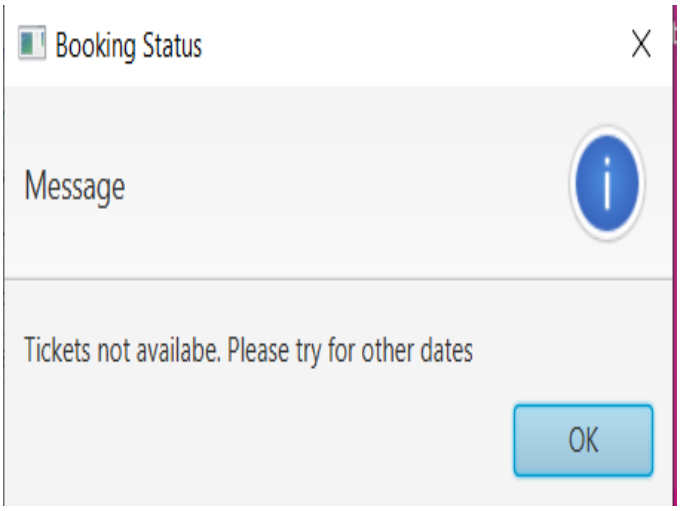



Concert Ticket Management System
Select Ticket Type for Soul Beats: Neha Kakkar i...
Choose your ticket type and enter your details:
Concert Name
Soul Beats: Neha Kakkar in Concert
Ticket Types:
Select Ticket Type
Number of Tickets:
1
Your Details:
Name:
Anushka
Email:
anu@gmail.com
Phone Number:
9566170508
Book Ticket
Cancel
Rhythm
Venu
ul Beats: Neha Kakkar in Concert
2025-01-20 18:00:00
Venue: Phoenix Marketcity, Chennai
Book Ticket
Back to Home


Booking Details
Booking Details are :
Ticket Type1: Gold - ₹3000
Concert: Soul Beats: Neha Kakkar in Concert
Quantity: 1
Total Price: ₹3000
Booked By:
Name: Anushka
Email: anu@gmail.com
Phone: 9566170508
OK


Select Ticket Type for Soul Beats: Neha Kakkar i...
Choose your ticket type and enter your details:
Concert Name
Booking Status
Message
Tickets Booked successfully!
OK
Name:
Anushka
Email:
anu@gmail.com
Phone Number:
9566170508
Book Ticket
Cancel


Concert Ticket Management System
Select Ticket Type for Rhythms of Chennai: Ariji...
Choose your ticket type and enter your details:
Concert Name
Rhythms of Chennai: Arijit Singh Live
Ticket Types:
Silver - ₹2000
Number of Tickets:
3
Your Details:
Name:
Anushka
Email:
anu@gmail.com
Phone Number:
9566170508
Book Ticket
Cancel
Rhythm
Venu
ul Beats: Neha Kakkar in Concert
2025-01-20 18:00:00
Venue: Phoenix Marketcity, Chennai
Book Ticket
Back to Home


Booking Status
Message
Tickets not availabe. Please try for other dates
OK

RESULTS AND DISCUSSION

The Concert Booking Management System provides a seamless experience for users to sign up, log in, browse concerts, and book tickets. Users can easily register with basic details like username, email, and password. After logging in, they can browse available concerts, select ticket types, and book tickets. The system checks for ticket availability, generates a bill if seats are available, and notifies users of sold-out concerts with an error message.

The system is user-friendly and ensures accurate ticket availability, but challenges like **concurrency management** and **scalability** should be addressed to handle high traffic and simultaneous bookings effectively.

CONCLUSION

The **Concert Booking Management System** efficiently manages concert reservations, offering a secure and user-friendly interface for users to book tickets. With real-time availability checks and error handling, the system ensures a smooth experience. Future improvements can focus on handling high-demand scenarios and enhancing user experience with personalized features.

REFERENCES

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Learn MySQL Tutorial - javatpoint

2 **JavaFX Tutorial**

JavaFX Tutorial - javatpoint