Department of Computer Science & Engineering, SDMCET, Dharwad-2

AOOP Assignment Submission Report

[Submitted as part of CTA Assignment No-1]

Course:	Advanced Object-Oriented Programming	Course Code:	18UCSE508
Semester:	V	Division:	A

Submitted by:

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1. Problem Definition:

Q1. Write a Java program to build the GUI application using JavaFX for the following requirements:

a) Read user name and password using appropriate JavaFX controls.

b) Validate the input. If user name and password are matched with the assumed values, then

display the welcome scene with proper text.

c) If user name and password don't match, then raise appropriate exception.

2. Java Program:

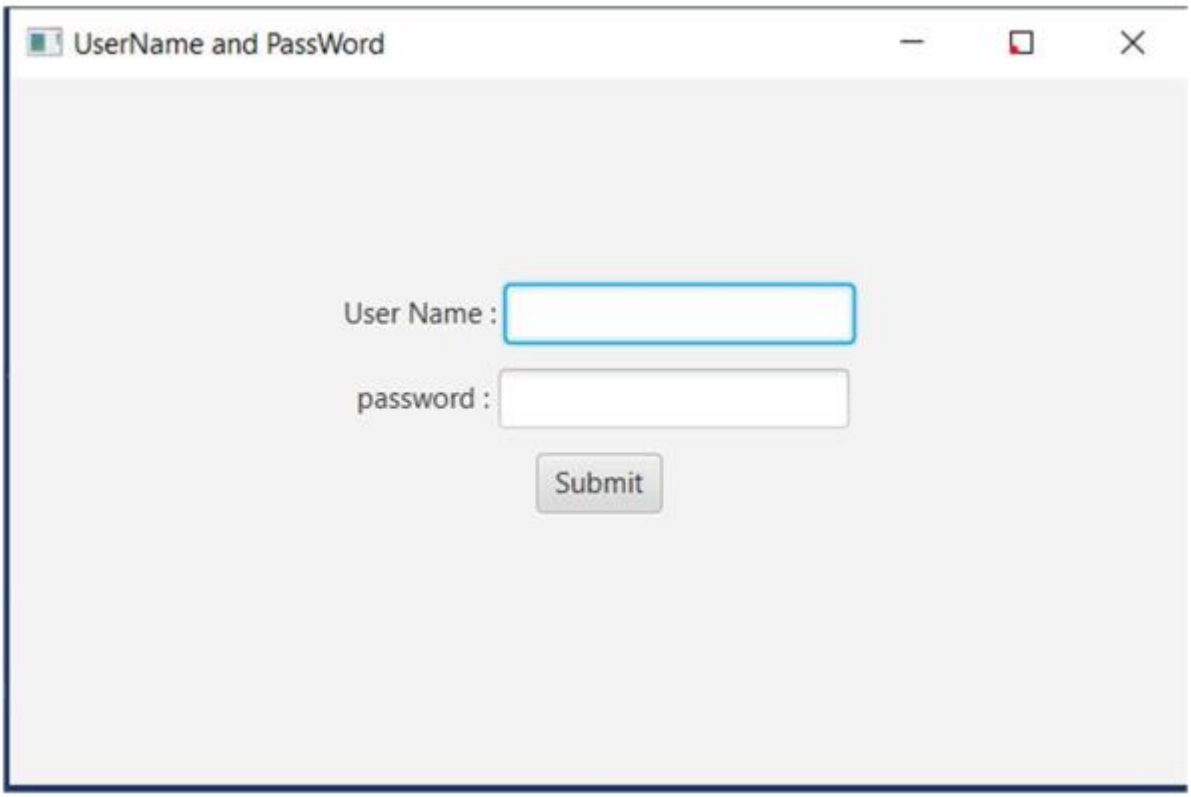
```
import javafx.application.Application;
import javafx.geometry.Pos;
import javafx.scene.Scene;
import javafx.scene.control.Button;
import javafx.scene.control.Label;
import javafx.scene.control.PasswordField;
import javafx.scene.control.TextField;
import javafx.scene.layout.FlowPane;
import javafx.scene.layout.HBox;
import javafx.scene.layout.VBox;
import javafx.stage.Stage;
public class Q1 extends Application {
 public static void main(String[] args) {
 launch(args);
 }
 @Override
```

```
public void start(Stage myStage) {
// TODO Auto-generated method stub
myStage.setTitle("UserName and PassWord");

VBox vbox = new VBox();
HBox hbox = new HBox();
2
Label label = new Label("User Name : ");
TextField tf = new TextField();

// layout for component
HBox hbox2 = new HBox();

Label label2 = new Label(" password : ");
PasswordField pass = new PasswordField();

// to keep components center
hbox.setAlignment(Pos.CENTER);
hbox2.setAlignment(Pos.CENTER);

//adding components to the horizontal layout
hbox.getChildren().addAll(label,tf);
hbox2.getChildren().addAll(label2,pass);

// creating the button
Button btn = new Button("Submit");

// label for show results
```

```
Label label1 = new Label("");

// assumed value for validation
String username = "20cs107";
String password = "soumya";
// setting action on button
btn.setOnAction(e -> {
// getting the values from the field
String EUsername = tf.getText();
String Epassword = pass.getText();
3

// if entered username and password are equal then create a new welcome
Scene
if(username.equals(EUsername) && password.equals(Epassword)) {
// label1.setText(" : WELCOME : ");
FlowPane flowpane = new FlowPane();
flowpane.setAlignment(Pos.CENTER);
Label welcome = new Label(": Welcome :");
flowpane.getChildren().add(welcome);
Scene myScene1 = new Scene(flowpane,500,300);
myStage.setScene(myScene1);
}else {
try {
throw new MyException();
}catch(MyException e1){
label1.setText(e1.toString());
}
```

```
 }
 });

 // adding horizontal components to the main vertical layout
 vbox.getChildren().addAll(hbox,hbox2,btn,label1);

 // adding layout to the scene
 Scene myScene = new Scene(vbox,500,300);

 // sapcing between the vartical components
 vbox.setSpacing(10);
 vbox.setAlignment(Pos.CENTER);

 myStage.setScene(myScene);
myStage.show();
 }
}
class MyException extends Exception{
 public String toString() {
 return "Invaid UserName and Password";
 }
}
```

3. Screen Shots of Execution:



1. Problem Definition:

Q2. Write a Java program to build the GUI application using JavaFX for the following requirements:

a) Create a Menu control to display the menu items: File, Edit & Help.

b) Create sub menus in the order: File → New, Open & Save. Edit → Cut, Copy & Paste.

Help → Help Centre, About Us

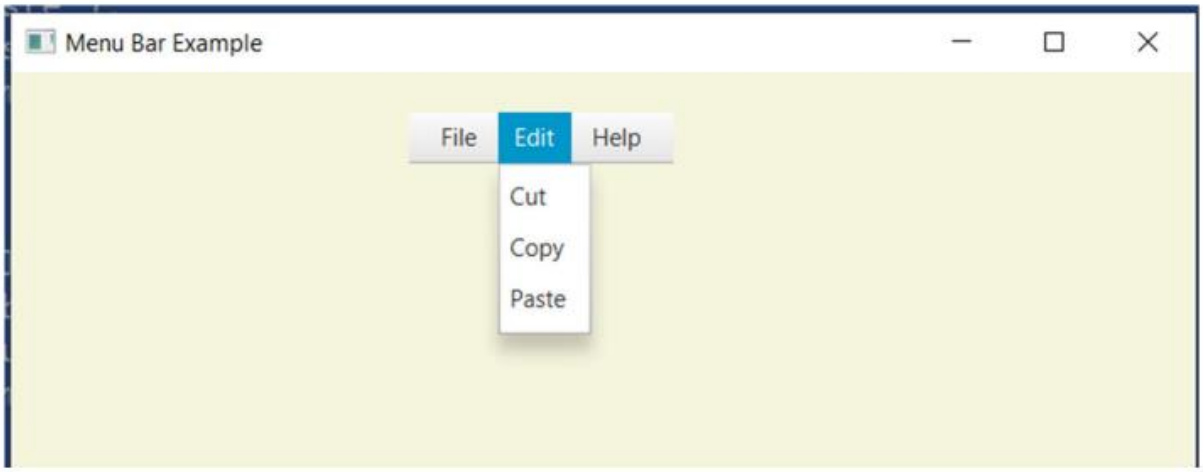
The program must use Mnemonics and Accelerators (wherever appropriate) to Menu Items.

2. Java Program:

```
package application;
import javafx.application.Application;
import javafx.scene.Group;
import javafx.scene.Scene;
import javafx.scene.control.Menu;
import javafx.scene.control.MenuBar;
import javafx.scene.control.MenuItem;
import javafx.scene.paint.Color;
import javafx.stage.Stage;
public class Q2 extends Application {
 public void start(Stage stage) {
 //Creating file menu
 Menu file = new Menu("File");
 //Creating file menu items
 MenuItem item1 = new MenuItem("New");
 MenuItem item2 = new MenuItem("Open");
 MenuItem item3 = new MenuItem("Save");
 //Adding all the menu items to the file menu
 file.getItems().addAll(item1, item2, item3);
 //Creating edit menu
 Menu edit = new Menu("Edit");
 //Creating fileList menu items
 MenuItem item6 = new MenuItem("Cut");
 MenuItem item7 = new MenuItem("Copy");
 MenuItem item8 = new MenuItem("Paste");
 //Adding all the items to File List menu
 edit.getItems().addAll(item6, item7, item8);
 //Creating help menu
```

```
 Menu help = new Menu("Help");
 MenuItem item9 = new MenuItem("Help center");
 MenuItem item10 = new MenuItem("About Us");
 help.getItems().addAll(item9, item10);
 //Creating a menu bar
 MenuBar menuBar = new MenuBar();
menuBar.setTranslateX(200);
 menuBar.setTranslateY(20);
 //Adding all the menus to the menu bar
 menuBar.getMenus().addAll(file, edit, help);
 //Setting the stage
 Group root = new Group(menuBar);
 Scene scene = new Scene(root, 595, 200, Color.BEIGE);
 stage.setTitle("Menu Bar Example");
 stage.setScene(scene);
 stage.show();
 }
 public static void main(String args[]){
 launch(args);
 }
}
```

3. Screen Shots of Execution:



1. Problem Definition:

Q3. Write a Java program to build the GUI application using JavaFX for the following requirements:

a) Create Context menu involving the menu items in the order: New & View.

b) Create sub menus for the above main context menu: New → File, Folder & Image.

View → Large, Medium & Small.

The context menu must be displayed on right-click of the mouse button.

2. Java Program:

```
package application;

import java.io.FileNotFoundException;

import javafx.application.Application;

import javafx.geometry.Insets;

import javafx.scene.Group;

import javafx.scene.Scene;
```

```
import javafx.scene.control.Button;
import javafx.scene.control.ContextMenu;
import javafx.scene.control.MenuItem;
//import javafx.scene.control.TextField;
import javafx.scene.layout.HBox;
import javafx.scene.paint.Color;
import javafx.stage.Stage;
public class Q3 extends Application {
 public void start(Stage stage) throws FileNotFoundException {
 //Creating the image view
 Button button1 = new Button("new");
 Button button2 = new Button("view");
 //TextField textField = new TextField();
 //Creating a context menu
 ContextMenu contextMenu1 = new ContextMenu();
 //Creating the menu Items for the context menu
 MenuItem item1 = new MenuItem("file");
 MenuItem item2 = new MenuItem("folder");
 MenuItem item3 = new MenuItem("image");
 contextMenu1.getItems().addAll(item1, item2,item3);
 //Adding the context menu to the button and the text field
 ContextMenu contextMenu2 = new ContextMenu();
 //Creating the menu Items for the context menu
 MenuItem item11 = new MenuItem("large");
MenuItem item21 = new MenuItem("medium");
 MenuItem item31 = new MenuItem("small");
 contextMenu2.getItems().addAll(item11, item21,item31);
 // textField.setContextMenu(contextMenu);
 button1.setContextMenu(contextMenu1);
```

```
button2.setContextMenu(contextMenu2);
HBox layout = new HBox(20);
layout.setPadding(new Insets(15, 15, 15, 100));
layout.getChildren().addAll( button1,button2);
//Setting the stage
Scene scene = new Scene(new Group(layout), 595, 150, Color.BEIGE);
stage.setTitle("CustomMenuItem");
stage.setScene(scene);
stage.show();
}
public static void main(String args[]){
launch(args);
}
}
```

3. Screen Shots of Execution:

1. Problem Definition:

Q4. Write a JavaFX program that produces the following output when executed and displays Dialog Box (as shown in Figure.2) on click of Register button (as shown in Figure.1):

2. Java Program:

```
import javafx.application.Application;
import javafx.geometry.Insets;
import javafx.geometry.Pos;
import javafx.scene.control.Dialog;
import javafx.scene.control.DialogPane;
import javafx.scene.Scene;
import javafx.scene.control.Button;
import javafx.scene.control.CheckBox;
import javafx.scene.control.ChoiceBox;
import javafx.scene.control.DatePicker;
import javafx.scene.layout.BorderPane;
//import javafx.scene.control.Button;
import javafx.scene.image.Image;
import javafx.scene.image.ImageView;
import javafx.scene.control.ButtonType;
import javafx.scene.control.Label;
//import javafx.scene.control.Label;
//import javafx.scene.control.ListView;
import javafx.scene.control.RadioButton;
import javafx.scene.layout.GridPane;
import javafx.scene.text.Text;
import javafx.scene.control.TextField;
import javafx.scene.control.ToggleGroup;
//import javafx.scene.control.ToggleButton;
import javafx.stage.Stage;
```

```
public class Q4 extends Application {
 @Override
 public void start(Stage stage) {
 //Label for name
 BorderPane root = new BorderPane();
 stage.setTitle(" JavaFX Registration form");
 // label headerLabel = new Label("Registration Form");
 Label label = new Label("Employee Registration Form");
 // Object root;
 root.setTop(label);
 //root.setAlignment(label, Pos.CENTER);
 Text nameLabel = new Text("Enter your Name");

 //Text field for name
 TextField nameText = new TextField();

 //Label for date of birth
Text dobLabel = new Text("Enter Date of birth");

 //date picker to choose date
 DatePicker datePicker = new DatePicker();

 //Label for gender
 Text genderLabel = new Text("Enter your Gender");
 //Toggle group of radio buttons
 ToggleGroup groupGender = new ToggleGroup();
 RadioButton maleRadio = new RadioButton("male");
 maleRadio.setToggleGroup(groupGender);
 RadioButton femaleRadio = new RadioButton("female");
```

```
femaleRadio.setToggleGroup(groupGender);

Text selectyourqualificationLabel = new Text("Select your qualification");

//check box for education
CheckBox ugCheckBox = new CheckBox("UG");
ugCheckBox.setIndeterminate(false);

//check box for education
CheckBox pgCheckBox = new CheckBox("PG");
pgCheckBox.setIndeterminate(false);
CheckBox phdCheckBox = new CheckBox("PhD");
phdCheckBox.setIndeterminate(false);

//Label for location
Text locationLabel = new Text("select your state");
//Choice box for location
ChoiceBox locationchoiceBox = new ChoiceBox();
locationchoiceBox.getItems().addAll
("Karnataka", "Tamilnadu", "Delhi", "Mumbai", "AP");
Button buttonRegister = new Button("Register");
//Creating a Grid Pane
GridPane gridPane = new GridPane();
//Setting size for the pane
gridPane.setMinSize(500, 500);

//Setting the padding
gridPane.setPadding(new Insets(10, 10, 10, 10));
```

```
//Setting the vertical and horizontal gaps between the columns
gridPane.setVgap(5);
gridPane.setHgap(5);
//Setting the Grid alignment
gridPane.setAlignment(Pos.CENTER);

//Arranging all the nodes in the grid
gridPane.add(nameLabel, 0, 0);
gridPane.add(nameText, 1, 0);

gridPane.add(dobLabel, 0, 3);
gridPane.add(datePicker, 1, 3);
gridPane.add(genderLabel, 0, 2);
gridPane.add(maleRadio, 1, 2);
gridPane.add(femaleRadio, 2, 2);
// gridPane.add(reservationLabel, 0, 3);
//gridPane.add(yes, 1, 3);

gridPane.add(selectyourqualificationLabel , 0, 5);
gridPane.add(ugCheckBox, 1, 5);
gridPane.add(pgCheckBox, 2, 5);
gridPane.add(phdCheckBox,3, 5);
gridPane.add(locationLabel, 0, 4);
gridPane.add(locationchoiceBox, 1, 4);
gridPane.add(buttonRegister, 1, 8);

//Styling nodes
buttonRegister.setStyle(
"-fx-font: normal bold 15px 'serif' " );
```

```
nameLabel.setStyle("-fx-font: normal bold 15px 'serif' ");
dobLabel.setStyle("-fx-font: normal bold 15px 'serif' ");
genderLabel.setStyle("-fx-font: normal bold 15px 'serif' ");
selectyourqualificationLabel.setStyle("-fx-font: normal bold 15px 'serif' ");
locationLabel.setStyle("-fx-font: normal bold 15px 'serif' ");
gridPane.setStyle("-fx-background-color: white;");
buttonRegister.setOnAction(e->{
// creating a dialog box
Dialog dialog = new Dialog();
dialog.setTitle("Registration Successfull");
dialog.setHeaderText("Registration Status");
dialog.setContentText("Employee Registration is successfull");
// adding image to the dialog box
// Image img = new Image("",50,50,true,true);
//ImageView imageview = new ImageView(img);
//dialog.setGraphic(imageview);
// adding button to the dialog box
dialog.getDialogPane().getButtonTypes().add(ButtonType.OK);
dialog.show();
});
Scene scene = new Scene(gridPane);
// stage.setTitle("Registration Form");
//Adding scene to the stage
stage.setScene(scene);
//Displaying the contents of the stage
stage.show();
}
public static void main(String args[]){
launch(args);
```

```
}
}
}
```

3. Screen Shots of Execution: