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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ASSIGNMENT-2

[18UCSE508- ADVANCED OBJECT ORIENTED PROGRAMMING]

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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.**
- package application;**

```
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 Question1 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();
```

```

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 = "20cs072";
String password = "pooja";

// setting action on button
btn.setOnAction(e -> {
    // getting the values from the field
    String EUsername = tf.getText();
    String Epassword = pass.getText();

```

```

// 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);

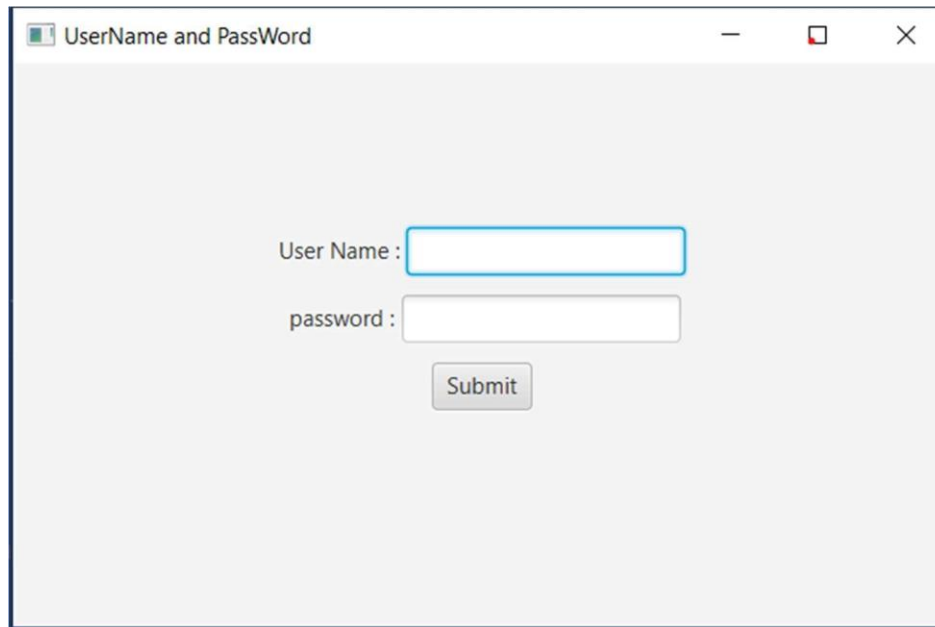
```

```

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

```

Output:



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

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 Question2 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);

        Group root = new Group(menuBar);

        Scene scene = new Scene(root, 595, 200, Color.BEIGE);

stage.setTitle("Menu Bar Example");

stage.setScene(scene);

        stage.show();

    }

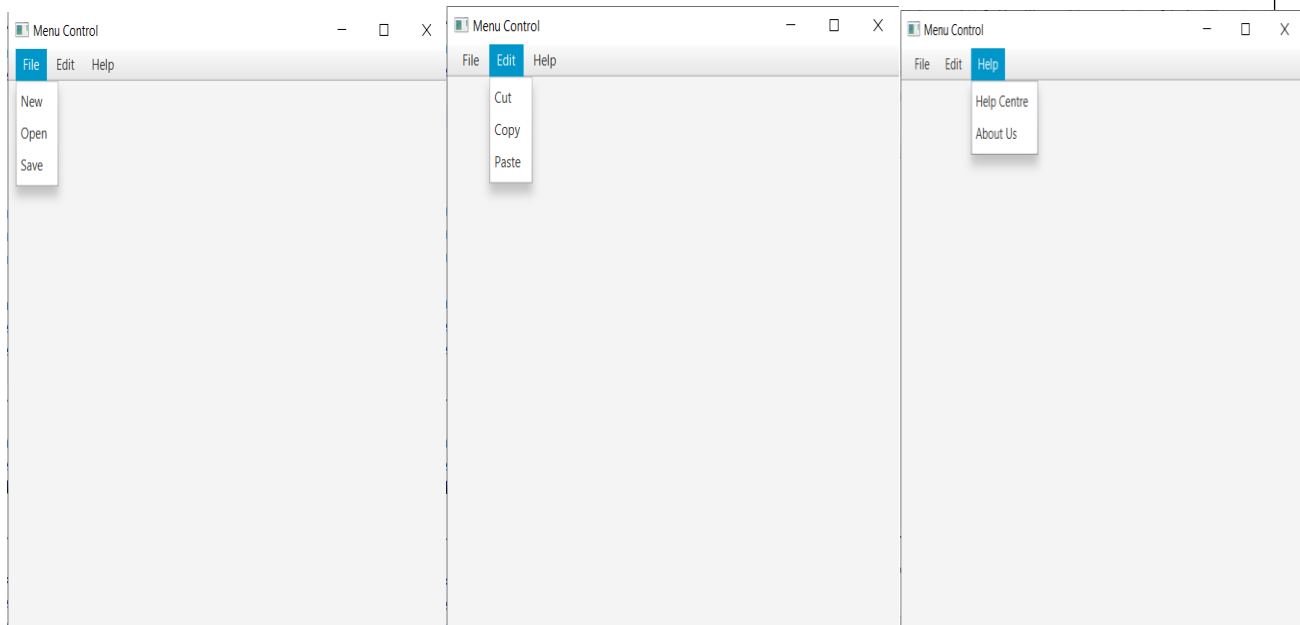
    public static void main(String args[]){

        launch(args);

    }
}

```

Output:



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

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

```
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 Question3 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);

button1.setContextMenu(contextMenu1);

button2.setContextMenu(contextMenu2);

HBox layout = new HBox(20);

layout.setPadding(new Insets(15, 15, 15, 100));

layout.getChildren().addAll( button1,button2);

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[]){

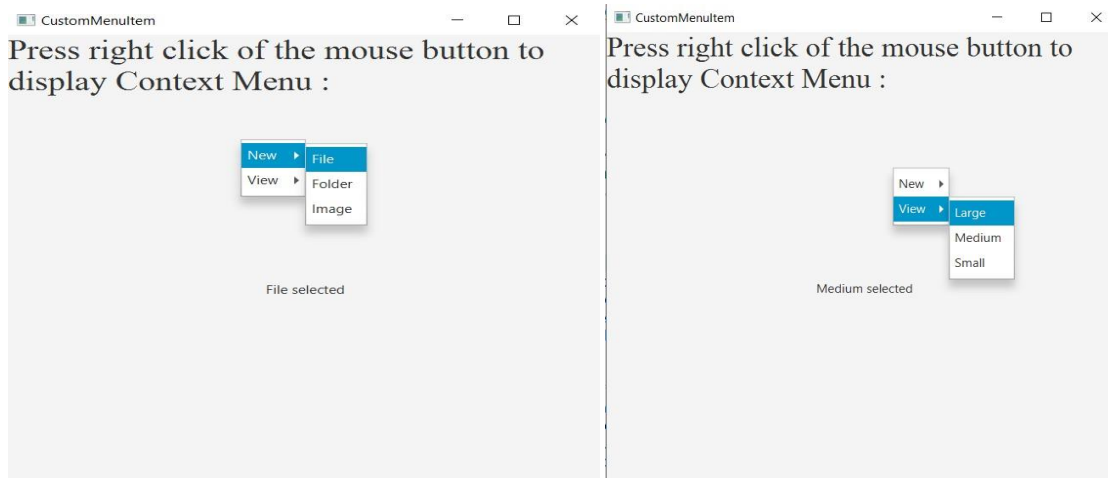
    launch(args);

}

}

```

Output:



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):

```
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 Question4 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");

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);
}
}
}

```

output

JavaFX Registration form

— □ ×

Enter your Name

Enter your Gender

☐

male

☐

female

Enter Date of birth



select your state

Select your qualification

☐

UG

☐

PG

☐

PhD

Register