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**Department**
**of**
**COMPUTER SCIENCE AND ENGINEERING**

# ASSIGNMENT-2

## [18UCSE508- ADVANCED OBJECT ORIENTED PROGRAMMING]

**Course Teacher: Prof. Indira R Umarji**

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Submitted
By

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**2SD20CS108**
**5th Semester B division**

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.

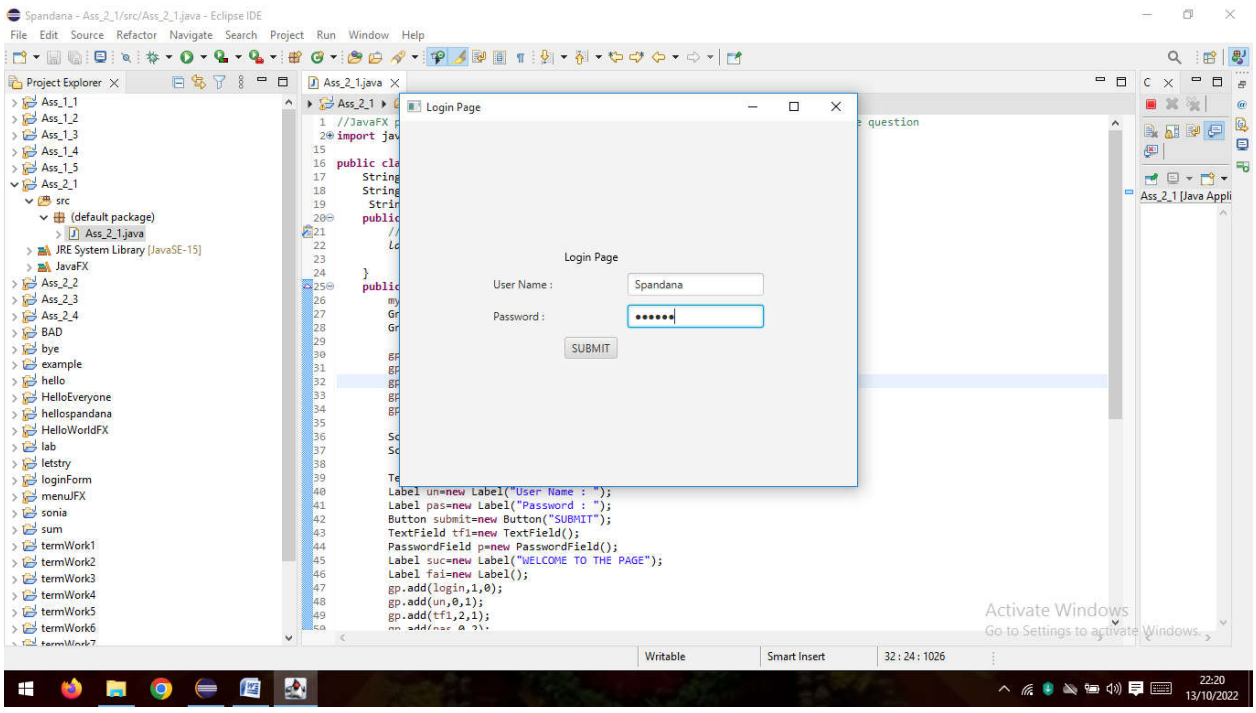
```
//JavaFX program to build GUI application for the requirements stated above in the question
import javafx.application.Application;
import javafx.event.ActionEvent;
import javafx.event.EventHandler;
import javafx.geometry.Insets;
import javafx.geometry.Pos;
import javafx.scene.Scene;
import javafx.scene.control.Button;
import javafx.scene.control.Label;
import javafx.scene.control.PasswordField;
import javafx.scene.control.TextField;
import javafx.scene.layout.GridPane;
import javafx.scene.text.Text;
import javafx.stage.Stage;

public class Ass_2_1 extends Application {
        String username="Spandana";
```

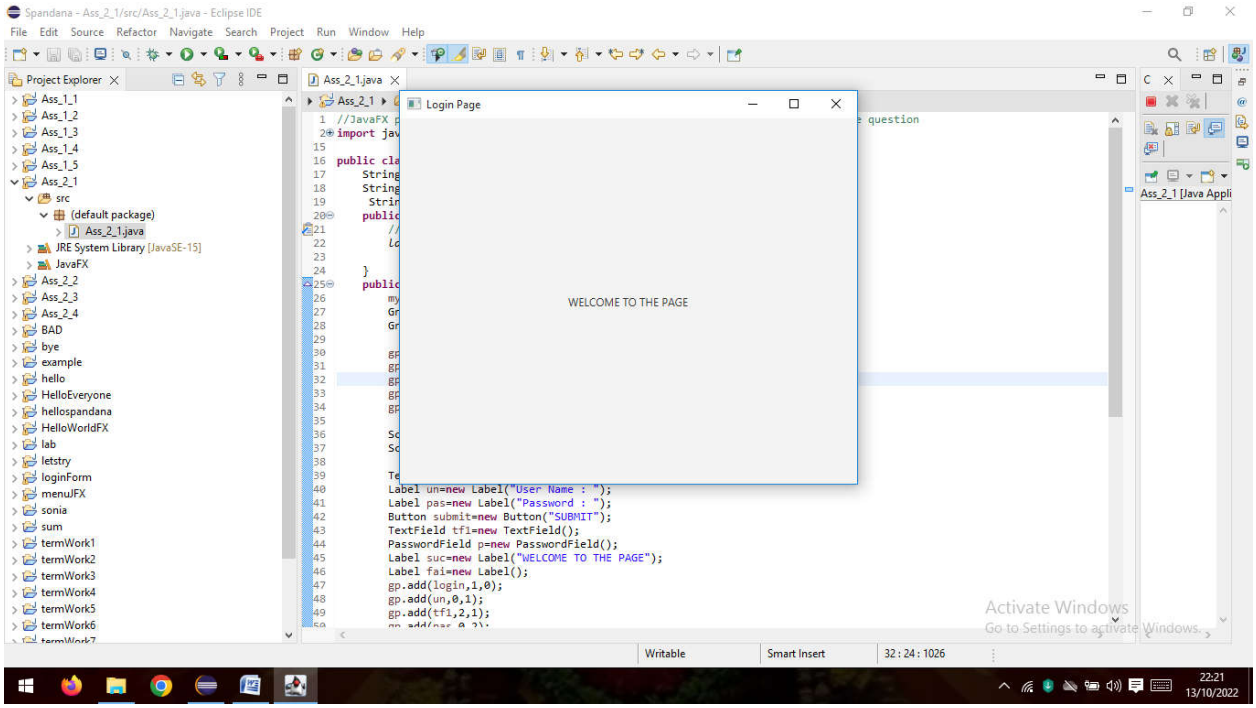
```
        String password="Spandu";
    String checkUser,checkPass;
        public static void main(String[] args) {
                // TODO Auto-generated method stub
                launch(args);


        }
        public void start(Stage myStage) throws Exception {
                myStage.setTitle("Login Page");
                GridPane gp=new GridPane();
                GridPane gp1=new GridPane();


                gp.setAlignment(Pos.CENTER);
                gp1.setAlignment(Pos.CENTER);
                gp.setHgap(10);
                gp.setVgap(10);
                gp.setPadding(new Insets(20,20,20,20));


                Scene scene1=new Scene(gp,500,400);
                Scene scene2=new Scene(gp1,500,400);


                Text login=new Text("Login Page");
                Label un=new Label("User Name : ");
                Label pas=new Label("Password : ");
                Button submit=new Button("SUBMIT");
```

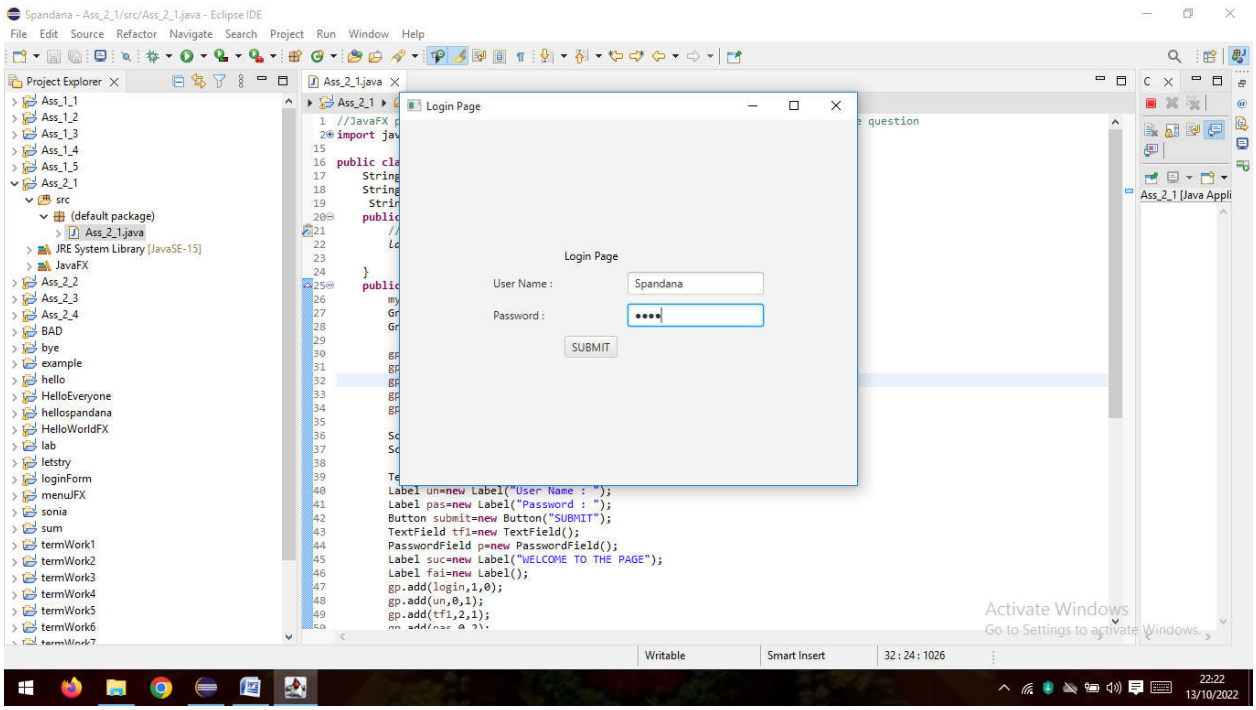
```
TextField tf1=new TextField();
PasswordField p=new PasswordField();
Label suc=new Label("WELCOME TO THE PAGE");
Label fai=new Label();
gp.add(login,1,0);
gp.add(un,0,1);
gp.add(tf1,2,1);
gp.add(pas,0,2);
gp.add(p,2,2);
gp.add(submit,1,3);
submit.setOnAction(new EventHandler<ActionEvent>() {
        public void handle(ActionEvent e) {
                checkUser=tf1.getText().toString();
                checkPass=p.getText().toString();
                if(checkUser.equals(username)&&checkPass.equals(password)) {
                        myStage.setScene(scene2);
                        gp1.getChildren().addAll(suc);

                }
                else {
                        gp.add(fai, 1, 5);
                        fai.setText("Invalid Username or Password");

        }
        }
```

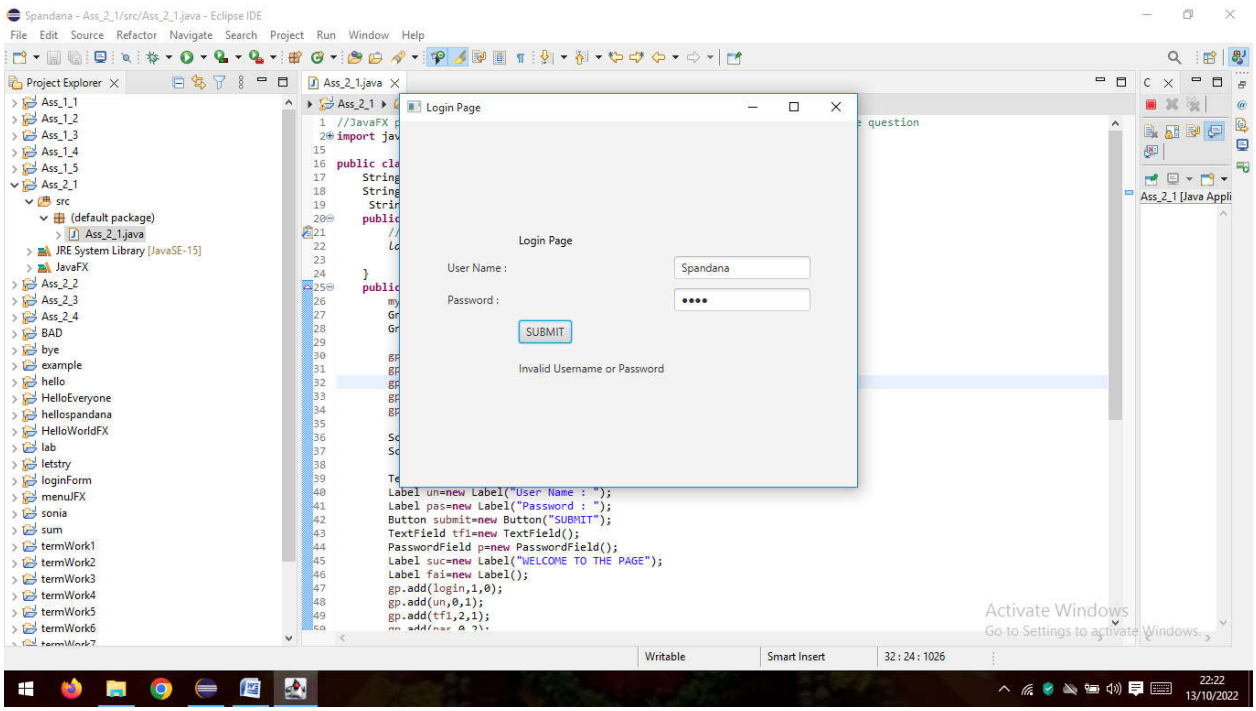
```
        });


        myStage.setScene(scene1);

        myStage.show();

    }

}
```

OUTPUT :




Spandana - Ass_2_1/src/Ass_2_1.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer
Ass_1_1
Ass_1_2
Ass_1_3
Ass_1_4
Ass_1_5
Ass_2_1
src
(default package)
Ass_2_1.java
JRE System Library [JavaSE-15]
JavaFX
Ass_2_2
Ass_2_3
Ass_2_4
BAD
bye
example
hello
HelloEveryone
hellospandana
HelloWorldFX
lab
letstry
loginForm
menuJFX
sonia
sum
termWork1
termWork2
termWork3
termWork4
termWork5
termWork6
Ass_2_1.java
Login Page
WELCOME TO THE PAGE
Label un=new Label("User Name : ");
Label pas=new Label("Password : ");
Button submit=new Button("SUBMIT");
TextField tf1=new TextField();
PasswordField p=new PasswordField();
Label suc=new Label("WELCOME TO THE PAGE");
Label fai=new Label();
gp.add(login,1,0);
gp.add(un,0,1);
gp.add(tf1,2,1);
Activate Windows
Go to Settings to activate Windows.
Writable
Smart Insert
32 : 24 : 1026
22:21
13/10/2022


Spandana - Ass_2_1/src/Ass_2_1.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer
Ass_1_1
Ass_1_2
Ass_1_3
Ass_1_4
Ass_1_5
Ass_2_1
src
(default package)
Ass_2_1.java
JRE System Library [JavaSE-15]
JavaFX
Ass_2_2
Ass_2_3
Ass_2_4
BAD
bye
example
hello
HelloEveryone
hellospandana
HelloWorldFX
lab
letstry
loginForm
menuJFX
sonia
sum
termWork1
termWork2
termWork3
termWork4
termWork5
termWork6
Ass_2_1.java
Login Page
Login Page
User Name :
Spandana
Password :
SUBMIT
Label un=new Label("User Name : ");
Label pas=new Label("Password : ");
Button submit=new Button("SUBMIT");
TextField tf1=new TextField();
PasswordField p=new PasswordField();
Label suc=new Label("WELCOME TO THE PAGE");
Label fai=new Label();
gp.add(login,1,0);
gp.add(un,0,1);
gp.add(tf1,2,1);
Activate Windows
Go to Settings to activate Windows.
Writable
Smart Insert
32 : 24 : 1026
22:22
13/10/2022


Spandana - Ass_2_1/src/Ass_2_1.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer
Ass_1_1
Ass_1_2
Ass_1_3
Ass_1_4
Ass_1_5
Ass_2_1
src
(default package)
Ass_2_1.java
JRE System Library [JavaSE-15]
JavaFX
Ass_2_2
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Ass_2_4
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bye
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HelloWorldFX
lab
letstry
loginForm
menuJFX
sonia
sum
termWork1
termWork2
termWork3
termWork4
termWork5
termWork6
Ass_2_1.java
Login Page
Login Page
User Name :
Spandana
Password :
SUBMIT
Invalid Username or Password
Label un=new Label("User Name : ");
Label pas=new Label("Password : ");
Button submit=new Button("SUBMIT");
TextField tf1=new TextField();
PasswordField p=new PasswordField();
Label suc=new Label("WELCOME TO THE PAGE");
Label fai=new Label();
gp.add(login,1,0);
gp.add(un,0,1);
gp.add(tf1,2,1);
Activate Windows
Go to Settings to activate Windows.
Writable
Smart Insert
32 : 24 : 1026
22:22
13/10/2022

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.

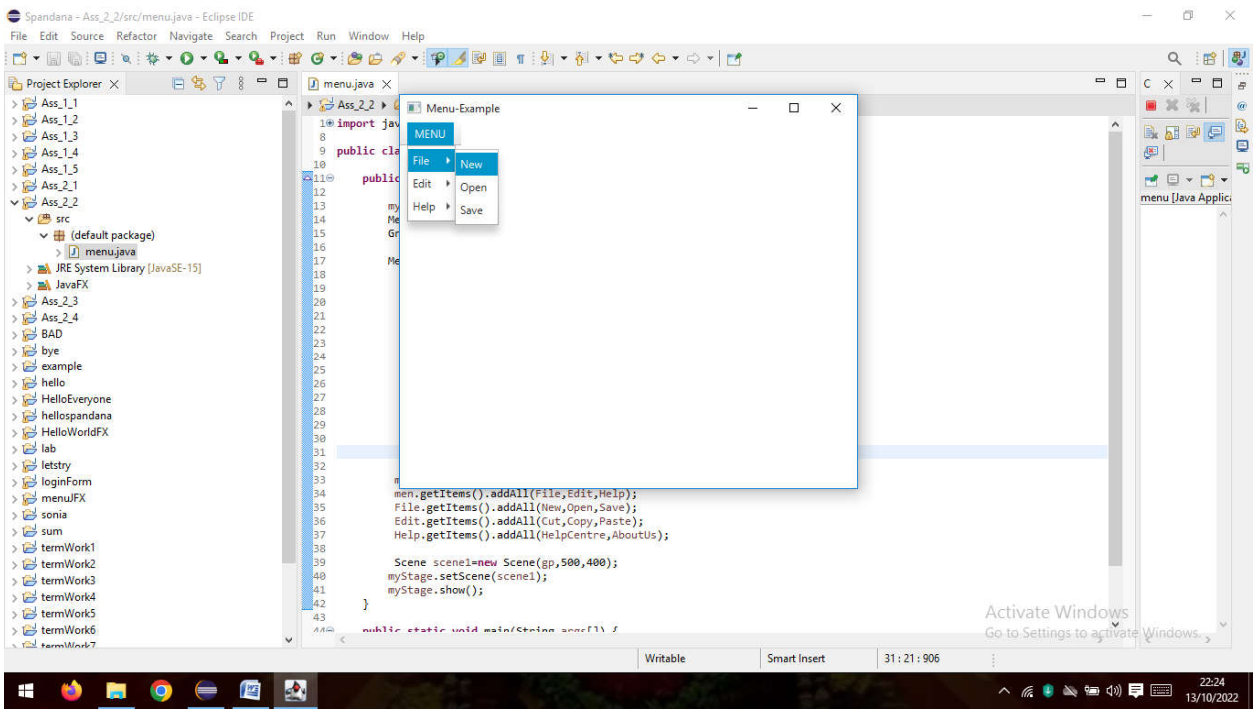
b) Create sub menus in the order: File → New, Open & Save. Edit → Cut, Copy & Paste. Help → Help Centre, About Us

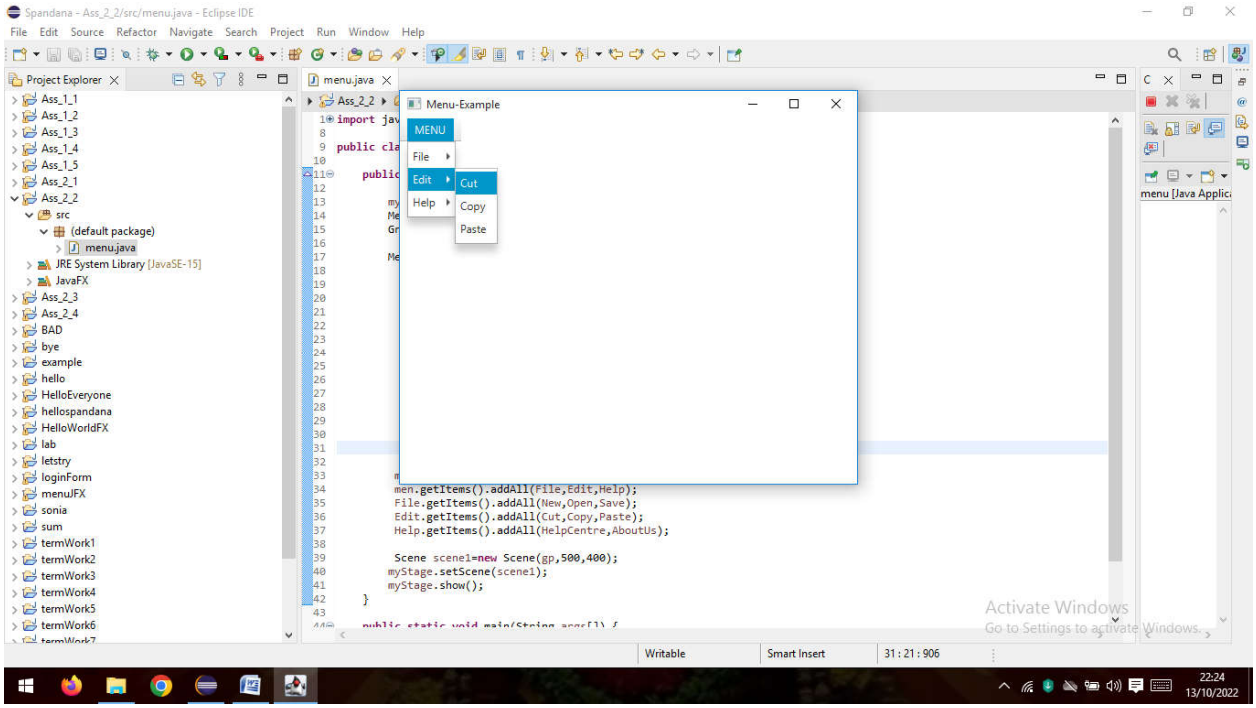
The program must use Mnemonics and Accelerators (wherever appropriate) to Menu Items.

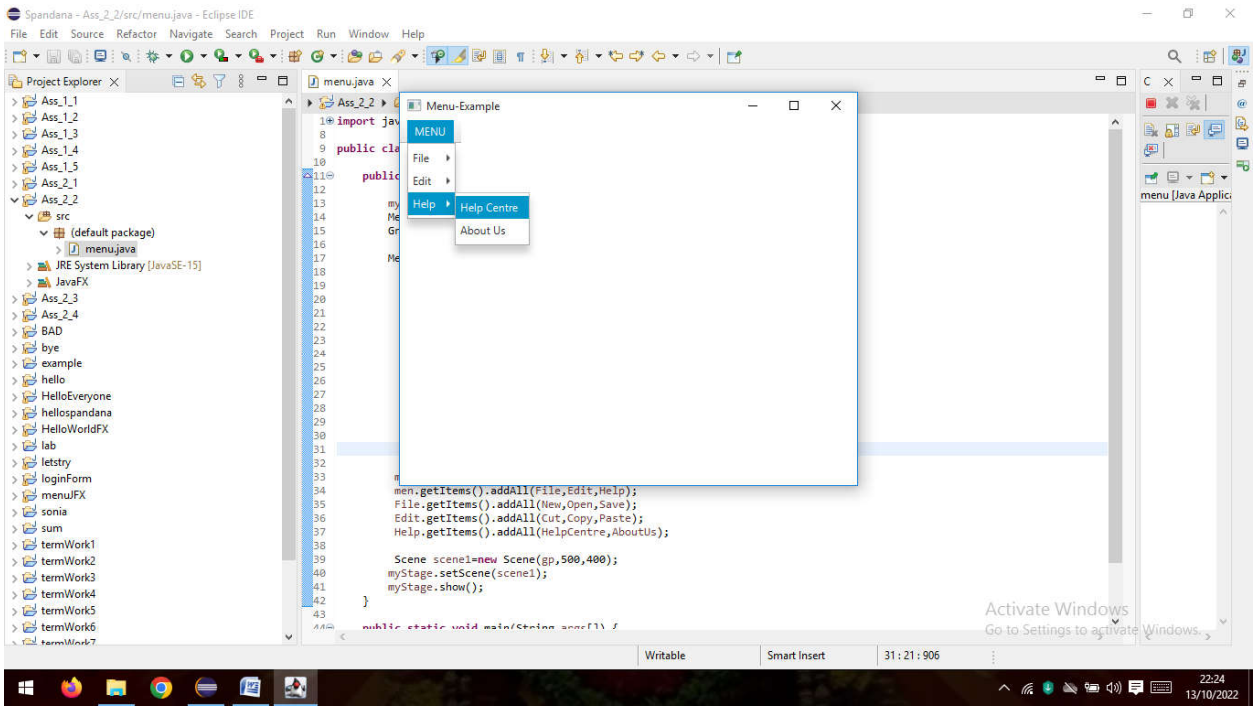
```
//JAVAFX application for illustrating MenuItems and SubMenus
import javafx.application.Application;
import javafx.scene.Group;
import javafx.scene.Scene;
import javafx.scene.control.Menu;
import javafx.scene.control.MenuBar;
import javafx.scene.control.MenuItem;
import javafx.stage.Stage;

public class menu extends Application{

        public void start(Stage myStage)throws Exception {

                myStage.setTitle("Menu-Example");
                MenuBar m=new MenuBar();
                Group gp=new Group(m);

                Menu men=new Menu("MENU");

                 Menu File=new Menu("File");
                   MenuItem New=new MenuItem("New");
                   MenuItem Open=new MenuItem("Open");
                   MenuItem Save=new MenuItem("Save");

                 Menu Edit=new Menu("Edit");
                   MenuItem Cut=new MenuItem("Cut");
                   MenuItem Copy=new MenuItem("Copy");
                   MenuItem Paste=new MenuItem("Paste");

                 Menu Help=new Menu("Help");
                   MenuItem HelpCentre=new MenuItem("Help Centre");
                   MenuItem AboutUs=new MenuItem("About Us");
```

```
                m.getMenus().add(men);
                men.getItems().addAll(File,Edit,Help);
                File.getItems().addAll(New,Open,Save);
                Edit.getItems().addAll(Cut,Copy,Paste);
                Help.getItems().addAll(HelpCentre,AboutUs);

                Scene scene1=new Scene(gp,500,400);
               myStage.setScene(scene1);
               myStage.show();
        }

        public static void main(String args[]) {
                launch(args);
        }

}
```

OUTPUT :




Spandana - Ass_2_2/src/menu.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer
menu.java
Menu-Example
MENU
File
Edit
Help
Cut
Copy
Paste
men.getItems().addAll(File,Edit,Help);
File.getItems().addAll(New,Open,Save);
Edit.getItems().addAll(Cut,Copy,Paste);
Help.getItems().addAll(HelpCentre,AboutUs);
Scene scene1=new Scene(gp,500,400);
myStage.setScene(scene1);
myStage.show();
Activate Windows
Go to Settings to activate Windows.
Writable
Smart Insert
31 : 21 : 906
22:24
13/10/2022


Spandana - Ass_2_2/src/menu.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer
menu.java
Menu-Example
MENU
File
Edit
Help
Help Centre
About Us
men.getItems().addAll(File,Edit,Help);
File.getItems().addAll(New,Open,Save);
Edit.getItems().addAll(Cut,Copy,Paste);
Help.getItems().addAll(HelpCentre,AboutUs);
Scene scene1=new Scene(gp,500,400);
myStage.setScene(scene1);
myStage.show();
Activate Windows
Go to Settings to activate Windows.
Writable
Smart Insert
31 : 21 : 906
22:24
13/10/2022

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.

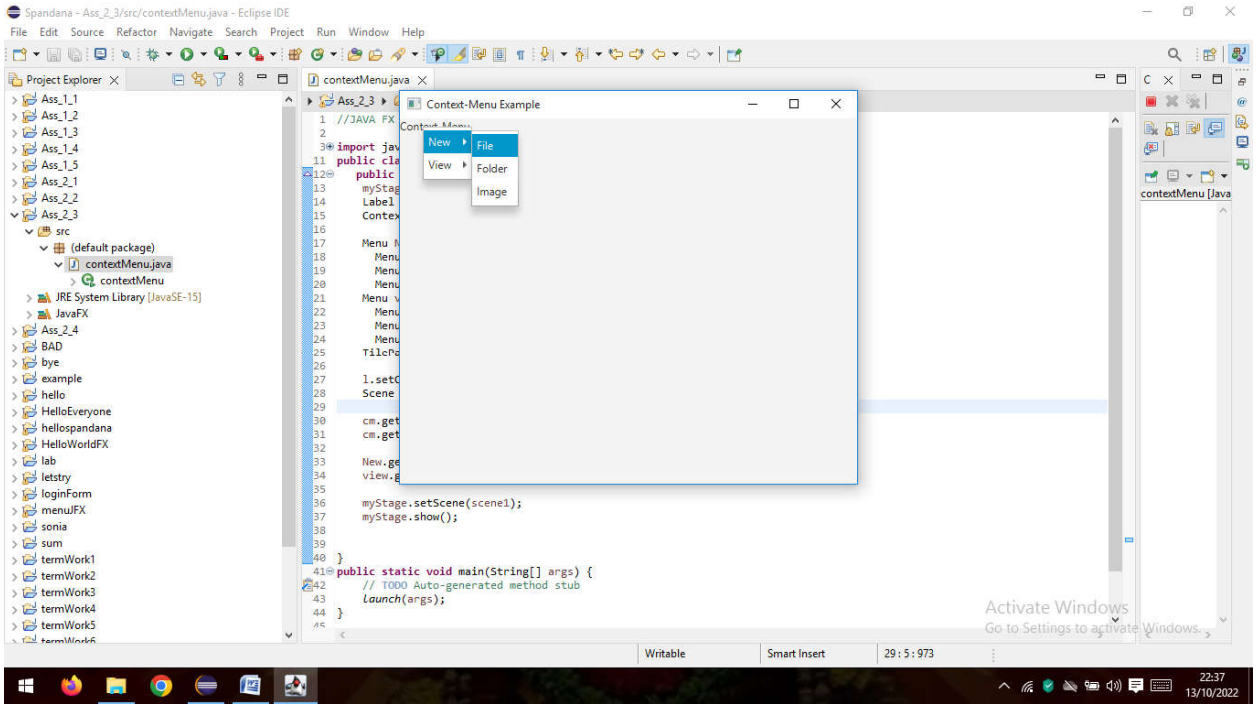
The context menu must be displayed on right-click of the mouse button.//JAVA FX program to build GUI application focusing on Context-Menu

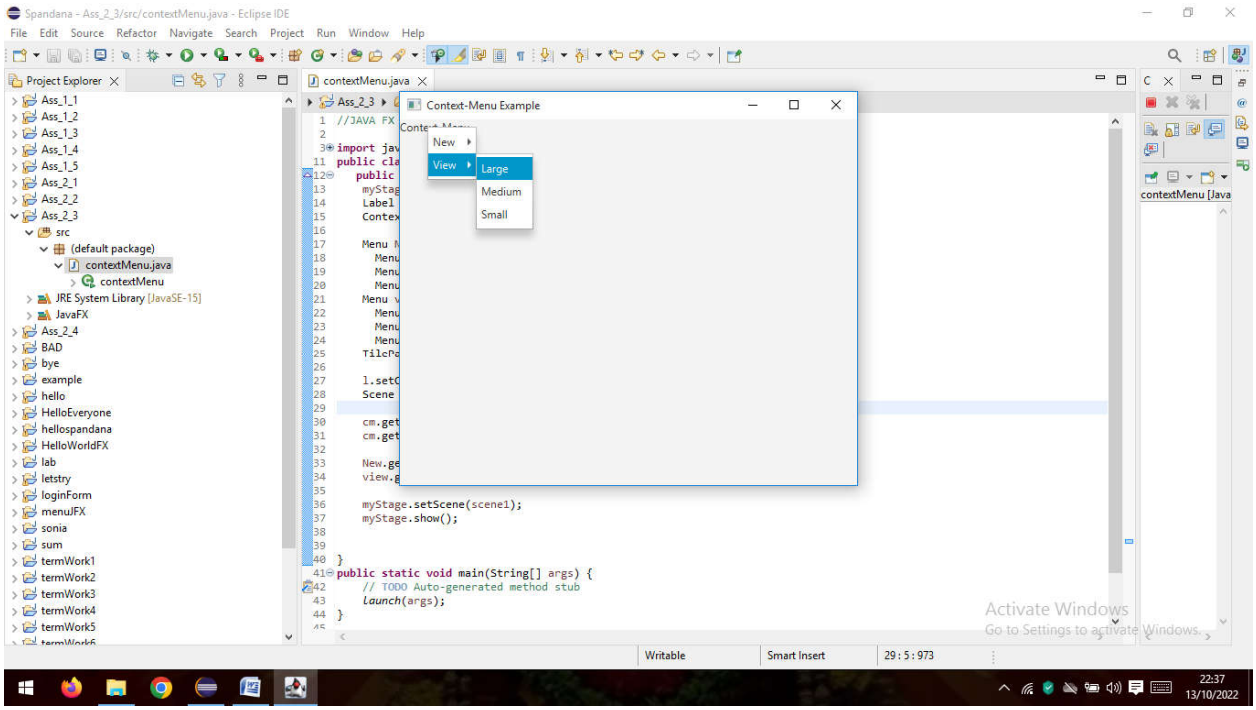
```
import javafx.application.Application;
import javafx.scene.Scene;
import javafx.scene.control.ContextMenu;
import javafx.scene.control.Label;
import javafx.scene.control.Menu;
import javafx.scene.control.MenuItem;
import javafx.scene.layout.TilePane;
import javafx.stage.Stage;
public class contextMenu extends Application {
  public void start(Stage myStage) {
        myStage.setTitle("Context-Menu Example");
        Label l=new Label("Context-Menu");
        ContextMenu cm=new ContextMenu();

        Menu New=new Menu("New");
          MenuItem File=new MenuItem("File");
          MenuItem Folder=new MenuItem("Folder");
```

```
        MenuItem Image=new MenuItem("Image");
        Menu view=new Menu("View");
        MenuItem Large=new MenuItem("Large");
        MenuItem Medium=new MenuItem("Medium");
        MenuItem Small=new MenuItem("Small");
        TilePane tp=new TilePane(l);

        l.setContextMenu(cm);
        Scene scene1=new Scene(tp,500,400);

        cm.getItems().add(New);
        cm.getItems().add(view);

        New.getItems().addAll(File,Folder,Image);
        view.getItems().addAll(Large,Medium,Small);

        myStage.setScene(scene1);
        myStage.show();


}
public static void main(String[] args) {
        // TODO Auto-generated method stub
        launch(args);
}
```

}

OUTPUT:


Context-Menu Example
New
View
File
Folder
Image


Context-Menu Example
New
View
Large
Medium
Small

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):


Figure.1

Figure. 2

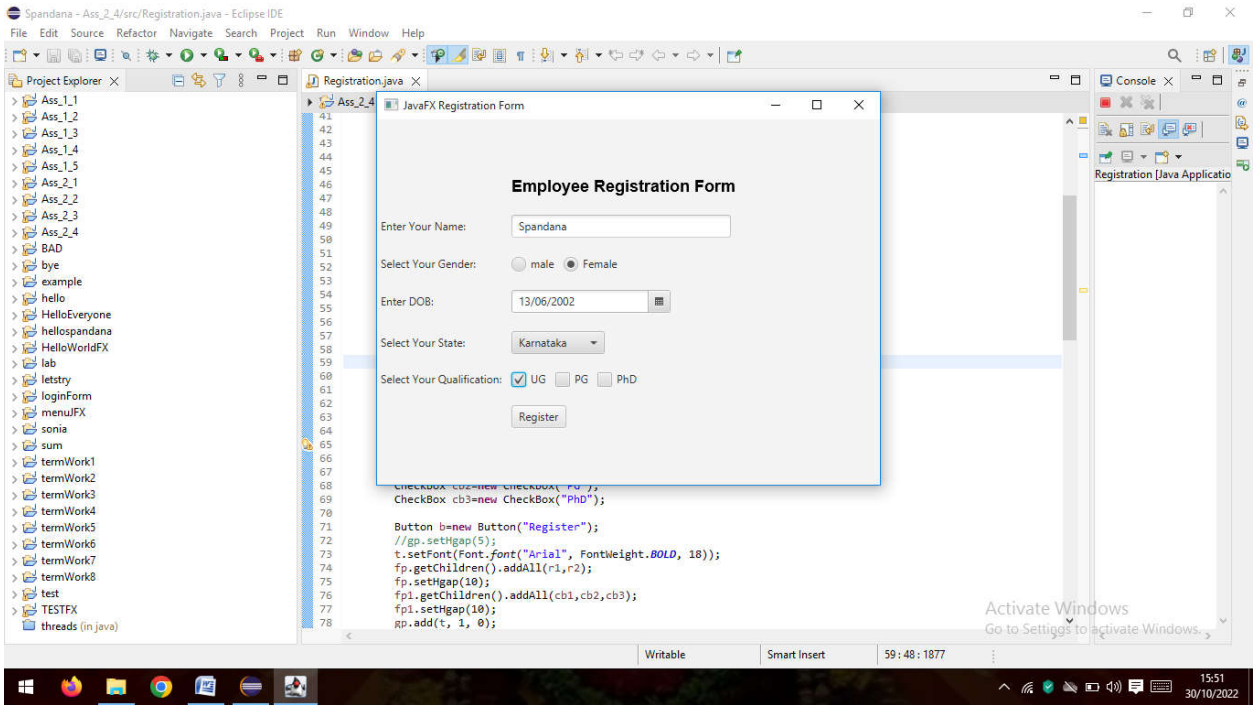
```
//Registration form-JAVAFX

import java.io.FileInputStream;
import java.io.InputStream;
import javafx.application.Application;
import javafx.collections.FXCollections;
import javafx.event.ActionEvent;
import javafx.event.EventHandler;
import javafx.geometry.Pos;
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.control.Label;
import javafx.scene.control.RadioButton;
import javafx.scene.control.TextField;
import javafx.scene.image.Image;
import javafx.scene.image.ImageView;
import javafx.scene.layout.GridPane;
import javafx.scene.shape.Line;
import javafx.scene.text.Font;
import javafx.scene.text.FontWeight;
import javafx.scene.text.Text;
import javafx.stage.Stage;

public class Registration extends Application {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
	launch(args);
	}
```

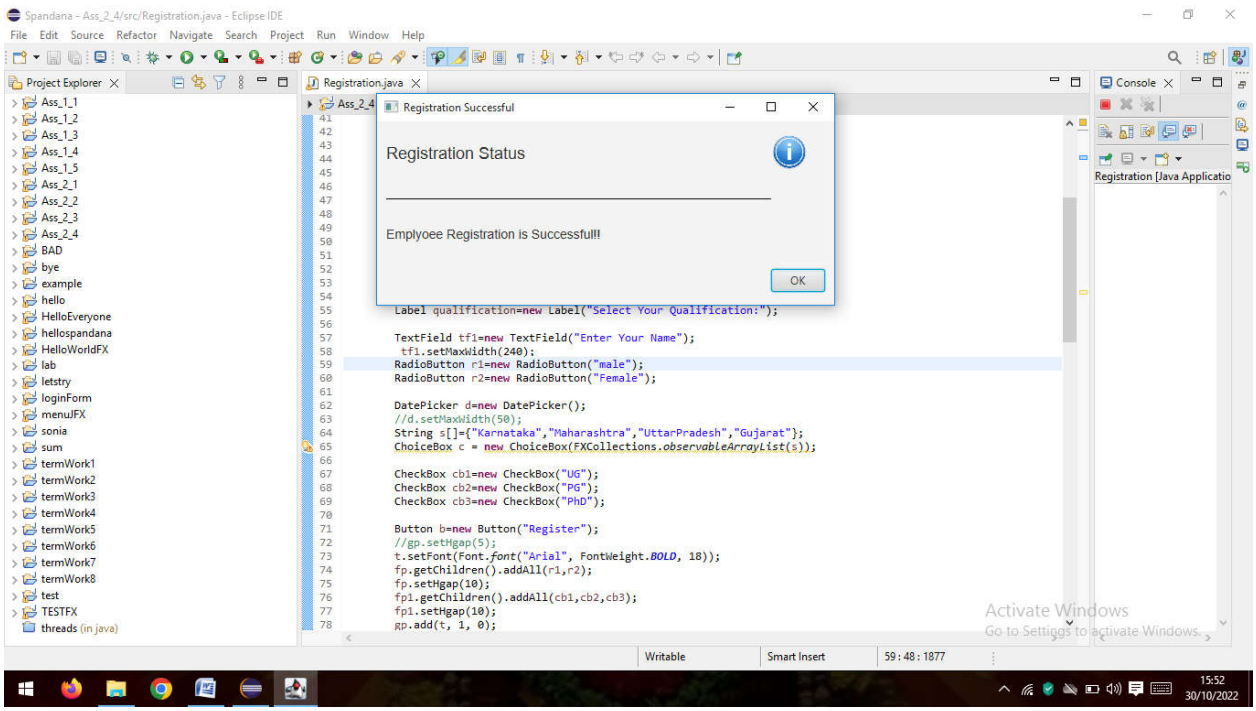
```
public void start(Stage myStage) {
        GridPane gp=new GridPane();
        GridPane gp1=new GridPane();
        gp.setAlignment(Pos.CENTER);
        gp.setHgap(5);
        gp.setVgap(15);
        Scene scene1=new Scene(gp,550,400);
        Scene scene2=new Scene(gp1,500,200);
        myStage.setScene(scene1);


        myStage.setTitle("JavaFX Registration Form");

        Text t=new Text("Emplyoee Registration Form");
        Label name=new Label("Enter Your Name:");
        Label gender =new Label("Select Your Gender:");
        Label dob=new Label("Enter DOB:");
        Label state =new Label("Select Your State:");
        Label qualification=new Label("Select Your Qualification:");

        TextField tf1=new TextField("Enter Your Name");

        RadioButton r1=new RadioButton("male");
        RadioButton r2=new RadioButton("Female");

        DatePicker d=new DatePicker();

        String s[]={"Karnataka","Maharashtra","UttarPradesh","Gujarat"};
        ChoiceBox c = new ChoiceBox(FXCollections.observableArrayList(s));

        CheckBox cb1=new CheckBox("UG");
        CheckBox cb2=new CheckBox("PG");
        CheckBox cb3=new CheckBox("PhD");

        Button b=new Button("Register");

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

        gp.add(t, 1, 0);
        gp.add(name,0,1);
        gp.add(gender, 0, 2);
        gp.add(dob, 0, 3);
        gp.add(state, 0, 4);
        gp.add(qualification, 0, 5);
        gp.add(tf1, 1, 1);
        gp.add(r1, 1, 2);
```

```
                gp.add(r2, 2, 2);
            gp.add(d, 1,3);
                gp.add(c, 1, 4);
                gp.add(cb1, 1, 5);
                gp.add(cb2, 2, 5);
                gp.add(cb3, 3, 5);
                gp.add(b, 1, 6);


                Label regi=new Label("Registration Status");
                Label Empregi=new Label("Emplyoee Registration is Successful!!");
                Line l=new Line();

                regi.setFont(new Font("Arial", 18));
                Empregi.setFont(new Font("Arial", 14));
                Button OK=new Button("    OK    ");
                                b.setOnAction(new EventHandler<ActionEvent>() {
                                        public void handle(ActionEvent e) {
                                                myStage.setTitle("Registration
Successful");
                                                        myStage.setScene(scene2);

                                                        gp1.setVgap(30);
                                                        gp1.setAlignment(Pos.CENTER);



                                                            //creating the image object
                                        try {       InputStream stream = new
FileInputStream("C:\\Users\\joglekar\\Desktop\\Spandana\\info.png");
                                                        Image image = new Image(stream);
                                                        //Creating the image view
                                                        ImageView imageView = new
ImageView();

                                                        //Setting image to the image view
                                                        imageView.setImage(image);
                                                        //Setting the image view parameters
                                                        imageView.setX(10);
                                                        imageView.setY(10);
                                                        imageView.setFitWidth(40);
                                                        imageView.setPreserveRatio(true);
                                                        gp1.add(imageView,1,0);
                                        }       catch(Exception ie) {
                                                System.out.println(ie);
                                        }
```

```
                                        l.setStartX(100.0);
                                        l.setStartY(150.0);
                                        l.setEndX(520.0);
                                        l.setEndY(150.0);

                                                gp1.add(regi,0, 0);
                                                gp1.add(l, 0, 1);
                                                gp1.add(Empregi,0,2);
                                                gp1.add(OK, 1,3);



                                        }
                                });

                myStage.show();
        }

}
```

OUTPUT:




Spandana - Ass_2_4/src/Registration.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer
Ass_1_1
Ass_1_2
Ass_1_3
Ass_1_4
Ass_1_5
Ass_2_1
Ass_2_2
Ass_2_3
Ass_2_4
BAD
bye
example
hello
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HelloWorldFX
lab
letstry
loginForm
menuJFX
sonia
sum
termWork1
termWork2
termWork3
termWork4
termWork5
termWork6
termWork7
termWork8
test
TESTFX
threads (in java)
Registration.java
Registration Successful
Registration Status
Emplyoee Registration is Successful!!
OK
Label qualification=new Label("Select Your Qualification:");
TextField tf1=new TextField("Enter Your Name");
tf1.setMaxWidth(240);
RadioButton r1=new RadioButton("male");
RadioButton r2=new RadioButton("Female");
DatePicker d=new DatePicker();
//d.setMaxWidth(50);
String s[]={"Karnataka","Maharashtra","UttarPradesh","Gujarat"};
ChoiceBox c = new ChoiceBox(FXCollections.observableArrayList(s));
CheckBox cb1=new CheckBox("UG");
CheckBox cb2=new CheckBox("PG");
CheckBox cb3=new CheckBox("PhD");
Button b=new Button("Register");
//gp.setHgap(5);
t.setFont(Font.font("Arial", FontWeight.BOLD, 18));
fp.getChildren().addAll(r1,r2);
fp.setHgap(10);
fp1.getChildren().addAll(cb1,cb2,cb3);
fp1.setHgap(10);
gp.add(t, 1, 0);
Console
Registration [Java Applicatio
Activate Windows
Go to Settings to activate Windows.
Writable
Smart Insert
59 : 48 : 1877
15:52
30/10/2022