**National University of Computer & Emerging Sciences, Karachi**

**Computer Science Department**

**Spring 2022, Lab Manual - 08**

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| **Course Code: SL3001** | **Course: Software Development and construction** |
| **Instructor(s):** | **Miss Nida Munawar, Miss Abeeha Sattar** |

**Lab # 08**

**event-driven programming through JavaFX**

**setOnAction with button , radio button , check box and combo box**

The setOnAction method is defined to accept an EventHandler<ActionEvent> implementation, and it's that interface that defines the handle method.

Graphical user interface, application

Description automatically generated

**package** javawg;

**import** javafx.application.\*;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.scene.Scene;

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

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

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

**import** javafx.stage.Stage;

**public** **class** ex1 **extends** Application {

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

*launch*();}

@Override

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

Button b1= **new** Button("click me");

Label l1 = **new** Label();

b1.setOnAction(**new** EventHandler<ActionEvent>() {

@Override

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

l1.setText("button is clicked");

}

});

HBox h = **new** HBox();

h.getChildren().addAll(b1,l1);

Scene sc = **new** Scene(h);

stage.setScene(sc);

stage.setWidth(400);

stage.setHeight(400);

stage.setTitle("Nida's App");

stage.show();

}}

Graphical user interface, application, Word

Description automatically generated

**Getting input from textfield**

**package** javawg;

**import** javafx.application.\*;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.scene.Scene;

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

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

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

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

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

**import** javafx.stage.Stage;

**public** **class** ex1 **extends** Application {

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

*launch*();}

@Override

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

TextField t1 = **new** TextField();

Button b1= **new** Button("click me");

Label l1 = **new** Label();

b1.setOnAction(**new** EventHandler<ActionEvent>() {

@Override

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

l1.setText("welcome to the SCD section B " + t1.getText());

l1.setTextFill(Color.***BLUE***);

}

});

VBox h = **new** VBox();

h.getChildren().addAll(t1,b1,l1);

Scene sc = **new** Scene(h);

stage.setScene(sc);

stage.setWidth(600);

stage.setHeight(600);

stage.setTitle("Nida's App");

stage.show();

}}

Graphical user interface, text, application, email

Description automatically generated

**Getting input from Radio button**

**package** javawg;

**import** javafx.application.\*;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.scene.Scene;

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

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

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

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

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

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

**import** javafx.stage.Stage;

**public** **class** ex1 **extends** Application {

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

*launch*();}

@Override

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

ToggleGroup g = **new** ToggleGroup();

RadioButton r1 = **new** RadioButton("Web Engineering");

RadioButton r2 = **new** RadioButton("SCD");

RadioButton r3 = **new** RadioButton("Java");

Button b1= **new** Button("submit");

r1.setToggleGroup(g);

r2.setToggleGroup(g);

r3.setToggleGroup(g);

Label l1 = **new** Label();

b1.setOnAction(**new** EventHandler<ActionEvent>() {

@Override

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

**if**(r1.isSelected())

l1.setText("the subject for SCD section B is " + r1.getText());

**else** **if**(r2.isSelected())

l1.setText("the subject for SCD section B is " + r2.getText());

**else** **if**(r3.isSelected())

l1.setText("the subject for SCD section B is " + r3.getText());

l1.setTextFill(Color.***BLUE***);

}

});

VBox h = **new** VBox();

h.getChildren().addAll(r1,r2,r3,b1,l1);

Scene sc = **new** Scene(h);

stage.setScene(sc);

stage.setWidth(600);

stage.setHeight(600);

stage.setTitle("Nida's App");

stage.show();

}}

A picture containing rectangle

Description automatically generated

**Getting input from CheckBox**

**package** javawg;

**import** javafx.application.\*;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.scene.Scene;

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

**import** javafx.scene.control.CheckBox;

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

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

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

**import** javafx.stage.Stage;

**public** **class** ex1 **extends** Application {

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

*launch*();}

@Override

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

CheckBox r1 = **new** CheckBox("Web Engineering");

CheckBox r2 = **new** CheckBox("SCD");

CheckBox r3 = **new** CheckBox("Java");

Button b1= **new** Button("submit");

Label l1 = **new** Label();

b1.setOnAction(**new** EventHandler<ActionEvent>() {

@Override

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

String selectedOptions="";

**if**(r1.isSelected()){

selectedOptions+=r1.getText();

selectedOptions+=" ";}

**if**(r2.isSelected()) {

selectedOptions+=r2.getText();

selectedOptions+=" ";}

**if**(r3.isSelected()) {

selectedOptions+=r3.getText();

selectedOptions+=" ";}

**if** (selectedOptions.isEmpty()) {

l1.setText("pleas select any check box before submit");}

**else** {

l1.setText("you have selected : " +selectedOptions);}

l1.setTextFill(Color.***BLUE***);

}

});

VBox h = **new** VBox();

h.getChildren().addAll(r1,r2,r3,b1,l1);

Scene sc = **new** Scene(h);

stage.setScene(sc);

stage.setWidth(600);

stage.setHeight(600);

stage.setTitle("Nida's App");

stage.show();

}}

Graphical user interface, application, Word

Description automatically generated

**Getting input from Combo Box**

**package** javawg;

**import** javafx.application.\*;

**import** javafx.event.ActionEvent;

**import** javafx.event.EventHandler;

**import** javafx.scene.Scene;

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

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

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

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

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

**import** javafx.stage.Stage;

**public** **class** ex1 **extends** Application {

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

*launch*();}

@Override

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

ComboBox<String> sub = **new** ComboBox<String>();

sub.getItems().add("SCD");

sub.getItems().add("Java");

sub.getItems().add("SE");

Button b1= **new** Button("submit");

Label l1 = **new** Label();

b1.setOnAction(**new** EventHandler<ActionEvent>() {

@Override

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

**if**(sub.getValue()==**null**)

l1.setText("pleas select any option before submit");

**else** {

l1.setText("you have selected : " +sub.getValue());}

l1.setTextFill(Color.***BLUE***);

}

});

VBox h = **new** VBox();

h.getChildren().addAll(sub,b1,l1);

Scene sc = **new** Scene(h);

stage.setScene(sc);

stage.setWidth(600);

stage.setHeight(600);

stage.setTitle("Nida's App");

stage.show();

}}

Graphical user interface, application, Word

Description automatically generated

**setOnMouse Events**

Text

Description automatically generated

**setOnMouseClicked**

**package** javawg;

**import** javafx.application.\*;

**import** javafx.event.Event;

**import** javafx.event.EventHandler;

**import** javafx.scene.Scene;

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

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

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

**import** javafx.stage.Stage;

**public** **class** ex1 **extends** Application {

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

*launch*();}

@Override

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

Label l1 = **new** Label("click on me");

Label l2 = **new** Label();

l1.setOnMouseClicked(**new** EventHandler<Event>() {

@Override

**public** **void** handle(Event e) {

l2.setText("you click on me");

l2.setTextFill(Color.***RED***);

}

});

VBox h = **new** VBox();

h.getChildren().addAll(l1,l2);

Scene sc = **new** Scene(h);

stage.setScene(sc);

stage.setWidth(600);

stage.setHeight(600);

stage.setTitle("Nida's App");

stage.show();

}}

A picture containing shape

Description automatically generated