## Main Application Class

*import* javafx.application.Application;

*import* javafx.fxml.FXMLLoader;

*import* javafx.scene.Parent;

*import* javafx.scene.Scene;

*import* javafx.stage.Stage;

*public* class MainApp *extends* *Application* {

    @**Override**

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

        System.*out*.println(getClass());

        Parent root **=** FXMLLoader.load(getClass().getResource("/fxml/login\_form.fxml"));

        stage.setTitle("User Login");

        stage.setScene(**new** Scene(root, 800, 500));

        stage.show();

    }

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

        launch(args);

    }

}

## FXML Layout

<?import*javafx*.scene.layout.GridPane?>

<?import*javafx*.geometry.Insets?>

<?import*javafx*.scene.layout.ColumnConstraints?>

<?import*javafx*.scene.control.Label?>

<?import*javafx*.scene.text.Font?>

<?import*javafx*.scene.control.TextField?>

<?import*javafx*.scene.control.PasswordField?>

<?import*javafx*.scene.control.Button?>

<GridPane *fx***:***controller*="com.javaguides.javafx.login.LoginController"

*xmlns***:***fx*="http://javafx.com/fxml" *alignment*="center"

*hgap*="10" *vgap*="10">

    <padding>

        <Insets *top*="40" *right*="40" *bottom*="40" *left*="40"/>

    </padding>

    <columnConstraints>

        <ColumnConstraints *minWidth*="100" *prefWidth*="100"

*maxWidth*="Infinity" *halignment*="RIGHT"></ColumnConstraints>

        <ColumnConstraints *minWidth*="200" *prefWidth*="200"

*maxWidth*="Infinity" *hgrow*="ALWAYS"></ColumnConstraints>

    </columnConstraints>

*<!-- Add Header Label -->*

    <Label *text*="RUAS GROUP PROJECT STAFF LOGIN" *GridPane.columnIndex*="0"

*GridPane.rowIndex*="0" *GridPane.columnSpan*="2"

*GridPane.rowSpan*="1" *GridPane.halignment*="CENTER" >

        <font>

            <Font *name*="Arial" *size*="24" ></Font>

        </font>

        <GridPane.margin>

            <Insets *top*="20" *right*="0" *bottom*="20" *left*="0"></Insets>

        </GridPane.margin>

    </Label>

*<!-- Add StaffID Label -->*

    <Label *text*="User ID : " *GridPane.columnIndex*="0"

*GridPane.rowIndex*="2" ></Label>

*<!-- Add StaffID Text Field -->*

    <TextField *fx***:***id*="staffIDField" *prefHeight*="40"

*GridPane.columnIndex*="1" *GridPane.rowIndex*="2"/>

*<!-- Add Password Label -->*

    <Label *text*="Password : " *GridPane.columnIndex*="0"

*GridPane.rowIndex*="3" ></Label>

*<!-- Add Password Field -->*

    <PasswordField *fx***:***id*="passwordField" *prefHeight*="40"

*GridPane.columnIndex*="1" *GridPane.rowIndex*="3"/>

*<!-- Add Submit Button -->*

    <Button *fx***:***id*="submitButton" *text*="Submit"

*prefWidth*="100" *prefHeight*="40" *defaultButton*="true"

*GridPane.columnIndex*="0" *GridPane.rowIndex*="4"

*GridPane.columnSpan*="2" *GridPane.rowSpan*="1"

*GridPane.halignment*="CENTER"

*onAction*="#login">

        <GridPane.margin>

            <Insets *top*="20" *right*="0" *bottom*="20" *left*="0"></Insets>

        </GridPane.margin>

    </Button>

</GridPane>

We also specify padding of 40px on each side. The layout also defines the controller that will be used to handle any mouse or keyboard events using fx:controller property.

GridPane.columnIndex and GridPane.rowIndex properties allow us to place ui controls in a particular cell.

The Submit button has an onAction property which calls a method named submitButton. This method has to be defined in the FXML controller and that’s we will create in the next step.

## LoginController

**package** com.javaguides.javafx.login;

*import* java.sql.SQLException;

*import* javafx.event.ActionEvent;

*import* javafx.fxml.FXML;

*import* javafx.scene.control.Alert;

*import* javafx.scene.control.Alert.AlertType;

*import* javafx.scene.control.Button;

*import* javafx.scene.control.PasswordField;

*import* javafx.scene.control.TextField;

*import* javafx.stage.Window;

*public* class LoginController {

    @**FXML**

*private* TextField staffIDField;

    @**FXML**

*private* PasswordField passwordField;

    @**FXML**

*private* Button submitButton;

    @**FXML**

*public* *void* login(ActionEvent **event**) *throws* SQLException {

        Window owner **=** submitButton.getScene().getWindow();

        System.*out*.println(staffIDField.getText());

        System.*out*.println(passwordField.getText());

**if** (staffIDField.getText().isEmpty()) {

            showAlert(Alert.*AlertType*.*ERROR*, owner, "Form Error!",

                "Please enter your staffID id");

**return**;

        }

**if** (passwordField.getText().isEmpty()) {

            showAlert(Alert.*AlertType*.*ERROR*, owner, "Form Error!",

                "Please enter a password");

**return**;

        }

        String staffID **=** staffIDField.getText();

        String password **=** passwordField.getText();

        RUASGROUPPROJECT ruasgp **=** **new** RUASGROUPPROJECT();

*boolean* flag **=** ruasgp.validate(staffId, password);

**if** (**!**flag) {

            infoBox("Please enter correct StaffID and Password", null, "Failed");

        } **else** {

            infoBox("Login Successful!", null, "Failed");

        }

    }

*public* *static* *void* infoBox(String **infoMessage**, String **headerText**, String **title**) {

        Alert alert **=** **new** Alert(AlertType.*CONFIRMATION*);

        alert.setContentText(infoMessage);

        alert.setTitle(title);

        alert.setHeaderText(headerText);

        alert.showAndWait();

    }

*private* *static* *void* showAlert(Alert.AlertType **alertType**, Window **owner**, String **title**, String **message**) {

        Alert alert **=** **new** Alert(alertType);

        alert.setTitle(title);

        alert.setHeaderText(null);

        alert.setContentText(message);

        alert.initOwner(owner);

        alert.show();

    }

}

## JDBC Connection

Here is complete code to validate user login form-data with MySQL database:

*import* java.sql.Connection;

*import* java.sql.DriverManager;

*import* java.sql.PreparedStatement;

*import* java.sql.ResultSet;

*import* java.sql.SQLException;

*public* class RUASGROUPPROJECT {

*private* *static* *final* String DATABASE\_URL **=** "jdbc:mysql://localhost:3306/staff\_db?useSSL=false";

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

*private* *static* *final* String DATABASE\_PASSWORD **=** "root";

*private* *static* *final* String SELECT\_QUERY **=** "SELECT \* FROM staff WHERE staff\_id = ? and password = ?";

*public* *boolean* validate(String **staffID**, String **password**) *throws* SQLException {

**try** (Connection connection **=** DriverManager

            .getConnection(DATABASE\_URL, DATABASE\_USERNAME, DATABASE\_PASSWORD);

            PreparedStatement preparedStatement **=** connection.prepareStatement(SELECT\_QUERY)) {

            preparedStatement.setString(1, staffID);

            preparedStatement.setString(2, password);

            System.*out*.println(preparedStatement);

            ResultSet resultSet **=** preparedStatement.executeQuery();

**if** (resultSet.next()) {

**return** true;

            }

        } **catch** (SQLException **e**) {

*// print SQL exception information*

            printSQLException(e);

        }

**return** false;

    }

*public* *static* *void* printSQLException(SQLException **ex**) {

**for** (Throwable e**:** ex) {

**if** (e **instanceof** SQLException) {

                e.printStackTrace(System.*err*);

                System.*err*.println("SQLState: " **+** ((SQLException) e).getSQLState());

                System.*err*.println("Error Code: " **+** ((SQLException) e).getErrorCode());

                System.*err*.println("Message: " **+** e.getMessage());

                Throwable t **=** ex.getCause();

**while** (t **!=** null) {

                    System.*out*.println("Cause: " **+** t);

                    t **=** t.getCause();

                }

            }

        }

    }

}