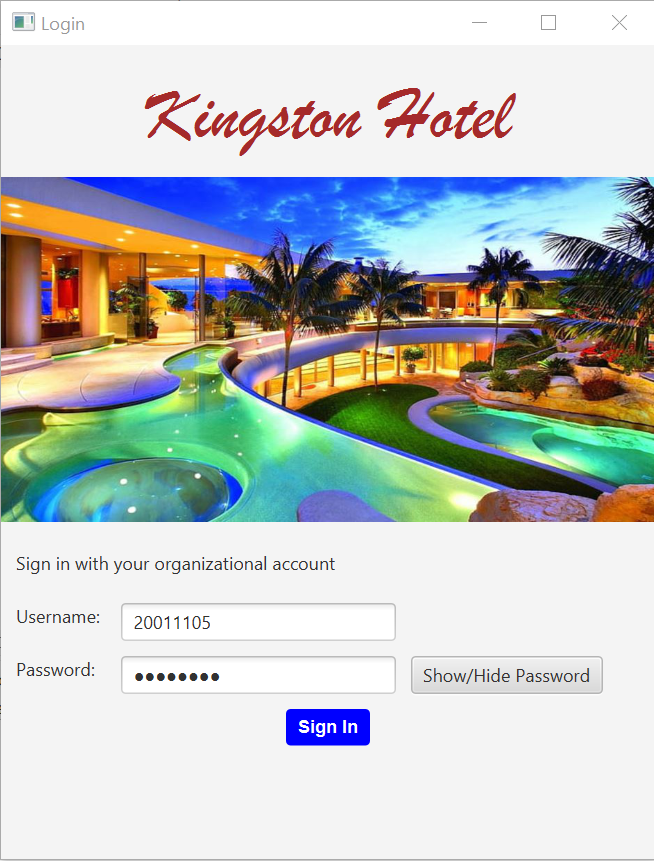
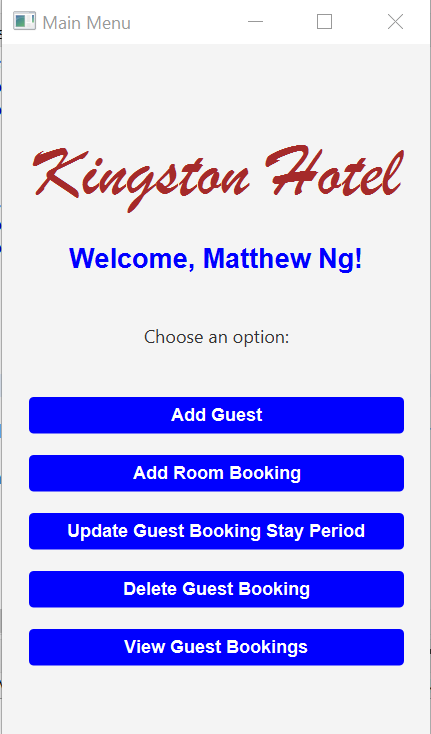
|  |  |
| --- | --- |
| **C209 Advanced Object-Oriented Programming**  **AY2021 Semester 1**  **Graded (ESE) Assignment Part 2 [FINAL]**  **Section C Report** | |
| **Student name** | **Matthew Ng Wei Chen** |
| **Student ID** | **20011105** |
| **Class (e.g. D1-W65A)** | **C209-1D-E66E-A** |
| **Class Diagram for Project 3**  Draw or paste your class diagram in the space below | |
|  | |
| **Database Schema Enhancement Declaration**  Select the appropriate option with a  | |
| * My App uses the Database Tables provided WITHOUT enhancements   ** My App uses Database Tables with my own enhancements** | |
| **-- End of Report --** | |

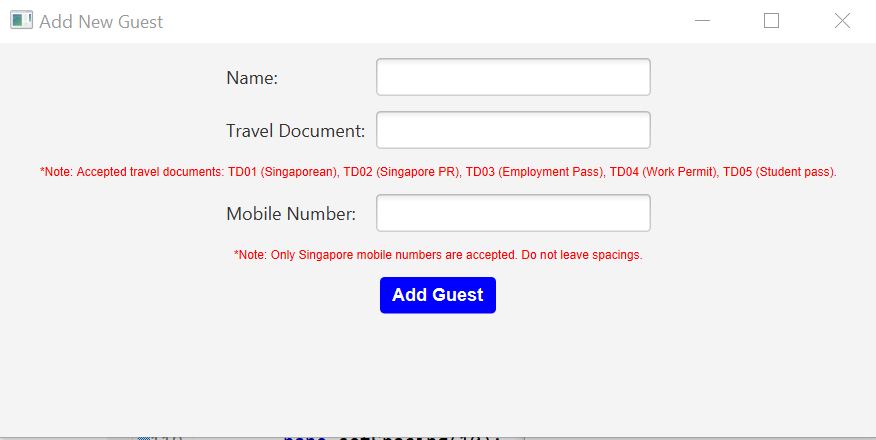
**You can login using these information**

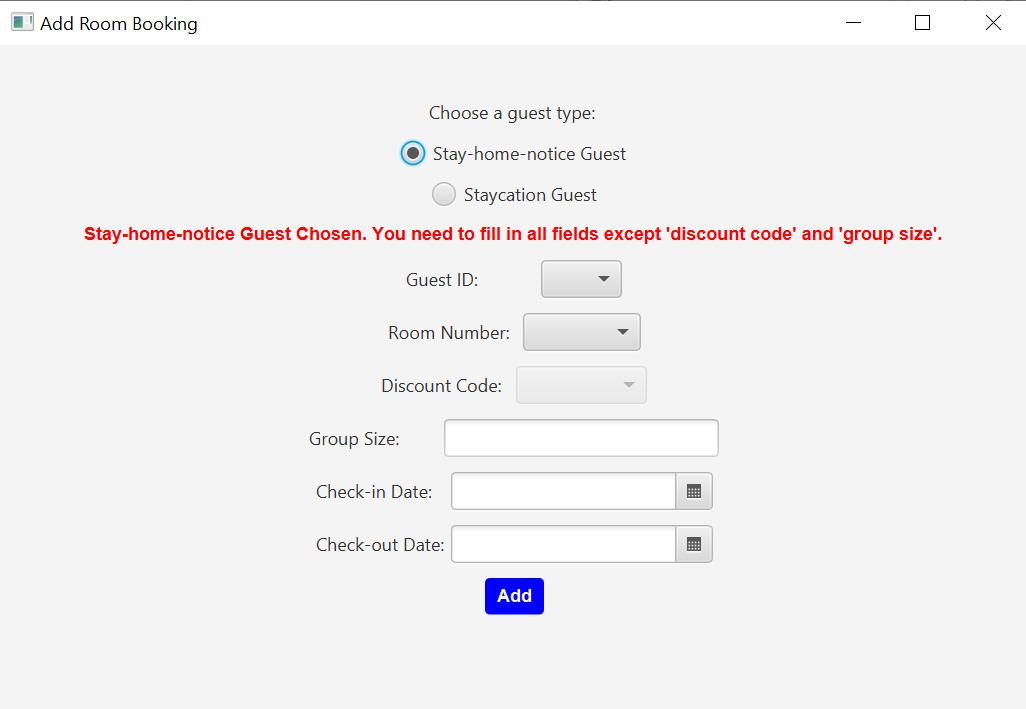
**Username: 20011105**

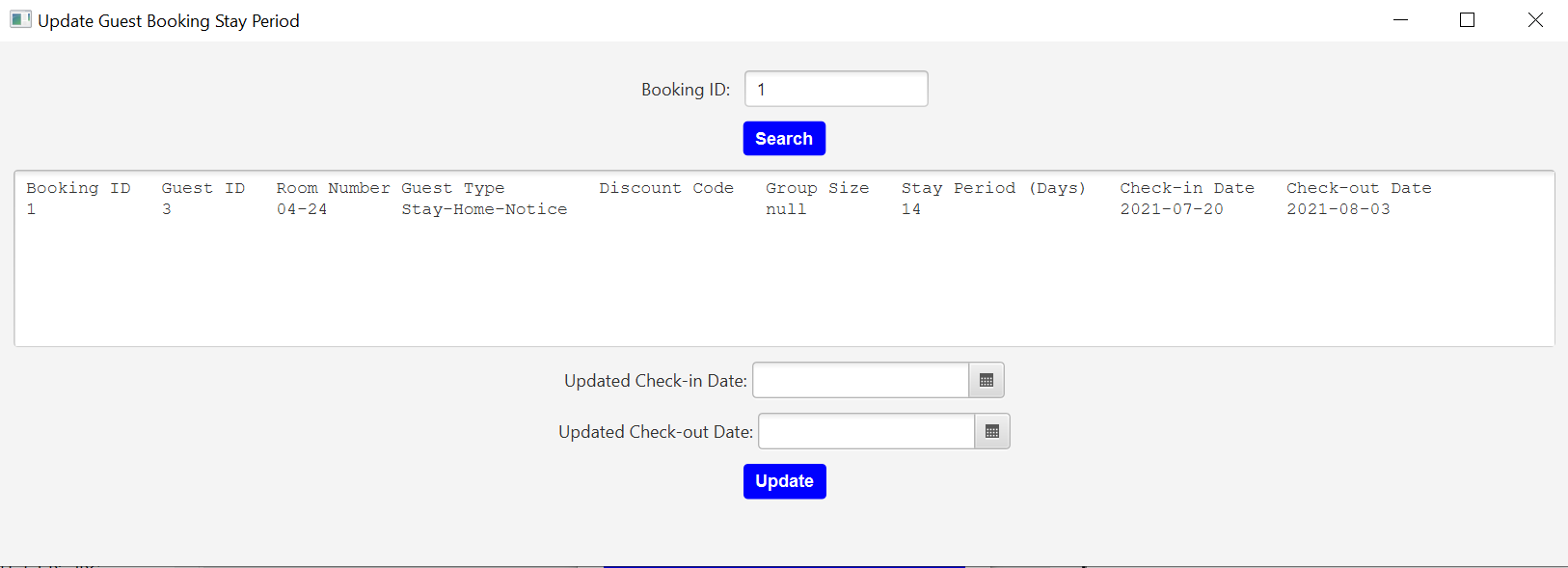
**Password: Pass111!**

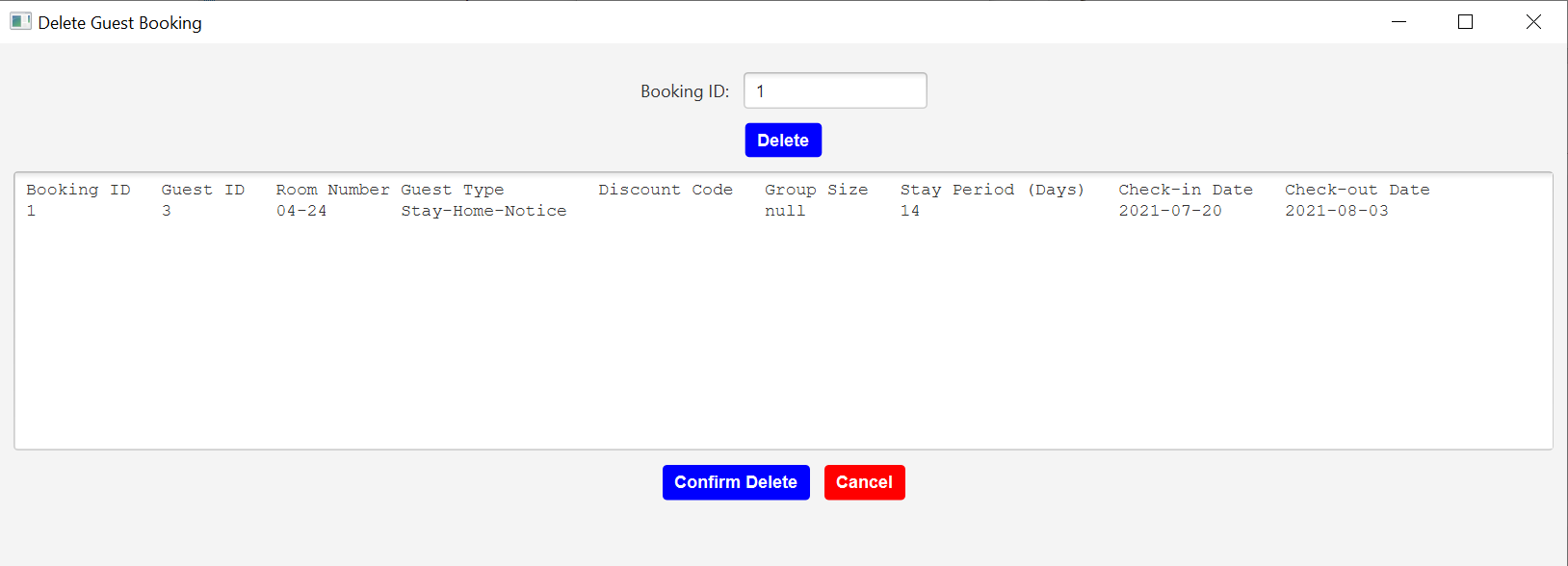


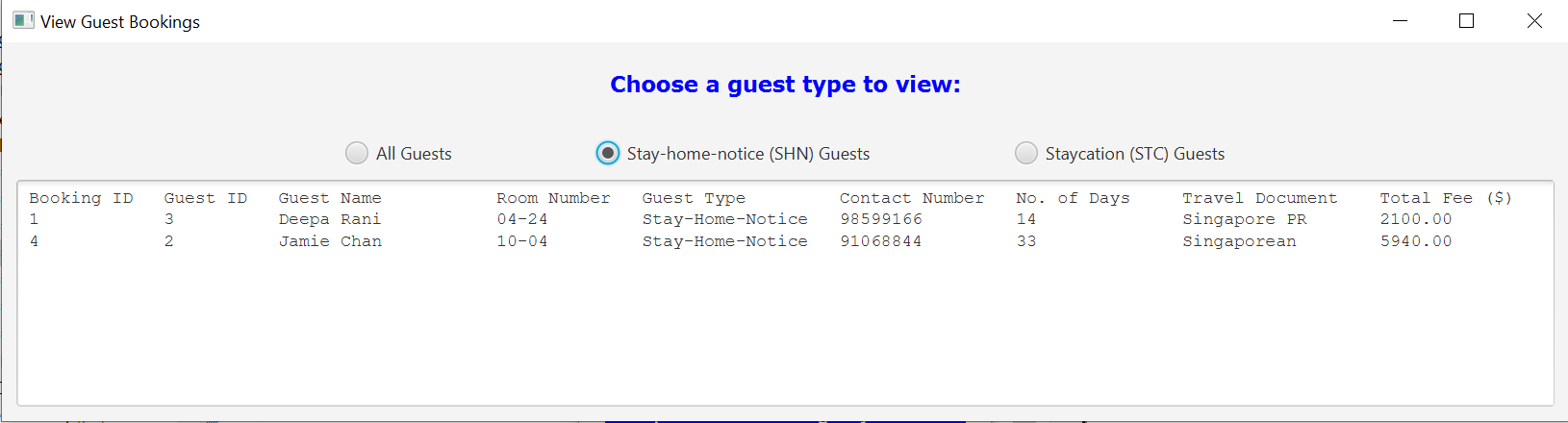




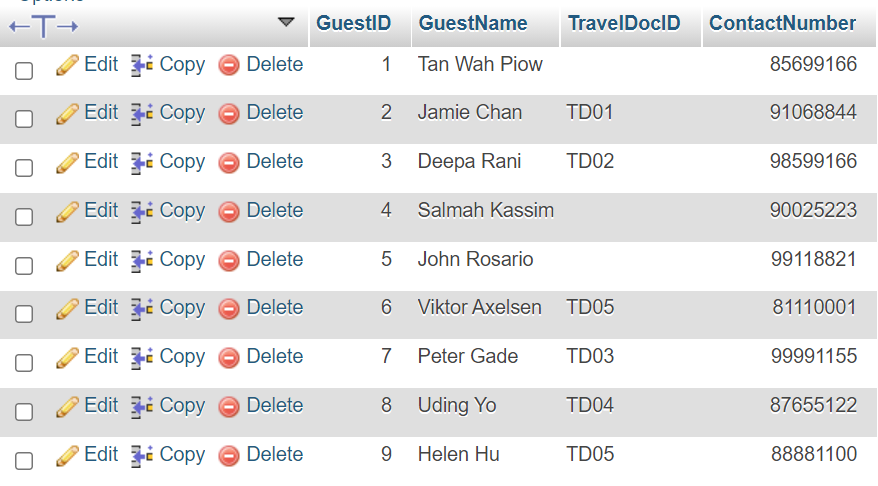




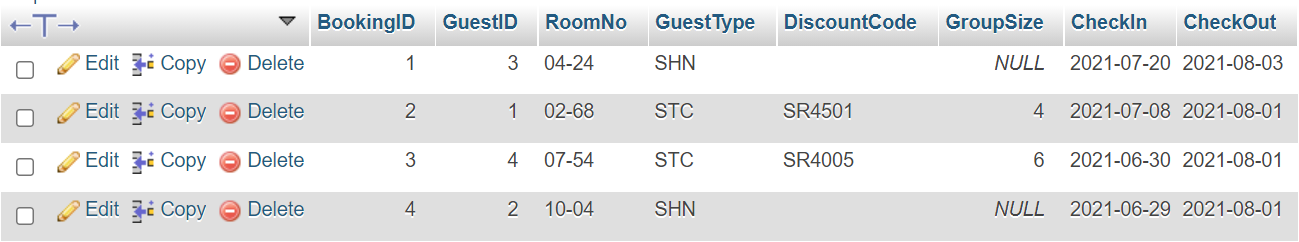




**guests table**



**hotel\_bookings table**



**hotel\_discounts table**



**hotel\_room table**

Graphical user interface, application

Description automatically generated

**payment table**

Graphical user interface

Description automatically generated with medium confidence

**payment\_modes table**

Graphical user interface, application

Description automatically generated

**stay\_types table**

Graphical user interface, text

Description automatically generated

**travel\_docs table**

Graphical user interface, application

Description automatically generated

**users table**

Graphical user interface, application

Description automatically generated

**HotelGuestsApp\_Loginpage**

/\*

\* I declare that this code was written by me.

\* I will not copy or allow others to copy my code.

\* I understand that copying code is considered as plagiarism.

\*

\* Matthew Ng Wei Chen 20011105, Jul 29, 2021 10:09:27 PM

\*/

**package** c209\_gradedPart2.Final;

**import** javafx.application.Application;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.geometry.Insets;

**import** javafx.geometry.Pos;

**import** javafx.scene.Scene;

**import** javafx.scene.control.Button;

**import** javafx.scene.control.Label;

**import** javafx.scene.control.PasswordField;

**import** javafx.scene.control.TextField;

**import** javafx.scene.image.Image;

**import** javafx.scene.image.ImageView;

**import** javafx.scene.layout.HBox;

**import** javafx.scene.layout.VBox;

**import** javafx.scene.paint.Color;

**import** javafx.scene.text.Font;

**import** javafx.scene.text.FontWeight;

**import** javafx.stage.Stage;

**public** **class** HotelGuestsApp\_Loginpage **extends** Application{

**private** VBox pane = **new** VBox();

**private** HBox secondPane = **new** HBox();

**private** HBox row1 = **new** HBox();

**private** HBox row2 = **new** HBox();

**private** HBox row3 = **new** HBox();

**private** HBox row4 = **new** HBox();

**private** HBox passwordRow = **new** HBox();

**private** Label labelTitle1 = **new** Label("Kingston Hotel");

**private** Label labelTitle2 = **new** Label("Sign in with your organizational account\n\n");

**private** Label labelUsername = **new** Label("Username: ");

**private** Label labelPassword = **new** Label("Password: ");

**protected** **static** Label *labelOutput* = **new** Label();

**protected** **static** TextField *textfieldUsername* = **new** TextField();

**protected** **static** PasswordField *passwordField* = **new** PasswordField();

**protected** **static** TextField *unstarPasswordField* = **new** TextField();

**private** Button buttonShow = **new** Button("Show/Hide Password");

**protected** **static** Button *buttonLogin* = **new** Button("Sign In");

**private** **static** **final** **int** ***LABEL\_PREFWIDTH*** = 70;

**private** **static** **final** **int** ***TEXTFIELD\_COLUMNCOUNT*** = 15;

**protected** **static** **boolean** *checker* = **false**;

**public** **static** **void** main(String[] args) {

*launch*(args);

}

**public** **void** start(Stage primaryStage) **throws** Exception {

Image photo = **new** Image("file:C209ese\_Hotel\_Pic.JPG");

ImageView photoDisplayed = **new** ImageView(photo);

photoDisplayed.setFitWidth(450);

photoDisplayed.setFitHeight(230);

secondPane.getChildren().addAll(photoDisplayed);

labelUsername.setPrefWidth(***LABEL\_PREFWIDTH***);

labelPassword.setPrefWidth(***LABEL\_PREFWIDTH***);

*textfieldUsername*.setPrefColumnCount(***TEXTFIELD\_COLUMNCOUNT***);

*passwordField*.setPrefColumnCount(***TEXTFIELD\_COLUMNCOUNT***);

*unstarPasswordField*.setPrefColumnCount(***TEXTFIELD\_COLUMNCOUNT***);

labelTitle1.setFont(Font.*font*("Brush Script MT",FontWeight.***BOLD***,50));

labelTitle1.setTextFill(Color.***BROWN***);

*buttonLogin*.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

*buttonLogin*.setTextFill(Color.***WHITE***);

*buttonLogin*.setStyle("-fx-background-color: BLUE");

EventHandler<ActionEvent> handleLoginButton = (ActionEvent e) -> {

**try** {

(**new** HotelGuestsApp\_MainMenu()).start(**new** Stage());

} **catch** (Exception e1) {

e1.printStackTrace();

}

};

*buttonLogin*.setOnAction(handleLoginButton);

row1.getChildren().addAll(labelTitle1);

row1.setAlignment(Pos.***CENTER***);

row2.getChildren().addAll(labelTitle2);

row3.getChildren().addAll(labelUsername,*textfieldUsername*);

passwordRow.getChildren().addAll(*passwordField*,buttonShow);

passwordRow.setSpacing(10);

row4.getChildren().addAll(labelPassword, passwordRow);

buttonShow.setOnAction(**new** EventHandler<ActionEvent>() {

**public** **void** handle(ActionEvent event) {

**if** (*checker* == **false**) {

*unstarPasswordField*.setText(*passwordField*.getText());

passwordRow.getChildren().clear();

passwordRow.getChildren().addAll(*unstarPasswordField*,buttonShow);

*checker* = **true**;

}

**else** {

*passwordField*.setText(*unstarPasswordField*.getText());

passwordRow.getChildren().clear();

passwordRow.getChildren().addAll(*passwordField*,buttonShow);

*checker* = **false**;

}

}

});

pane.getChildren().addAll(row1,secondPane,row2,row3,row4,*buttonLogin*,*labelOutput*);

pane.setAlignment(Pos.***TOP\_CENTER***);

pane.setPadding(**new** Insets(10,10,10,10));

pane.setSpacing(10);

Scene mainScene = **new** Scene(pane);

primaryStage.setTitle("Login");

primaryStage.setWidth(450);

primaryStage.setHeight(580);

primaryStage.setScene(mainScene);

primaryStage.show();

}

}

**HotelGuestsApp\_MainMenu**

/\*

\* I declare that this code was written by me.

\* I will not copy or allow others to copy my code.

\* I understand that copying code is considered as plagiarism.

\*

\* Matthew Ng Wei Chen 20011105, Aug 2, 2021 1:42:14 PM

\*/

**package** c209\_gradedPart2.Final;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**import** javafx.application.Application;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.geometry.Insets;

**import** javafx.geometry.Pos;

**import** javafx.scene.Scene;

**import** javafx.scene.control.Button;

**import** javafx.scene.control.Label;

**import** javafx.scene.layout.VBox;

**import** javafx.scene.paint.Color;

**import** javafx.scene.text.Font;

**import** javafx.scene.text.FontWeight;

**import** javafx.stage.Stage;

**public** **class** HotelGuestsApp\_MainMenu **extends** Application{

Label labelTitle = **new** Label("Kingston Hotel");

Label labelWelcome = **new** Label();

Label labelChoose = **new** Label("Choose an option:\n\n\n");

Button btnAddGuest = **new** Button("Add Guest");

Button btnUpdateBookings = **new** Button("Update Guest Booking Stay Period");

Button btnDeleteBookings = **new** Button("Delete Guest Booking");

Button btnViewGuestDetails = **new** Button("View Guest Bookings");

Button btnAddBookings = **new** Button("Add Room Booking");

**private** **static** **final** **int** ***BUTTON\_PREFWIDTH*** = 250;

**private** **static** **final** String ***JDBC\_URL*** = "jdbc:mysql://localhost:3310/c209\_ga\_final"; //I am using Port 3310, not 3308

**private** **static** **final** String ***DB\_USERNAME*** = "root";

**private** **static** **final** String ***DB\_PASSWORD*** = "";

**public** **void** start(Stage primaryStage) **throws** Exception {

DBUtil.*init*(***JDBC\_URL***, ***DB\_USERNAME***, ***DB\_PASSWORD***);

**if** (HotelGuestsApp\_Loginpage.*checker* == **false**) {

HotelGuestsApp\_Loginpage.*unstarPasswordField*.setText(HotelGuestsApp\_Loginpage.*passwordField*.getText());

}

**else** **if** (HotelGuestsApp\_Loginpage.*checker* == **true**) {

HotelGuestsApp\_Loginpage.*passwordField*.setText(HotelGuestsApp\_Loginpage.*unstarPasswordField*.getText());

}

**if** (HotelGuestsApp\_Loginpage.*textfieldUsername*.getText().equals("") || HotelGuestsApp\_Loginpage.*passwordField*.getText().equals("")) {

HotelGuestsApp\_Loginpage.*labelOutput*.setText("Please fill in all fields.");

}

**else** {

String sql = "SELECT \* FROM users WHERE UserId='" + HotelGuestsApp\_Loginpage.*textfieldUsername*.getText() + "'";

ResultSet rs = DBUtil.*getTable*(sql);

**try** {

**int** counter = 0;

**while** (rs.next()) {

counter++;

String userId = rs.getString("UserId");

String name = rs.getString("UserName");

String userPassword = rs.getString("Password");

**if** ((userId.equals(HotelGuestsApp\_Loginpage.*textfieldUsername*.getText()) && userPassword.equals(HotelGuestsApp\_Loginpage.*passwordField*.getText())) && (userId.equals(HotelGuestsApp\_Loginpage.*textfieldUsername*.getText()) && userPassword.equals(HotelGuestsApp\_Loginpage.*unstarPasswordField*.getText()))) {

HotelGuestsApp\_Loginpage.*labelOutput*.setText("Logging in...");

Stage stage = (Stage) HotelGuestsApp\_Loginpage.*buttonLogin*.getScene().getWindow();

stage.close();

labelTitle.setFont(Font.*font*("Brush Script MT",FontWeight.***BOLD***,50));

labelTitle.setTextFill(Color.***BROWN***);

labelWelcome.setText("Welcome, " + name + "!");

labelWelcome.setFont(Font.*font*("Arial",FontWeight.***BOLD***,18));

labelWelcome.setTextFill(Color.***BLUE***);

btnAddGuest.setPrefWidth(***BUTTON\_PREFWIDTH***);

btnUpdateBookings.setPrefWidth(***BUTTON\_PREFWIDTH***);

btnDeleteBookings.setPrefWidth(***BUTTON\_PREFWIDTH***);

btnViewGuestDetails.setPrefWidth(***BUTTON\_PREFWIDTH***);

btnAddBookings.setPrefWidth(***BUTTON\_PREFWIDTH***);

btnAddGuest.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

btnAddGuest.setTextFill(Color.***WHITE***);

btnAddGuest.setStyle("-fx-background-color: BLUE");

btnUpdateBookings.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

btnUpdateBookings.setTextFill(Color.***WHITE***);

btnUpdateBookings.setStyle("-fx-background-color: BLUE");

btnDeleteBookings.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

btnDeleteBookings.setTextFill(Color.***WHITE***);

btnDeleteBookings.setStyle("-fx-background-color: BLUE");

btnViewGuestDetails.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

btnViewGuestDetails.setTextFill(Color.***WHITE***);

btnViewGuestDetails.setStyle("-fx-background-color: BLUE");

btnAddBookings.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

btnAddBookings.setTextFill(Color.***WHITE***);

btnAddBookings.setStyle("-fx-background-color: BLUE");

EventHandler<ActionEvent> handler1 = (ActionEvent e) -> (**new** HotelGuestsApp\_AddGuest()).start(**new** Stage());

btnAddGuest.setOnAction(handler1);

EventHandler<ActionEvent> handler2 = (ActionEvent e) -> (**new** HotelGuestsApp\_UpdateBookings()).start(**new** Stage());

btnUpdateBookings.setOnAction(handler2);

EventHandler<ActionEvent> handler3 = (ActionEvent e) -> (**new** HotelGuestsApp\_DeleteBookings()).start(**new** Stage());

btnDeleteBookings.setOnAction(handler3);

EventHandler<ActionEvent> handler4 = (ActionEvent e) -> (**new** HotelGuestsApp\_ViewGuestDetails()).start(**new** Stage());

btnViewGuestDetails.setOnAction(handler4);

EventHandler<ActionEvent> handler5 = (ActionEvent e) -> (**new** HotelGuestsApp\_AddBookings()).start(**new** Stage());

btnAddBookings.setOnAction(handler5);

VBox pane = **new** VBox();

pane.setAlignment(Pos.***CENTER***);

pane.setPadding(**new** Insets(10,10,10,10));

pane.setSpacing(15);

pane.getChildren().addAll(labelTitle, labelWelcome, labelChoose, btnAddGuest, btnAddBookings, btnUpdateBookings, btnDeleteBookings, btnViewGuestDetails);

Scene mainScene = **new** Scene(pane);

primaryStage.setTitle("Main Menu");

primaryStage.setWidth(300);

primaryStage.setHeight(500);

primaryStage.setScene(mainScene);

primaryStage.show();

}

**else** {

HotelGuestsApp\_Loginpage.*labelOutput*.setText("Incorrect username or password.");

}

}

**if** (counter == rs.getRow()) {

HotelGuestsApp\_Loginpage.*labelOutput*.setText("Incorrect username or password.");

}

DBUtil.*close*();

}

**catch**(SQLException e) {

e.printStackTrace();

}

}

}

}

**HotelGuestsApp\_AddGuest**

/\*

\* I declare that this code was written by me.

\* I will not copy or allow others to copy my code.

\* I understand that copying code is considered as plagiarism.

\*

\* Matthew Ng Wei Chen 20011105, Aug 3, 2021 8:28:44 AM

\*/

**package** c209\_gradedPart2.Final;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**import** java.util.regex.Pattern;

**import** javafx.application.Application;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.geometry.Insets;

**import** javafx.geometry.Pos;

**import** javafx.scene.Scene;

**import** javafx.scene.control.Button;

**import** javafx.scene.control.Label;

**import** javafx.scene.control.TextField;

**import** javafx.scene.layout.HBox;

**import** javafx.scene.layout.VBox;

**import** javafx.scene.paint.Color;

**import** javafx.scene.text.Font;

**import** javafx.scene.text.FontWeight;

**import** javafx.stage.Stage;

**public** **class** HotelGuestsApp\_AddGuest **extends** Application {

**private** VBox pane = **new** VBox();

**private** HBox row1 = **new** HBox();

**private** HBox row2 = **new** HBox();

**private** HBox row3 = **new** HBox();

**private** HBox row4 = **new** HBox();

**private** HBox row5 = **new** HBox();

**private** **int** positioning = 0;

**private** Label labelName = **new** Label("Name: ");

**private** Label labelTravelDoc = **new** Label("Travel Document: ");

**private** Label labelOutput = **new** Label();

**private** Label labelMobile = **new** Label("Mobile Number: ");

**private** Label labelNotifyTravelDocID = **new** Label("\*Note: Accepted travel documents: TD01 (Singaporean), TD02 (Singapore PR), TD03 (Employment Pass), TD04 (Work Permit), TD05 (Student pass).\n");

**private** Label labelNotifyMobileNumber = **new** Label("\*Note: Only Singapore mobile numbers are accepted. Do not leave spacings.\n");

**private** TextField textfieldName = **new** TextField();

**private** TextField textfieldTravelDoc = **new** TextField();

**private** TextField textfieldMobile = **new** TextField();

**private** Button buttonAdd = **new** Button("Add Guest");

**private** **static** **final** String ***patternForName*** = "^[a-zA-z ]\*$";

**private** **static** **final** String ***patternForMobileNumber*** = "[89]\\d{7}";

**private** **static** **final** **int** ***LABEL\_PREFWIDTH*** = 100;

**private** **static** **final** **int** ***TEXTFIELD\_COLUMNCOUNT*** = 15;

**private** **static** **final** String ***JDBC\_URL*** = "jdbc:mysql://localhost:3310/c209\_ga\_final"; //I am using Port 3310, not 3308

**private** **static** **final** String ***DB\_USERNAME*** = "root";

**private** **static** **final** String ***DB\_PASSWORD*** = "";

**public** **void** start(Stage primaryStage) {

buttonAdd.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

buttonAdd.setTextFill(Color.***WHITE***);

buttonAdd.setStyle("-fx-background-color: BLUE");

labelName.setPrefWidth(***LABEL\_PREFWIDTH***);

labelTravelDoc.setPrefWidth(***LABEL\_PREFWIDTH***);

labelMobile.setPrefWidth(***LABEL\_PREFWIDTH***);

textfieldName.setPrefColumnCount(***TEXTFIELD\_COLUMNCOUNT***);

textfieldTravelDoc.setPrefColumnCount(***TEXTFIELD\_COLUMNCOUNT***);

textfieldMobile.setPrefColumnCount(***TEXTFIELD\_COLUMNCOUNT***);

EventHandler<ActionEvent> handleInsert = (ActionEvent e) -> doInsertGuest();

buttonAdd.setOnAction(handleInsert);

labelNotifyTravelDocID.setFont(Font.*font*("Arial",8));

labelNotifyTravelDocID.setTextFill(Color.***RED***);

labelNotifyTravelDocID.setAlignment(Pos.***CENTER***);

labelNotifyMobileNumber.setFont(Font.*font*("Arial",8));

labelNotifyMobileNumber.setTextFill(Color.***RED***);

row1.getChildren().addAll(labelName,textfieldName);

row1.setAlignment(Pos.***CENTER***);

row2.getChildren().addAll(labelTravelDoc,textfieldTravelDoc);

row2.setAlignment(Pos.***CENTER***);

row3.getChildren().addAll(labelNotifyTravelDocID);

row3.setAlignment(Pos.***CENTER***);

row4.getChildren().addAll(labelMobile,textfieldMobile);

row4.setAlignment(Pos.***CENTER***);

row5.getChildren().addAll(labelNotifyMobileNumber);

row5.setAlignment(Pos.***CENTER***);

pane.getChildren().addAll(row1,row2,row3,row4,row5,buttonAdd,labelOutput);

pane.setAlignment(Pos.***TOP\_CENTER***);

pane.setPadding(**new** Insets(10,10,10,10));

pane.setSpacing(10);

Scene mainScene = **new** Scene(pane);

primaryStage.setTitle("Add New Guest");

primaryStage.setWidth(600);

primaryStage.setHeight(300);

primaryStage.setScene(mainScene);

primaryStage.show();

}

**public** **void** doInsertGuest() {

DBUtil.*init*(***JDBC\_URL***, ***DB\_USERNAME***, ***DB\_PASSWORD***);

**if** (textfieldName.getText().equals("") || textfieldTravelDoc.getText().equals("") || textfieldMobile.getText().equals("")){

labelOutput.setText("Please fill in all fields!");

}

**else** **if** (!Pattern.*matches*(***patternForName***, textfieldName.getText())) {

labelOutput.setText("Invalid name, guest not added!");

}

**else** **if** (!Pattern.*matches*(***patternForMobileNumber***, textfieldMobile.getText())) {

labelOutput.setText("Invalid mobile number, guest not added!");

}

**else** {

ResultSet rs = DBUtil.*getTable*("SELECT \* FROM guests");

ResultSet rsCheckingTravelDocIDExists = DBUtil.*getTable*("SELECT ID FROM travel\_docs WHERE ID='" + textfieldTravelDoc.getText() + "'");

**try** {

**if**(!rsCheckingTravelDocIDExists.next()) {

labelOutput.setText("This travel document does not exist, guest not added!");

}

**else** {

**while** (rs.next()) {

}

rs.last();

positioning = rs.getRow();

String insertSQL = String.*format*("INSERT INTO guests(GuestID, GuestName, TravelDocID, ContactNumber) VALUES ('%d', '%s', '%s', %d)",

positioning+1, textfieldName.getText(), textfieldTravelDoc.getText(), Integer.*parseInt*(textfieldMobile.getText()));

**int** rowsAffected = DBUtil.*execSQL*(insertSQL);

**if** (rowsAffected == 1) {

labelOutput.setText("Guest added!");

} **else** {

labelOutput.setText("Failed to add guest!");

}

}

} **catch** (SQLException e){

labelOutput.setText("Failed to add guest!");

}

}

DBUtil.*close*();

}

}

**HotelGuestsApp\_UpdateBookings**

/\*

\* I declare that this code was written by me.

\* I will not copy or allow others to copy my code.

\* I understand that copying code is considered as plagiarism.

\*

\* Matthew Ng Wei Chen 20011105, Aug 3, 2021 8:43:32 AM

\*/

**package** c209\_gradedPart2.Final;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**import** java.time.LocalDate;

**import** java.util.regex.Pattern;

**import** javafx.application.Application;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.geometry.Insets;

**import** javafx.geometry.Pos;

**import** javafx.scene.Scene;

**import** javafx.scene.control.Button;

**import** javafx.scene.control.DatePicker;

**import** javafx.scene.control.Label;

**import** javafx.scene.control.TextArea;

**import** javafx.scene.control.TextField;

**import** javafx.scene.layout.BorderPane;

**import** javafx.scene.layout.HBox;

**import** javafx.scene.layout.VBox;

**import** javafx.scene.paint.Color;

**import** javafx.scene.text.Font;

**import** javafx.scene.text.FontWeight;

**import** javafx.stage.Stage;

**public** **class** HotelGuestsApp\_UpdateBookings **extends** Application {

**private** BorderPane pane = **new** BorderPane();

**private** HBox topHPane = **new** HBox();

**private** VBox topVPane = **new** VBox();

**private** HBox bottomHPane1 = **new** HBox();

**private** HBox bottomHPane2 = **new** HBox();

**private** HBox bottomHPane3 = **new** HBox();

**private** HBox bottomHPane4 = **new** HBox();

**private** Label labelBookingID = **new** Label("Booking ID:");

**private** TextField textfieldBookingID = **new** TextField();

**private** Label lbUpdatedCheckInDate = **new** Label("Updated Check-in Date: ");

**private** DatePicker tfUpdatedCheckInDate = **new** DatePicker();

**private** Label lbUpdatedCheckOutDate = **new** Label("Updated Check-out Date: ");

**private** DatePicker tfUpdatedCheckOutDate = **new** DatePicker();

**private** TextArea textareaGuestBookings = **new** TextArea();

**private** Label lbOutput = **new** Label();

**private** Label labelCheckInDate = **new** Label();

**private** Label labelCheckOutDate = **new** Label();

**private** VBox bottomVPane = **new** VBox();

**private** Button btFind = **new** Button("Search");

**private** Button btEdit = **new** Button("Update");

**private** **static** **final** String ***patternForBookingID*** = "\\d+";

**private** **static** **final** String ***JDBC\_URL*** = "jdbc:mysql://localhost:3310/c209\_ga\_final"; //I am using Port 3310, not 3308

**private** **static** **final** String ***DB\_USERNAME*** = "root";

**private** **static** **final** String ***DB\_PASSWORD*** = "";

**public** **void** start(Stage primaryStage) {

textareaGuestBookings.setStyle("-fx-font-family: monospace");

btFind.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

btFind.setTextFill(Color.***WHITE***);

btFind.setStyle("-fx-background-color: BLUE");

btEdit.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

btEdit.setTextFill(Color.***WHITE***);

btEdit.setStyle("-fx-background-color: BLUE");

btEdit.setDisable(**true**);

tfUpdatedCheckInDate.setDisable(**true**);

tfUpdatedCheckOutDate.setDisable(**true**);

textfieldBookingID.setPrefColumnCount(10);

topHPane.getChildren().addAll(labelBookingID, textfieldBookingID);

EventHandler<ActionEvent> handleFind = (ActionEvent e) -> doFind();

btFind.setOnAction(handleFind);

EventHandler<ActionEvent> handleUpdate = (ActionEvent e) -> doEdit();

btEdit.setOnAction(handleUpdate);

EventHandler<ActionEvent> event = **new** EventHandler<ActionEvent>() {

**public** **void** handle(ActionEvent e)

{

LocalDate i = tfUpdatedCheckInDate.getValue();

labelCheckInDate.setText(i.toString());

}

};

tfUpdatedCheckInDate.setShowWeekNumbers(**true**);

tfUpdatedCheckInDate.setOnAction(event);

EventHandler<ActionEvent> event2 = **new** EventHandler<ActionEvent>() {

**public** **void** handle(ActionEvent e)

{

LocalDate ld = tfUpdatedCheckOutDate.getValue();

labelCheckOutDate.setText(ld.toString());

}

};

tfUpdatedCheckOutDate.setShowWeekNumbers(**true**);

tfUpdatedCheckOutDate.setOnAction(event2);

bottomHPane1.getChildren().addAll(lbUpdatedCheckInDate, tfUpdatedCheckInDate);

bottomHPane2.getChildren().addAll(lbUpdatedCheckOutDate, tfUpdatedCheckOutDate);

bottomHPane3.getChildren().add(btEdit);

bottomHPane4.getChildren().add(lbOutput);

bottomVPane.getChildren().addAll(bottomHPane1, bottomHPane2, bottomHPane3, bottomHPane4);

topVPane.getChildren().addAll(topHPane, btFind);

topHPane.setSpacing(10);

topHPane.setAlignment(Pos.***CENTER***);

topVPane.setAlignment(Pos.***CENTER***);

pane.setTop(topVPane);

topVPane.setSpacing(10);

bottomHPane1.setAlignment(Pos.***CENTER***);

bottomHPane2.setAlignment(Pos.***CENTER***);

bottomHPane3.setAlignment(Pos.***CENTER***);

bottomHPane4.setAlignment(Pos.***CENTER***);

pane.setCenter(textareaGuestBookings);

bottomVPane.setAlignment(Pos.***CENTER***);

bottomVPane.setSpacing(10);

pane.setBottom(bottomVPane);

BorderPane.*setAlignment*(topVPane, Pos.***CENTER***);

BorderPane.*setAlignment*(textareaGuestBookings, Pos.***CENTER***);

BorderPane.*setAlignment*(bottomVPane, Pos.***CENTER***);

textareaGuestBookings.setEditable(**false**);

topVPane.setPadding(**new** Insets(10,10,10,10));

bottomVPane.setPadding(**new** Insets(10,10,10,10));

Scene mainScene = **new** Scene(pane);

pane.setPadding(**new** Insets(10,10,10,10));

primaryStage.setTitle("Update Guest Booking Stay Period");

primaryStage.setWidth(1100);

primaryStage.setHeight(400);

primaryStage.setScene(mainScene);

primaryStage.show();

}

**private** **void** doEdit() {

DBUtil.*init*(***JDBC\_URL***, ***DB\_USERNAME***, ***DB\_PASSWORD***);

**if** (textfieldBookingID.getText().equals("") || labelCheckOutDate.getText().equals("") || labelCheckInDate.getText().equals("")) {

lbOutput.setText("Please fill in all fields.");

}

**else** **if** (!Pattern.*matches*(***patternForBookingID***, textfieldBookingID.getText())) {

textareaGuestBookings.setText("Invalid Booking ID!");

}

**else** {

String updateSQL = "UPDATE hotel\_bookings SET CheckIn='" + labelCheckInDate.getText() + "', CheckOut='" + labelCheckOutDate.getText() + "' WHERE BookingID=" + textfieldBookingID.getText() + "";

**int** rowsUpdated = DBUtil.*execSQL*(updateSQL);

**if** (rowsUpdated == 1) {

lbOutput.setText("Booking stay information updated!");

} **else** {

lbOutput.setText("Updating failed!");

}

}

}

**private** **void** doFind() {

DBUtil.*init*(***JDBC\_URL***, ***DB\_USERNAME***, ***DB\_PASSWORD***);

**if** (textfieldBookingID.getText().equals("")) {

textareaGuestBookings.setText("Please input a Booking ID in the text field above.");

}

**else** **if** (!Pattern.*matches*(***patternForBookingID***, textfieldBookingID.getText())) {

textareaGuestBookings.setText("Invalid Booking ID!");

}

**else** {

String selectSQL = "SELECT h.\*, s.Description, DATEDIFF(h.CheckOut, h.CheckIn) FROM hotel\_bookings h INNER JOIN stay\_types s ON s.StayType = h.GuestType WHERE h.BookingID=" + Integer.*parseInt*(textfieldBookingID.getText());

ResultSet rs = DBUtil.*getTable*(selectSQL);

textareaGuestBookings.setText(String.*format*("%-12s %-10s %-11s %-18s %-15s %-12s %-20s %-15s %-16s\n", "Booking ID", "Guest ID", "Room Number", "Guest Type", "Discount Code", "Group Size", "Stay Period (Days)", "Check-in Date", "Check-out Date"));

**try** {

**int** counter = 0;

**while**(rs.next()) {

counter += 1;

**int** guestID = rs.getInt("h.GuestID");

String room = rs.getString("h.RoomNo");

String guestType = rs.getString("s.Description");

String discountCode = rs.getString("h.DiscountCode");

String groupSize = rs.getString("h.GroupSize");

String noOfDays = rs.getString("DATEDIFF(h.CheckOut, h.CheckIn)");

String checkIn = rs.getString("h.CheckIn");

String checkOut = rs.getString("h.CheckOut");

textareaGuestBookings.appendText(String.*format*("%-12s %-10s %-11s %-18s %-15s %-12s %-20s %-15s %-16s\n", textfieldBookingID.getText(), String.*valueOf*(guestID), room, guestType, discountCode, groupSize, String.*valueOf*(noOfDays), checkIn, checkOut));

btEdit.setDisable(**false**);

tfUpdatedCheckInDate.setDisable(**false**);

tfUpdatedCheckOutDate.setDisable(**false**);

}

**int** noOfRows = rs.getRow();

**if** (counter == noOfRows) {

textareaGuestBookings.setText("This booking ID does not exist!");

btEdit.setDisable(**true**);

}

}

**catch** (SQLException e) {

e.getMessage();

}

DBUtil.*close*();

}

}

}

**HotelGuestsApp\_AddBookings**

/\*

\* I declare that this code was written by me.

\* I will not copy or allow others to copy my code.

\* I understand that copying code is considered as plagiarism.

\*

\* Matthew Ng Wei Chen 20011105, Aug 3, 2021 8:51:41 AM

\*/

**package** c209\_gradedPart2.Final;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**import** java.time.LocalDate;

**import** java.util.ArrayList;

**import** java.util.regex.Pattern;

**import** javafx.application.Application;

**import** javafx.beans.value.ObservableValue;

**import** javafx.collections.FXCollections;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.geometry.Insets;

**import** javafx.geometry.Pos;

**import** javafx.scene.Scene;

**import** javafx.scene.control.Button;

**import** javafx.scene.control.ComboBox;

**import** javafx.scene.control.DatePicker;

**import** javafx.scene.control.Label;

**import** javafx.scene.control.RadioButton;

**import** javafx.scene.control.TextField;

**import** javafx.scene.control.Toggle;

**import** javafx.scene.control.ToggleGroup;

**import** javafx.scene.layout.BorderPane;

**import** javafx.scene.layout.HBox;

**import** javafx.scene.layout.VBox;

**import** javafx.scene.paint.Color;

**import** javafx.scene.text.Font;

**import** javafx.scene.text.FontWeight;

**import** javafx.stage.Stage;

**import** javafx.beans.value.ChangeListener;

**public** **class** HotelGuestsApp\_AddBookings **extends** Application {

**private** VBox vPane = **new** VBox();

**private** VBox radioVPane = **new** VBox();

**private** ToggleGroup tg = **new** ToggleGroup();

**private** Label lbRadioBtChoice = **new** Label("Choose a guest type: ");

**private** RadioButton r1 = **new** RadioButton("Stay-home-notice Guest");

**private** RadioButton r2 = **new** RadioButton("Staycation Guest");

**private** Label labelRadioButtonChosen = **new** Label();

**private** HBox hPane1 = **new** HBox();

**private** HBox hPane2 = **new** HBox();

**private** HBox hPane3 = **new** HBox();

**private** HBox hPane4 = **new** HBox();

**private** HBox hPane5 = **new** HBox();

**private** HBox hPane6 = **new** HBox();

**private** HBox hPane7 = **new** HBox();

**private** HBox hPane8 = **new** HBox();

**private** Label labelGuestID = **new** Label("Guest ID:");

**private** Label labelRoomNo = **new** Label("Room Number:");

**private** Label labelGuestType = **new** Label("Guest Type:");

**private** Label labelDiscountCode = **new** Label("Discount Code:");

**private** Label labelGroupSize = **new** Label("Group Size:");

**private** TextField textfieldGroupSize = **new** TextField();

**private** Label lbCheckInDate = **new** Label("Check-in Date: ");

**private** DatePicker tfCheckInDate = **new** DatePicker();

**private** Label lbCheckOutDate = **new** Label("Check-out Date: ");

**private** DatePicker tfCheckOutDate = **new** DatePicker();

**private** Label lbOutput = **new** Label();

**private** Button btAdd = **new** Button("Add");

**private** Label labelCheckInDate = **new** Label();

**private** Label labelCheckOutDate = **new** Label();

**private** **static** **final** String ***patternForSTCGroupSize*** = "\\d+";

**private** **static** **final** String ***JDBC\_URL*** = "jdbc:mysql://localhost:3310/c209\_ga\_final"; //I am using Port 3310, not 3308

**private** **static** **final** String ***DB\_USERNAME*** = "root";

**private** **static** **final** String ***DB\_PASSWORD*** = "";

**private** **static** **final** **int** ***LABEL\_PREFWIDTH*** = 90;

**private** **static** **final** **int** ***TEXTFIELD\_COLUMNCOUNT*** = 15;

**private** Label lbSelectedGuestID = **new** Label();

**private** Label lbSelectedRoomNo = **new** Label();

**private** Label lbSelectedDiscountCode = **new** Label();

**private** **int** positioning = 0;

**public** **void** start(Stage primaryStage) {

DBUtil.*init*(***JDBC\_URL***, ***DB\_USERNAME***, ***DB\_PASSWORD***);

ArrayList<String> guestIDList = **new** ArrayList<String>();

ResultSet rs1 = DBUtil.*getTable*("SELECT GuestID FROM guests");

**try** {

**while**(rs1.next()) {

**int** guestId = rs1.getInt("GuestID");

guestIDList.add(String.*valueOf*(guestId));

}

}

**catch** (SQLException e) {

e.getMessage();

}

ComboBox cbGuestID = **new** ComboBox(FXCollections.*observableArrayList*(guestIDList));

EventHandler<ActionEvent> event1 = **new** EventHandler<ActionEvent>() {

**public** **void** handle(ActionEvent e1)

{

lbSelectedGuestID.setText(cbGuestID.getValue() + "");

}

};

cbGuestID.setOnAction(event1);

ArrayList<String> roomNoList = **new** ArrayList<String>();

rs1 = DBUtil.*getTable*("SELECT RoomNo FROM hotel\_room");

**try** {

**while**(rs1.next()) {

String roomNo = rs1.getString("RoomNo");

roomNoList.add(roomNo);

}

}

**catch** (SQLException e) {

e.getMessage();

}

ComboBox cbRoomNo = **new** ComboBox(FXCollections.*observableArrayList*(roomNoList));

EventHandler<ActionEvent> event2 = **new** EventHandler<ActionEvent>() {

**public** **void** handle(ActionEvent e2)

{

lbSelectedRoomNo.setText(cbRoomNo.getValue() + "");

}

};

cbRoomNo.setOnAction(event2);

ArrayList<String> discountCodeList = **new** ArrayList<String>();

rs1 = DBUtil.*getTable*("SELECT DiscountCode FROM hotel\_discounts");

**try** {

**while**(rs1.next()) {

String discountCode = rs1.getString("DiscountCode");

discountCodeList.add(discountCode);

}

}

**catch** (SQLException e) {

e.getMessage();

}

ComboBox cbDiscountCode = **new** ComboBox(FXCollections.*observableArrayList*(discountCodeList));

EventHandler<ActionEvent> event4 = **new** EventHandler<ActionEvent>() {

**public** **void** handle(ActionEvent e4)

{

lbSelectedDiscountCode.setText(cbDiscountCode.getValue() + "");

}

};

cbDiscountCode.setOnAction(event4);

btAdd.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

btAdd.setTextFill(Color.***WHITE***);

btAdd.setStyle("-fx-background-color: BLUE");

labelGuestID.setPrefWidth(***LABEL\_PREFWIDTH***);

labelRoomNo.setPrefWidth(***LABEL\_PREFWIDTH***);

labelGuestType.setPrefWidth(***LABEL\_PREFWIDTH***);

labelDiscountCode.setPrefWidth(***LABEL\_PREFWIDTH***);

labelGroupSize.setPrefWidth(***LABEL\_PREFWIDTH***);

textfieldGroupSize.setPrefColumnCount(***TEXTFIELD\_COLUMNCOUNT***);

lbCheckInDate.setPrefWidth(***LABEL\_PREFWIDTH***);

lbCheckOutDate.setPrefWidth(***LABEL\_PREFWIDTH***);

cbGuestID.setDisable(**true**);

cbRoomNo.setDisable(**true**);

cbDiscountCode.setDisable(**true**);

textfieldGroupSize.setEditable(**false**);

tfCheckInDate.setDisable(**true**);

tfCheckOutDate.setDisable(**true**);

btAdd.setDisable(**true**);

EventHandler<ActionEvent> handleAdd = (ActionEvent e) -> doAddBooking();

btAdd.setOnAction(handleAdd);

EventHandler<ActionEvent> event = **new** EventHandler<ActionEvent>() {

**public** **void** handle(ActionEvent e)

{

LocalDate i = tfCheckInDate.getValue();

labelCheckInDate.setText(i.toString());

}

};

tfCheckInDate.setShowWeekNumbers(**true**);

tfCheckInDate.setOnAction(event);

EventHandler<ActionEvent> eventTwo = **new** EventHandler<ActionEvent>() {

**public** **void** handle(ActionEvent e)

{

LocalDate ld = tfCheckOutDate.getValue();

labelCheckOutDate.setText(ld.toString());

}

};

tfCheckOutDate.setShowWeekNumbers(**true**);

tfCheckOutDate.setOnAction(eventTwo);

labelRadioButtonChosen.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

labelRadioButtonChosen.setTextFill(Color.***RED***);

r1.setToggleGroup(tg);

r2.setToggleGroup(tg);

radioVPane.getChildren().addAll(lbRadioBtChoice, r1, r2);

radioVPane.setAlignment(Pos.***CENTER***);

radioVPane.setSpacing(10);

hPane1.getChildren().addAll(labelGuestID, cbGuestID);

hPane1.setAlignment(Pos.***CENTER***);

hPane2.getChildren().addAll(labelRoomNo, cbRoomNo);

hPane2.setAlignment(Pos.***CENTER***);

hPane3.getChildren().addAll(labelDiscountCode, cbDiscountCode);

hPane3.setAlignment(Pos.***CENTER***);

hPane4.getChildren().addAll(labelGroupSize, textfieldGroupSize);

hPane4.setAlignment(Pos.***CENTER***);

hPane5.getChildren().addAll(lbCheckInDate, tfCheckInDate);

hPane5.setAlignment(Pos.***CENTER***);

hPane6.getChildren().addAll(lbCheckOutDate, tfCheckOutDate);

hPane6.setAlignment(Pos.***CENTER***);

hPane7.getChildren().add(btAdd);

hPane7.setAlignment(Pos.***CENTER***);

hPane8.getChildren().add(lbOutput);

hPane8.setAlignment(Pos.***CENTER***);

vPane.getChildren().addAll(radioVPane, labelRadioButtonChosen, hPane1, hPane2, hPane3, hPane4, hPane5, hPane6, hPane7, hPane8);

tg.selectedToggleProperty().addListener(**new** ChangeListener<Toggle>()

{

**public** **void** changed(ObservableValue<? **extends** Toggle> ob,

Toggle o, Toggle n)

{

RadioButton rb = (RadioButton)tg.getSelectedToggle();

**if** (rb != **null**) {

String s = rb.getText();

**if** (s.equals("Staycation Guest")) {

cbGuestID.setDisable(**false**);

cbRoomNo.setDisable(**false**);

cbDiscountCode.setDisable(**false**);

textfieldGroupSize.setEditable(**true**);

tfCheckInDate.setDisable(**false**);

tfCheckOutDate.setDisable(**false**);

btAdd.setDisable(**false**);

labelRadioButtonChosen.setText("Staycation Guest Chosen. You need to fill in all fields.");

}

**else** **if** (s.equals("Stay-home-notice Guest")) {

cbGuestID.setDisable(**false**);

cbRoomNo.setDisable(**false**);

cbDiscountCode.setDisable(**true**);

textfieldGroupSize.setEditable(**false**);

tfCheckInDate.setDisable(**false**);

tfCheckOutDate.setDisable(**false**);

btAdd.setDisable(**false**);

labelRadioButtonChosen.setText("Stay-home-notice Guest Chosen. You need to fill in all fields except 'discount code' and 'group size'.");

}

}

}

});

vPane.setAlignment(Pos.***CENTER***);

vPane.setSpacing(10);

vPane.setAlignment(Pos.***CENTER***);

vPane.setSpacing(10);

BorderPane.*setAlignment*(vPane, Pos.***CENTER***);

vPane.setPadding(**new** Insets(10,10,10,10));

Scene mainScene = **new** Scene(vPane);

primaryStage.setTitle("Add Room Booking");

primaryStage.setWidth(700);

primaryStage.setHeight(480);

primaryStage.setScene(mainScene);

primaryStage.show();

}

**public** **void** doAddBooking() {

DBUtil.*init*(***JDBC\_URL***, ***DB\_USERNAME***, ***DB\_PASSWORD***);

ResultSet rs = DBUtil.*getTable*("SELECT \* FROM hotel\_bookings");

**try** {

**while**(rs.next()) {

}

rs.last();

positioning = rs.getRow();

}

**catch**(SQLException e) {

e.getMessage();

}

**if** (labelRadioButtonChosen.getText().equals("Staycation Guest Chosen. You need to fill in all fields.")){

**if** (!Pattern.*matches*(***patternForSTCGroupSize***, textfieldGroupSize.getText())) {

lbOutput.setText("Invalid group size, please give a numeric input!");

}

**else** **if** (lbSelectedGuestID.getText().equals("") || lbSelectedRoomNo.getText().equals("") || lbSelectedDiscountCode.getText().equals("") || textfieldGroupSize.getText().equals("") || labelCheckOutDate.getText().equals("") || labelCheckInDate.getText().equals("")) {

lbOutput.setText("Please fill in all fields.");

}

**else** {

String addSTCSQL = String.*format*("INSERT INTO hotel\_bookings (BookingID,GuestID,RoomNo,GuestType,DiscountCode,GroupSize,CheckIn,CheckOut) VALUES ('%d','%d','%s','%s','%s','%d','%s','%s')", positioning+1, Integer.*parseInt*(lbSelectedGuestID.getText()), lbSelectedRoomNo.getText(), "STC", lbSelectedDiscountCode.getText(), Integer.*parseInt*(textfieldGroupSize.getText()), labelCheckInDate.getText(), labelCheckOutDate.getText());

**int** rowsUpdated = DBUtil.*execSQL*(addSTCSQL);

**if** (rowsUpdated == 1) {

lbOutput.setText("New STC guest booking successfully added!");

} **else** {

lbOutput.setText("Adding of STC guest failed!");

}

}

}

**else** **if** (labelRadioButtonChosen.getText().equals("Stay-home-notice Guest Chosen. You need to fill in all fields except 'discount code' and 'group size'.")) {

**if** (lbSelectedGuestID.getText().equals("") || lbSelectedRoomNo.getText().equals("") || labelCheckOutDate.getText().equals("") || labelCheckInDate.getText().equals("")) {

lbOutput.setText("Please fill in all fields.");

}

**else** {

String addSHNSQL = String.*format*("INSERT INTO hotel\_bookings (BookingID,GuestID,RoomNo,GuestType,DiscountCode,GroupSize,CheckIn,CheckOut) VALUES ('%d','%d','%s','%s','%s',null,'%s','%s')", positioning+1, Integer.*parseInt*(lbSelectedGuestID.getText()), lbSelectedRoomNo.getText(), "SHN", "", labelCheckInDate.getText(), labelCheckOutDate.getText());

**int** rowsUpdated = DBUtil.*execSQL*(addSHNSQL);

**if** (rowsUpdated == 1) {

lbOutput.setText("New SHN guest booking successfully added!");

} **else** {

lbOutput.setText("Adding of SHN guest failed!");

}

}

}

DBUtil.*close*();

}

}

**HotelGuestsApp\_DeleteBookings**

/\*

\* I declare that this code was written by me.

\* I will not copy or allow others to copy my code.

\* I understand that copying code is considered as plagiarism.

\*

\* Matthew Ng Wei Chen 20011105, Aug 3, 2021 8:46:59 AM

\*/

**package** c209\_gradedPart2.Final;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**import** java.util.regex.Pattern;

**import** javafx.application.Application;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.geometry.Insets;

**import** javafx.geometry.Pos;

**import** javafx.scene.Scene;

**import** javafx.scene.control.Button;

**import** javafx.scene.control.Label;

**import** javafx.scene.control.TextArea;

**import** javafx.scene.control.TextField;

**import** javafx.scene.layout.BorderPane;

**import** javafx.scene.layout.HBox;

**import** javafx.scene.layout.VBox;

**import** javafx.scene.paint.Color;

**import** javafx.scene.text.Font;

**import** javafx.scene.text.FontWeight;

**import** javafx.stage.Stage;

**public** **class** HotelGuestsApp\_DeleteBookings **extends** Application {

**private** BorderPane pane = **new** BorderPane();

**private** HBox topHPane = **new** HBox();

**private** VBox topVPane = **new** VBox();

**private** HBox bottomHPane1 = **new** HBox();

**private** HBox bottomHPane2 = **new** HBox();

**private** Label labelBookingID = **new** Label("Booking ID:");

**private** TextField textfieldBookingID = **new** TextField();

**private** TextArea textareaGuestBookings = **new** TextArea();

**private** Label lbOutput = **new** Label();

**private** VBox bottomVPane = **new** VBox();

**private** Button btDelete = **new** Button("Delete");

**private** Button btConfirmDelete = **new** Button("Confirm Delete");

**private** Button btCancel = **new** Button("Cancel");

**private** **static** **final** String ***patternForBookingID*** = "\\d+";

**private** **static** **final** String ***JDBC\_URL*** = "jdbc:mysql://localhost:3310/c209\_ga\_final"; //I am using Port 3310, not 3308

**private** **static** **final** String ***DB\_USERNAME*** = "root";

**private** **static** **final** String ***DB\_PASSWORD*** = "";

**public** **void** start(Stage primaryStage) {

textareaGuestBookings.setStyle("-fx-font-family: monospace");

btDelete.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

btDelete.setTextFill(Color.***WHITE***);

btDelete.setStyle("-fx-background-color: BLUE");

btConfirmDelete.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

btConfirmDelete.setTextFill(Color.***WHITE***);

btConfirmDelete.setStyle("-fx-background-color: BLUE");

btCancel.setFont(Font.*font*("Arial",FontWeight.***BOLD***,12));

btCancel.setTextFill(Color.***WHITE***);

btCancel.setStyle("-fx-background-color: RED");

btConfirmDelete.setDisable(**true**);

btCancel.setDisable(**true**);

textfieldBookingID.setPrefColumnCount(10);

topHPane.getChildren().addAll(labelBookingID, textfieldBookingID);

EventHandler<ActionEvent> handleFind = (ActionEvent e) -> doFind();

btDelete.setOnAction(handleFind);

EventHandler<ActionEvent> handleUpdate = (ActionEvent e) -> doDelete();

btConfirmDelete.setOnAction(handleUpdate);

EventHandler<ActionEvent> handleCancel = (ActionEvent e) -> doCancel();

btCancel.setOnAction(handleCancel);

bottomHPane1.getChildren().addAll(btConfirmDelete, btCancel);

bottomHPane1.setSpacing(10);

bottomHPane2.getChildren().add(lbOutput);

bottomVPane.getChildren().addAll(bottomHPane1, bottomHPane2);

topVPane.getChildren().addAll(topHPane, btDelete);

topHPane.setSpacing(10);

topHPane.setAlignment(Pos.***CENTER***);

topVPane.setAlignment(Pos.***CENTER***);

pane.setTop(topVPane);

topVPane.setSpacing(10);

bottomHPane1.setAlignment(Pos.***CENTER***);

bottomHPane2.setAlignment(Pos.***CENTER***);

pane.setCenter(textareaGuestBookings);

bottomVPane.setAlignment(Pos.***CENTER***);

bottomVPane.setSpacing(10);

pane.setBottom(bottomVPane);

BorderPane.*setAlignment*(topVPane, Pos.***CENTER***);

BorderPane.*setAlignment*(textareaGuestBookings, Pos.***CENTER***);

BorderPane.*setAlignment*(bottomVPane, Pos.***CENTER***);

textareaGuestBookings.setEditable(**false**);

topVPane.setPadding(**new** Insets(10,10,10,10));

bottomVPane.setPadding(**new** Insets(10,10,10,10));

Scene mainScene = **new** Scene(pane);

pane.setPadding(**new** Insets(10,10,10,10));

primaryStage.setTitle("Delete Guest Booking");

primaryStage.setWidth(1100);

primaryStage.setHeight(400);

primaryStage.setScene(mainScene);

primaryStage.show();

}

**private** **void** doCancel() {

textareaGuestBookings.setText("");

textfieldBookingID.setText("");

btCancel.setDisable(**true**);

btConfirmDelete.setDisable(**true**);

textareaGuestBookings.setEditable(**false**);

}

**private** **void** doDelete() {

DBUtil.*init*(***JDBC\_URL***, ***DB\_USERNAME***, ***DB\_PASSWORD***);

**if** (textfieldBookingID.getText().equals("")) {

lbOutput.setText("Please fill in the booking ID text field.");

}

**else** **if** (!Pattern.*matches*(***patternForBookingID***, textfieldBookingID.getText())) {

textareaGuestBookings.setText("Invalid Booking ID!");

}

**else** {

String updateSQL = "DELETE FROM hotel\_bookings WHERE BookingID=" + Integer.*parseInt*(textfieldBookingID.getText());

**int** rowsUpdated = DBUtil.*execSQL*(updateSQL);

**if** (rowsUpdated == 1) {

lbOutput.setText("Booking successfully deleted!");

} **else** {

lbOutput.setText("Deletion failed!");

}

}

}

**private** **void** doFind() {

DBUtil.*init*(***JDBC\_URL***, ***DB\_USERNAME***, ***DB\_PASSWORD***);

**if** (textfieldBookingID.getText().equals("")) {

textareaGuestBookings.setText("Please input a Booking ID in the text field above.");

}

**else** **if** (!Pattern.*matches*(***patternForBookingID***, textfieldBookingID.getText())) {

textareaGuestBookings.setText("Invalid Booking ID!");

}

**else** {

//String selectSQL = "SELECT h.\*, s.Description FROM hotel\_bookings h WHERE h.BookingID=" + Integer.parseInt(textfieldBookingID.getText()) + " INNER JOIN stay\_types s ON s.StayType = h.GuestType";

String selectSQL = "SELECT h.\*, s.Description, DATEDIFF(h.CheckOut, h.CheckIn) FROM hotel\_bookings h INNER JOIN stay\_types s ON s.StayType = h.GuestType WHERE h.BookingID=" + Integer.*parseInt*(textfieldBookingID.getText());

ResultSet rs = DBUtil.*getTable*(selectSQL);

textareaGuestBookings.setText(String.*format*("%-12s %-10s %-11s %-18s %-15s %-12s %-20s %-15s %-16s\n", "Booking ID", "Guest ID", "Room Number", "Guest Type", "Discount Code", "Group Size", "Stay Period (Days)", "Check-in Date", "Check-out Date"));

**try** {

**int** counter = 0;

**while**(rs.next()) {

counter += 1;

**int** guestID = rs.getInt("h.GuestID");

String room = rs.getString("h.RoomNo");

String guestType = rs.getString("s.Description");

String discountCode = rs.getString("h.DiscountCode");

String groupSize = rs.getString("h.GroupSize");

String noOfDays = rs.getString("DATEDIFF(h.CheckOut, h.CheckIn)");

String checkIn = rs.getString("h.CheckIn");

String checkOut = rs.getString("h.CheckOut");

textareaGuestBookings.appendText(String.*format*("%-12s %-10s %-11s %-18s %-15s %-12s %-20s %-15s %-16s\n", textfieldBookingID.getText(), String.*valueOf*(guestID), room, guestType, discountCode, groupSize, String.*valueOf*(noOfDays), checkIn, checkOut));

btConfirmDelete.setDisable(**false**);

btCancel.setDisable(**false**);

}

**int** noOfRows = rs.getRow();

**if** (counter == noOfRows) {

textareaGuestBookings.setText("This booking ID does not exist!");

btConfirmDelete.setDisable(**true**);

btCancel.setDisable(**true**);

}

}

**catch** (SQLException e) {

e.getMessage();

}

DBUtil.*close*();

}

}

}

**HotelGuestsApp\_ViewGuestDetails**

/\*

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\*

\* Matthew Ng Wei Chen 20011105, Aug 3, 2021 8:49:37 AM

\*/

**package** c209\_gradedPart2.Final;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**import** java.util.ArrayList;

**import** java.util.regex.Pattern;

**import** javafx.application.Application;

**import** javafx.beans.value.ChangeListener;

**import** javafx.beans.value.ObservableValue;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.geometry.Insets;

**import** javafx.geometry.Pos;

**import** javafx.scene.Scene;

**import** javafx.scene.control.Button;

**import** javafx.scene.control.Label;

**import** javafx.scene.control.RadioButton;

**import** javafx.scene.control.TextArea;

**import** javafx.scene.control.TextField;

**import** javafx.scene.control.Toggle;

**import** javafx.scene.control.ToggleGroup;

**import** javafx.scene.layout.BorderPane;

**import** javafx.scene.layout.HBox;

**import** javafx.scene.layout.VBox;

**import** javafx.scene.paint.Color;

**import** javafx.scene.text.Font;

**import** javafx.scene.text.FontWeight;

**import** javafx.stage.Stage;

**public** **class** HotelGuestsApp\_ViewGuestDetails **extends** Application {

**private** BorderPane pane = **new** BorderPane();

**private** HBox topHPane = **new** HBox();

**private** VBox topVPane = **new** VBox();

**private** HBox topHPane2 = **new** HBox();

**private** HBox bottomPane = **new** HBox();

**private** ToggleGroup tg = **new** ToggleGroup();

**private** Label lbRadioBtChoice = **new** Label("Choose a guest type to view:\n\n");

**private** RadioButton r1 = **new** RadioButton("Stay-home-notice (SHN) Guests");

**private** RadioButton r2 = **new** RadioButton("Staycation (STC) Guests");

**private** RadioButton r3 = **new** RadioButton("All Guests");

**private** TextArea textareaViewGuest = **new** TextArea();

**private** **static** **final** String ***JDBC\_URL*** = "jdbc:mysql://localhost:3310/c209\_ga\_final"; //I am using Port 3310, not 3308

**private** **static** **final** String ***DB\_USERNAME*** = "root";

**private** **static** **final** String ***DB\_PASSWORD*** = "";

**private** ArrayList<Guest> guestsList = **new** ArrayList<Guest>();

**public** **void** start(Stage primaryStage) {

loadingGuests();

textareaViewGuest.setStyle("-fx-font-family: monospace");

r1.setToggleGroup(tg);

r2.setToggleGroup(tg);

r3.setToggleGroup(tg);

tg.selectedToggleProperty().addListener(**new** ChangeListener<Toggle>()

{

**public** **void** changed(ObservableValue<? **extends** Toggle> ob,

Toggle o, Toggle n)

{

RadioButton rb = (RadioButton)tg.getSelectedToggle();

**if** (rb != **null**) {

**if** (rb.getText().equals("All Guests")) {

doViewAll();

}

**else** **if** (rb.getText().equals("Stay-home-notice (SHN) Guests")) {

doViewSHN();

}

**else** **if** (rb.getText().equals("Staycation (STC) Guests")) {

doViewSTC();

}

}

}

});

lbRadioBtChoice.setFont(Font.*font*("Verdana",FontWeight.***BOLD***,15));

lbRadioBtChoice.setTextFill(Color.***BLUE***);

textareaViewGuest.setEditable(**false**);

topHPane.getChildren().addAll(lbRadioBtChoice);

topHPane2.getChildren().addAll(r3, r1, r2);

topHPane2.setSpacing(100);

topHPane2.setAlignment(Pos.***CENTER***);

topHPane2.setPadding(**new** Insets(10,10,10,10));

bottomPane.getChildren().addAll(textareaViewGuest);

topVPane.getChildren().addAll(topHPane, topHPane2);

topHPane.setSpacing(10);

topHPane.setAlignment(Pos.***CENTER***);

topVPane.setAlignment(Pos.***CENTER***);

pane.setTop(topVPane);

topVPane.setSpacing(10);

pane.setCenter(textareaViewGuest);

bottomPane.setAlignment(Pos.***CENTER***);

bottomPane.setSpacing(10);

pane.setBottom(bottomPane);

BorderPane.*setAlignment*(topVPane, Pos.***CENTER***);

BorderPane.*setAlignment*(textareaViewGuest, Pos.***CENTER***);

BorderPane.*setAlignment*(bottomPane, Pos.***CENTER***);

pane.setPadding(**new** Insets(10,10,10,10));

Scene mainScene = **new** Scene(pane);

primaryStage.setTitle("View Guest Bookings");

primaryStage.setWidth(1100);

primaryStage.setHeight(300);

primaryStage.setScene(mainScene);

primaryStage.show();

}

**private** **void** loadingGuests() {

DBUtil.*init*(***JDBC\_URL***, ***DB\_USERNAME***, ***DB\_PASSWORD***);

String selectSQL = "SELECT g.\*, hb.\*, hr.\*, hd.\*, td.\*, st.Description, DATEDIFF(hb.CheckOut, hb.CheckIn) FROM hotel\_bookings hb LEFT JOIN guests g ON g.GuestID = hb.GuestID INNER JOIN stay\_types st ON st.StayType = hb.GuestType LEFT JOIN travel\_docs td ON td.ID = g.TravelDocID INNER JOIN hotel\_room hr ON hr.RoomNo = hb.RoomNo LEFT JOIN hotel\_discounts hd ON hd.DiscountCode = hb.DiscountCode";

ResultSet rs = DBUtil.*getTable*(selectSQL);

**try** {

**while**(rs.next()) {

**int** bookingId = rs.getInt("hb.BookingID");

**int** guestId = rs.getInt("hb.GuestID");

String guestName = rs.getString("g.GuestName");

String guestRoomNo = rs.getString("hb.RoomNo");

String guestType = rs.getString("st.Description");

**int** dailyPrice = rs.getInt("hr.DailyPrice");

**int** contactNumber = rs.getInt("g.ContactNumber");

**int** noOfDays = rs.getInt("DATEDIFF(hb.CheckOut, hb.CheckIn)");

String discountCode = rs.getString("hb.DiscountCode");

String discountDescription = rs.getString("hd.Description");

**int** groupSize = rs.getInt("hb.GroupSize");

**int** discountRate = rs.getInt("hd.Rate");

String discountType = rs.getString("hd.DiscountType");

String travelDocType = rs.getString("td.Description");

**if** (guestType.equals("Stay-Home-Notice")) {

Guest newShnGuest = **new** SHNGuest(bookingId, guestId, guestName, guestRoomNo, guestType, dailyPrice, contactNumber, noOfDays, travelDocType);

guestsList.add(newShnGuest);

}

**else** **if**(guestType.equals("Staycation")) {

Guest newStcGuest = **new** STCGuest(bookingId, guestId, guestName, guestRoomNo, guestType, dailyPrice, contactNumber, noOfDays, discountCode, discountDescription, groupSize, discountRate, discountType);

guestsList.add(newStcGuest);

}

}

}

**catch** (SQLException e) {

e.getMessage();

}

DBUtil.*close*();

}

**private** **void** doViewAll() {

textareaViewGuest.setText(String.*format*("%-12s %-10s %-20s %-13s %-18s %-16s %-15s %-15s\n", "Booking ID", "Guest ID", "Guest Name", "Room Number", "Guest Type", "Contact Number", "No. of Days", "Total Fee ($)"));

**for** (Guest g : guestsList) {

textareaViewGuest.appendText(String.*format*("%-12d %-10d %-20s %-13s %-18s %-16d %-15d %-15.2f\n", g.getBookingId(), g.getGuestId(), g.getGuestName(), g.getGuestRoomNo(), g.getGuestType(), g.getContactNumber(), g.getNoOfDays(), g.calculateHotelStayFee(g.getDailyPrice())));

}

}

**private** **void** doViewSHN() {

textareaViewGuest.setText(String.*format*("%-12s %-10s %-20s %-13s %-18s %-16s %-15s %-18s %-15s\n", "Booking ID", "Guest ID", "Guest Name", "Room Number", "Guest Type", "Contact Number", "No. of Days", "Travel Document", "Total Fee ($)"));

**for** (Guest g : guestsList) {

**if** (g **instanceof** SHNGuest) {

textareaViewGuest.appendText(String.*format*("%-12d %-10d %-20s %-13s %-18s %-16d %-15d %-18s %-15.2f\n", g.getBookingId(), g.getGuestId(), g.getGuestName(), g.getGuestRoomNo(), g.getGuestType(), g.getContactNumber(), g.getNoOfDays(), ((SHNGuest) g).getTravelDocType(), g.calculateHotelStayFee(g.getDailyPrice())));

}

}

}

**private** **void** doViewSTC() {

textareaViewGuest.setText(String.*format*("%-12s %-10s %-20s %-13s %-18s %-16s %-15s %-12s %-15s %-22s %-15s\n", "Booking ID", "Guest ID", "Guest Name", "Room Number", "Guest Type", "Contact Number", "No. of Days", "Group Size", "Discount Code", "Discount Description", "Total Fee ($)"));

**for** (Guest g : guestsList) {

**if** (g **instanceof** STCGuest) {

textareaViewGuest.appendText(String.*format*("%-12d %-10d %-20s %-13s %-18s %-16d %-15d %-12d %-15s %-22s %-15.2f\n", g.getBookingId(), g.getGuestId(), g.getGuestName(), g.getGuestRoomNo(), g.getGuestType(), g.getContactNumber(), g.getNoOfDays(), ((STCGuest) g).getGroupSize(), ((STCGuest) g).getDiscountCode(), ((STCGuest) g).getDiscountDesctiption(), g.calculateHotelStayFee(g.getDailyPrice())));

}

}

}

}

**Guest**

/\*

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\* Matthew Ng Wei Chen 20011105, Jul 28, 2021 9:38:57 PM

\*/

**package** c209\_gradedPart2.Final;

**public** **abstract** **class** Guest {

**private** **int** bookingId;

**private** **int** guestId;

**private** String guestName;

**private** String guestRoomNo;

**private** String guestType;

**private** **int** dailyPrice;

**private** **int** contactNumber;

**protected** **int** noOfDays;

**public** Guest(**int** bookingId, **int** guestId, String guestName, String guestRoomNo, String guestType, **int** dailyPrice,

**int** contactNumber, **int** noOfDays) {

**this**.bookingId = bookingId;

**this**.guestId = guestId;

**this**.guestName = guestName;

**this**.guestRoomNo = guestRoomNo;

**this**.guestType = guestType;

**this**.dailyPrice = dailyPrice;

**this**.contactNumber = contactNumber;

**this**.noOfDays = noOfDays;

}

**public** **int** getBookingId() {

**return** bookingId;

}

**public** **int** getGuestId() {

**return** guestId;

}

**public** String getGuestName() {

**return** guestName;

}

**public** String getGuestRoomNo() {

**return** guestRoomNo;

}

**public** String getGuestType() {

**return** guestType;

}

**public** **int** getDailyPrice() {

**return** dailyPrice;

}

**public** **int** getContactNumber() {

**return** contactNumber;

}

**public** **int** getNoOfDays() {

**return** noOfDays;

}

**public** **abstract** **double** calculateHotelStayFee(**int** dailyPrice);

}

**SHNGuest**

/\*

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\* Matthew Ng Wei Chen 20011105, Jul 28, 2021 9:32:29 PM

\*/

**package** c209\_gradedPart2.Final;

**public** **class** SHNGuest **extends** Guest {

**private** String travelDocType;

**public** SHNGuest(**int** bookingId, **int** guestId, String guestName, String guestRoomNo, String guestType, **int** dailyPrice,

**int** contactNumber, **int** noOfDays, String travelDocType) {

**super**(bookingId, guestId, guestName, guestRoomNo, guestType, dailyPrice, contactNumber, noOfDays);

**this**.travelDocType = travelDocType;

}

**public** String getTravelDocType() {

**return** travelDocType;

}

**public** **double** calculateHotelStayFee(**int** dailyPrice) {

**double** cost = noOfDays \* dailyPrice;

**return** cost;

}

}

**STCGuest**

/\*

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\* Matthew Ng Wei Chen 20011105, Jul 28, 2021 9:33:06 PM

\*/

**package** c209\_gradedPart2.Final;

**public** **class** STCGuest **extends** Guest{

**private** String discountCode;

**private** String discountDesctiption;

**private** **int** groupSize;

**private** **int** discountRate;

**private** String discountType;

**public** STCGuest(**int** bookingId, **int** guestId, String guestName, String guestRoomNo, String guestType, **int** dailyPrice,

**int** contactNumber, **int** noOfDays, String discountCode, String discountDesctiption, **int** groupSize,

**int** discountRate, String discountType) {

**super**(bookingId, guestId, guestName, guestRoomNo, guestType, dailyPrice, contactNumber, noOfDays);

**this**.discountCode = discountCode;

**this**.discountDesctiption = discountDesctiption;

**this**.groupSize = groupSize;

**this**.discountRate = discountRate;

**this**.discountType = discountType;

}

**public** String getDiscountCode() {

**return** discountCode;

}

**public** String getDiscountDesctiption() {

**return** discountDesctiption;

}

**public** **int** getGroupSize() {

**return** groupSize;

}

**public** **int** getDiscountRate() {

**return** discountRate;

}

**public** String getDiscountType() {

**return** discountType;

}

**public** **double** calculateHotelStayFee(**int** dailyPrice) {

**double** cost = 0;

**if** (discountType.equals("Fixed")) {

cost = (dailyPrice \* noOfDays) - (discountRate \* noOfDays);

}

**else** **if** (discountType.equals("Percentage")) {

cost = (dailyPrice \* noOfDays) \* ((100.00 - discountRate)/100.00);

}

**return** cost;

}

}