

Course Project: Car Wash

University of Jeddah

CCCS 214 – Object Oriented Programming 2



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Stage 1

1. Problem Description

Many people who want to wash their cars suffer as they wait for a long time in line and doesn't know about the price for small cars and middle cars and big cars.

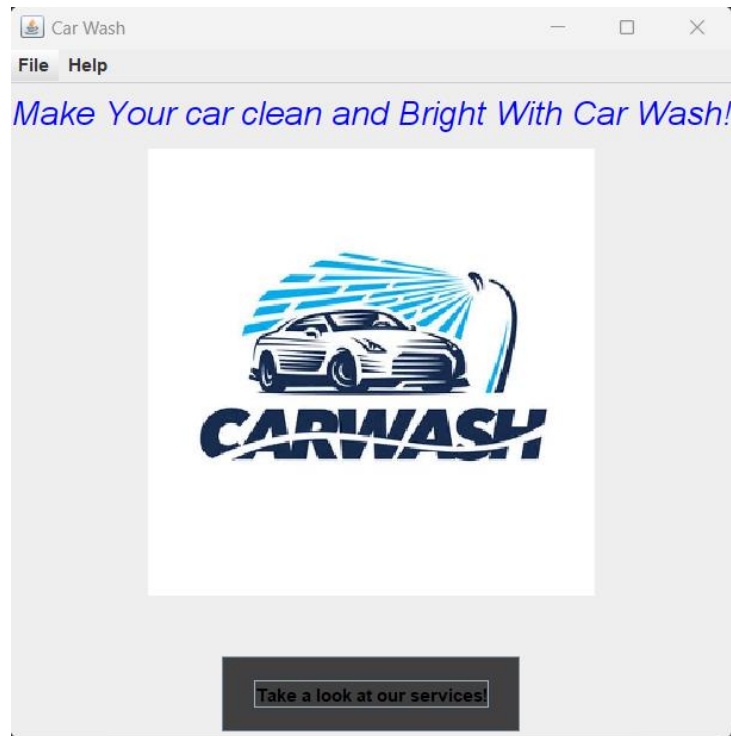
2. Problem Solution

The customer helps book an appointment from the application without going to the long wait in line and know the price for each type of car. After that, The customer must log in to his account or sign up as a new customer. The program will display the price , and allowing them to pay by cash or credit card.

Stage 2

1. Windows

Window 1



Window 2

A screenshot of a window titled "Car Wash" showing a form titled "Car Wash Services:". The form contains the following fields and controls:

- Customer Name : Ahmed
- Phone Number : 05123456789
- Car Size : Small Vehicle (dropdown menu)
- Washing Type : Internal & External wash (dropdown menu)
- An "Enter :" button below the washing type dropdown.
- Washing Car Price : 30 (60 for Both) SAR
- Pay by : ☒ Cash ☐ Credit Card
- At the bottom, there are two buttons: "The Bill" and "Cancel".

Window 3

A screenshot of a window titled "Car Wash" showing a screen titled "Your Bill:". It displays the following text:

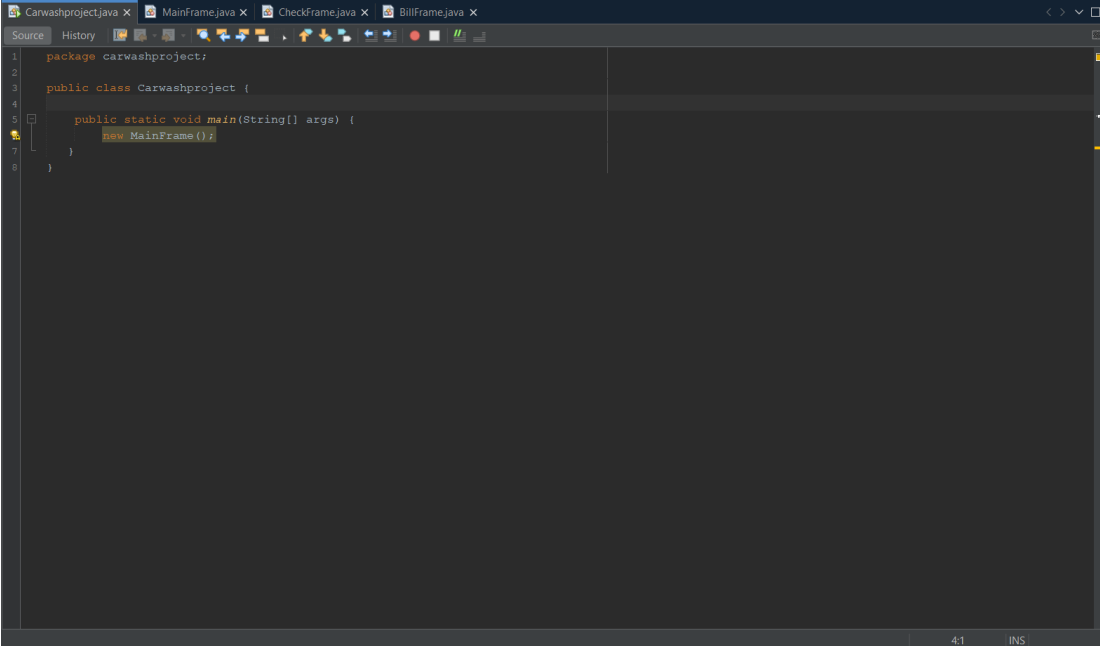
This is bill for Ahmed:
Car Type : Small Vehicle.
Wash service : Internal & External wash.
total price : 30 (60 for Both) SAR
The payment will be Cash for total of 30 (60 for Both) SAR
Thank you for choosing Car Wash app, have a great day!

At the bottom of the window is a dark grey bar with the word "Finish" in red.

Stage 3

The Screenshot of Codes

1. Carwashproject Code



The screenshot shows an IDE window with four tabs: Carwashproject.java, MainFrame.java, CheckFrame.java, and BillFrame.java. The Carwashproject.java tab is active, displaying the following Java code:

```
1 package carwashproject;
2
3 public class Carwashproject {
4
5     public static void main(String[] args) {
6         new MainFrame();
7     }
8 }
```

The code is written in a dark-themed editor. The package name is `carwashproject`. The class is `Carwashproject`. The `main` method is public and static, taking a `String[] args` parameter. It creates a new instance of `MainFrame` using `new MainFrame();`. The IDE interface includes a toolbar with various icons for file operations, a search bar, and a status bar at the bottom showing '4:1' and 'INS'.

2. MainFrame Code

```
Carwashproject.java X MainFrame.java X CheckFrame.java X BillFrame.java X
Source History
1 package carwashproject;
2
3 import java.awt.*;
4 import java.awt.event.*;
5 import javax.swing.*;
6
7 public class MainFrame extends JFrame {
8     private JMenuBar menuB;
9     private JMenu File;
10    private JMenuItem Help;
11    private JMenuItem exit;
12    private JLabel ImageLabel;
13    private ImageIcon image;
14    private JButton Services;
15    private JLabel Welcome;
16    public MainFrame() {
17        setTitle(title: "Car Wash");
18        setSize(new Dimension(width: 500, height:500));
19        setDefaultCloseOperation(operation:JFrame.EXIT_ON_CLOSE);
20
21        //Creating mainmenu
22        menuB = new JMenuBar();
23        File = new JMenu(s: "File");
24        Help = new JMenuItem(text: "Help");
25        Help.addActionListener(new MenuAction());
26        exit = new JMenuItem(text: "Exit");
27        exit.addActionListener(new MenuAction());
28        File.add(menuitem: exit);
29        menuB.add(c: File);
30        menuB.add(comp: Help);
31        setJMenuBar(menubar: menuB);
32
33        //adding Labels
34        Welcome = new JLabel(text: "Make Your car clean and Bright With Car Wash!");
35        Welcome.setFont(new Font(name: "Times", style: Font.HANGING_BASELINE, size: 22));
36        Welcome.setForeground(cg: Color.BLUE);
37        JPanel panel1 = new JPanel();
38        panel1.add(comp: Welcome);
39        add(comp: panel1, constraints: BorderLayout.NORTH);
40
41        //adding image
42        image = new ImageIcon(image: new ImageIcon(filename: "1122.jpeg").getImage()).getScaledInstance(width: 300, height:300, hints: Image.SCALE_DEFAULT);
43        ImageLabel = new JLabel();
44        ImageLabel.setIcon(icon: image);
45        JPanel panel2 = new JPanel();
46        panel2.add(comp: ImageLabel);
47        add(comp: panel2, constraints: BorderLayout.CENTER);
48
49        //adding Buttons
50        Services = new JButton(text: "Take a look at our services!");
51        Services.addActionListener(new BtnAction());
52        Services.setBackground(cg: Color.DARK_GRAY);
53        Services.setPreferredSize(new Dimension(width: 200, height:50));
54        Services.setForeground(cg: Color.black);
55        JPanel panel3 = new JPanel();
56        panel3.add(comp: Services);
57        add(comp: panel3, constraints: BorderLayout.SOUTH);
58        super.setLocationRelativeTo(c: null);
59        setVisible(b: true);
60    }
61    private class MenuAction implements ActionListener {
62
63        @Override
64        public void actionPerformed(ActionEvent e) {
65
66            if (e.getSource() == exit) {
67                System.exit(status: 0);
68            } else if (e.getSource() == Help) {
69                JOptionPane.showMessageDialog(parentComponent: null, message: "For Help Please Contact Car Wash E-mail :- (CarWashSupport@hotmail.com) ");
70            }
71        }
72    }
73    private class BtnAction implements ActionListener {
74
75        @Override
76        public void actionPerformed(ActionEvent e) {
77
78            if (e.getSource() == Services) {
79                setVisible(b: false);
80                new CheckFrame();
81            }
82        }
83    }
84 }
85
86
87
```

3. CheckFrame Code

```
1 package carwashproject;
2
3 import java.awt.*;
4 import java.awt.event.*;
5 import java.io.*;
6 import java.util.*;
7 import javax.swing.*;
8
9 public class CheckFrame extends JFrame {
10     private JLabel title;
11     private JLabel Name;
12     private JLabel PhoneNumber;
13     private JTextField nameF;
14     private JTextField phoneNumberF;
15     private JLabel Type;
16     private JLabel color;
17     private JComboBox carTypeCombo;
18     private JComboBox washType;
19     private JButton showPrice;
20     private JLabel price;
21     private JTextField priceF;
22     private JLabel payby;
23     private JRadioButton cash;
24     private JRadioButton installment;
25     private ButtonGroup btngroup = new ButtonGroup();
26     private JButton confirm;
27     private JButton cancel;
28     String[] carType = {"Small car", "Medium Vehicle", "Small Vehicle", "Trucks"};
29     String[] WashingType = {"Internal Washing", "External Washing", "Internal & External wash"};
30
31     public CheckFrame() {
32         setTitle(title: "Car Wash");
33         setSize(new Dimension(width: 600, height: 700));
34         setDefaultCloseOperation(operation: JFrame.EXIT_ON_CLOSE);
35
36         //Panel Title
37         JPanel ptitle = new JPanel();
38         title = new JLabel(text: "Car Wash Services:");
39         title.setFont(new Font(name: "Times", style: Font.BOLD, size: 24));
40         title.setForeground(cg: Color.RED);
41         ptitle.add(comp: title);
42         add(comp: ptitle, constraints: BorderLayout.NORTH);
43
44         //gridlayout for all
45         JPanel pgrid = new JPanel();
46         pgrid.setLayout(new GridLayout(rows: 7, cols: 1, hgap: 0, vgap: 0));
47
48         //Customer Name
49         JPanel namepanel = new JPanel();
50         namepanel.setLayout(new GridLayout(rows: 1, cols: 2, hgap: 0, vgap: 0));
51         Name = new JLabel(text: "Customer Name :");
52         Name.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
53         Name.setForeground(cg: Color.blue);
54         JPanel nameF = new JPanel();
55         nameF = new JTextField(columns: 10);
56         nameF.setSize(new Dimension(width: 10, height: 10));
57         nameF.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
58         nameF.setForeground(cg: Color.RED);
59         namepanel.add(comp: Name);
60         namepanel.add(comp: nameF);
61         pgrid.add(comp: namepanel);
62
63         //Phone Number
64         JPanel phonepanel = new JPanel();
65         phonepanel.setLayout(new GridLayout(rows: 1, cols: 2, hgap: 0, vgap: 0));
66         PhoneNumber = new JLabel(text: "Phone Number :");
67         PhoneNumber.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
68         PhoneNumber.setForeground(cg: Color.blue);
69         phoneNumberF = new JTextField(columns: 10);
70         phoneNumberF.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
71         phoneNumberF.setForeground(cg: Color.RED);
72         phonepanel.add(comp: PhoneNumber);
73         phonepanel.add(comp: phoneNumberF);
74         pgrid.add(comp: phonepanel);
75
76         //Labels and ComboBox
77         JPanel typepanel = new JPanel();
78         typepanel.setLayout(new GridLayout(rows: 1, cols: 2, hgap: 0, vgap: 0));
79         Type = new JLabel(text: "Car Size :");
80         Type.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
81         Type.setForeground(cg: Color.blue);
82         typepanel.add(comp: Type);
83         carTypeCombo = new JComboBox(items: carType);
84         typepanel.add(comp: carTypeCombo);
85         pgrid.add(comp: typepanel);
86
87         JPanel WashTypepanel = new JPanel();
88         WashTypepanel.setLayout(new GridLayout(rows: 1, cols: 2, hgap: 0, vgap: 0));
89         color = new JLabel(text: "Washing Type :");
90         color.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
91         color.setForeground(cg: Color.blue);
92         WashTypepanel.add(comp: color);
93         WashType = new JComboBox(items: WashingType);
94         WashTypepanel.add(comp: WashType);
95         pgrid.add(comp: WashTypepanel);
96
97         //Price Button
98         JPanel pBtn = new JPanel();
99         showPrice = new JButton(text: "Enter :");
100         showPrice.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
101         showPrice.setBackground(bg: Color.LIGHT_GRAY);
102         showPrice.setForeground(cg: Color.RED);
103         showPrice.addActionListener(new BtnsAction());
104         pBtn.add(comp: showPrice);
105         pgrid.add(comp: pBtn);
106
107         //Show the Price
108         JPanel pricepanel = new JPanel();
109         pricepanel.setLayout(new GridLayout(rows: 1, cols: 2, hgap: 0, vgap: 0));
110         price = new JLabel(text: "Washing Car Price");
111         price.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
```

```

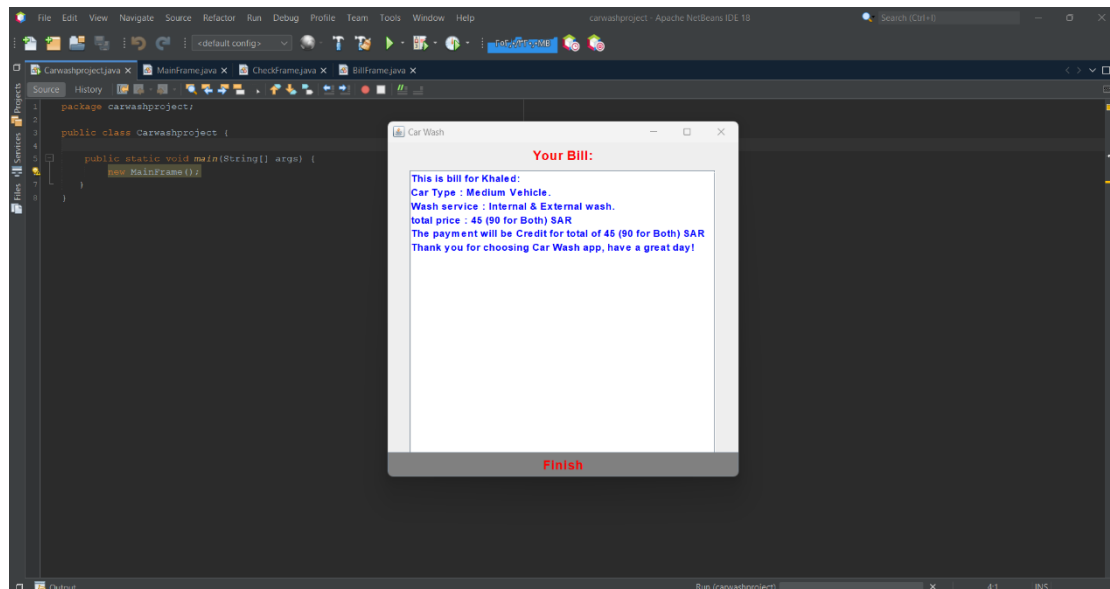
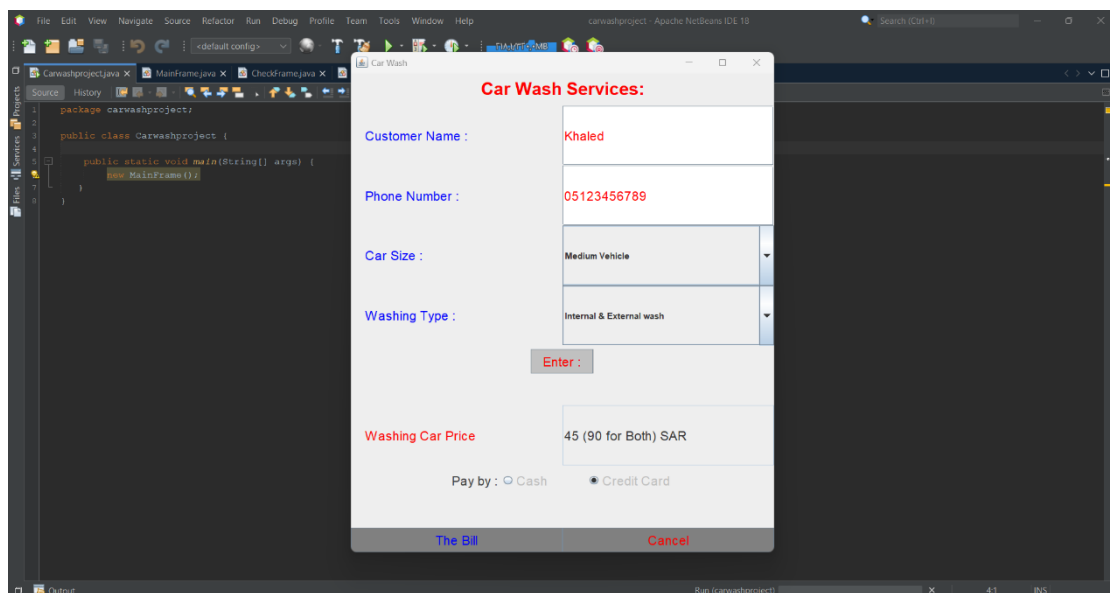
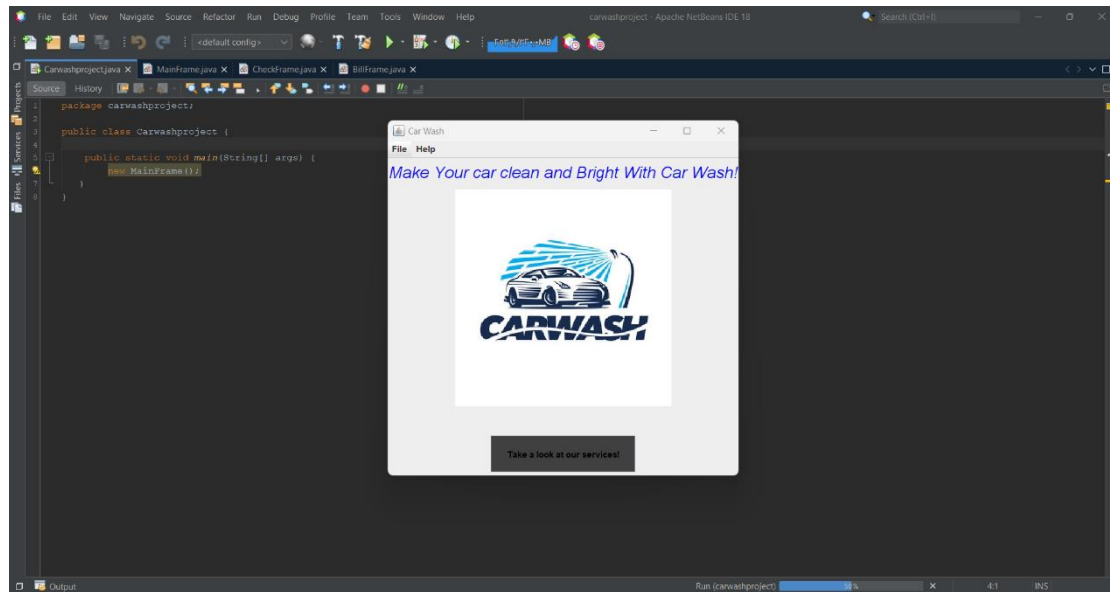
112 price.setForeground(cg: Color.RED);
113 priceTxt = new JTextField();
114 priceTxt.setEditable(b: false);
115 priceTxt.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
116 price.setForeground(cg: Color.RED);
117 pricepanel.add(comp: price);
118 pricepanel.add(comp: priceTxt);
119 pgrid.add(comp: pricepanel);
120
121 //Cash or Creditcard
122 JPanel paypanel = new JPanel();
123 pricepanel.setLayout(new GridLayout(rows: 1, cols: 2, hgap: 0, vgap: 0));
124 payby = new JLabel(text: "Pay by :");
125 payby.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
126 payby.setForeground(cg: Color.DARK_GRAY);
127
128 //Panels and RadioButtons
129 JPanel radiopanel = new JPanel();
130 radiopanel.setLayout(new GridLayout(rows: 1, cols: 2, hgap: 0, vgap: 0));
131 cash = new JRadioButton(text: "Cash");
132 cash.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
133 cash.setForeground(cg: Color.LIGHT_GRAY);
134 installments = new JRadioButton(text: "Credit Card");
135 installments.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
136 installments.setForeground(cg: Color.LIGHT_GRAY);
137 btngroup.add(b: cash);
138 btngroup.add(b: installments);
139 radiopanel.add(comp: cash);
140 radiopanel.add(comp: installments);
141 paypanel.add(comp: payby);
142 paypanel.add(comp: radiopanel);
143 pgrid.add(comp: paypanel);
144 add(comp: pgrid, constraints: BorderLayout.CENTER);
145
146 JPanel buttonspanel = new JPanel();
147 buttonspanel.setLayout(new GridLayout(rows: 1, cols: 2, hgap: 0, vgap: 0));
148 Confirm = new JButton(text: "The Bill");
149 Confirm.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
150 Confirm.setBackground(cg: Color.gray);
151 Confirm.setForeground(cg: Color.BLUE);
152 Cancel = new JButton(text: "Cancel");
153 Cancel.setFont(new Font(name: "Times", style: Font.ROMAN_BASELINE, size: 18));
154 Cancel.setBackground(cg: Color.gray);
155 Cancel.setForeground(cg: Color.RED);
156 Confirm.addActionListener(new btnsAction());
157 Cancel.addActionListener(new btnsAction());
158 buttonspanel.add(comp: Confirm);
159 buttonspanel.add(comp: Cancel);
160
161 add(comp: buttonspanel, constraints: BorderLayout.SOUTH);
162
163 setLocationRelativeTo(c: null);
164 setVisible(b: true);
165 }
166
167 private class btnsAction implements ActionListener {
168
169     @Override
170     public void actionPerformed(ActionEvent e) {
171
172         if (e.getSource() == showPrice) {
173             ArrayList<String> prices = new ArrayList<String>();
174             prices.add(b: "55 (110 for Both)");
175             prices.add(b: "45 (90 for Both)");
176             prices.add(b: "30 (60 for Both)");
177             prices.add(b: "25 (50 for Both)");
178
179             String selectedCar = (String) carTypecombo.getSelectedItemAt();
180             if (selectedCar.equals(carType[0])) {
181                 priceTxt.setText(prices.get(index: 0) + " SAR");
182             } else if (selectedCar.equals(carType[1])) {
183                 priceTxt.setText(prices.get(index: 1) + " SAR");
184             } else if (selectedCar.equals(carType[2])) {
185                 priceTxt.setText(prices.get(index: 2) + " SAR");
186             } else if (selectedCar.equals(carType[3])) {
187                 priceTxt.setText(prices.get(index: 3) + " SAR");
188             } else if (selectedCar.equals(carType[4])) {
189                 priceTxt.setText(prices.get(index: 4) + " SAR");
190             }
191         } else if (e.getSource() == Confirm) {
192             if (nameF.getText().isEmpty() || (!cash.isSelected() && !installments.isSelected())) {
193                 try {
194                     throw new Exception();
195                 } catch (Exception exp) {
196                     JOptionPane.showMessageDialog(parentComponent: null, message: "Name cannot be null and you have to choose payment method");
197                     setVisible(b: false);
198                     new CheckFrame();
199                 }
200             } else {
201                 setVisible(b: false);
202                 createBill();
203                 new BillFrame(cname: nameF.getText());
204             }
205         } else if (e.getSource() == Cancel) {
206             System.exit(status: 0);
207         }
208     }
209
210 }
211
212 }
213
214 void createBill() {
215     try {
216         FileWriter customerBill = new FileWriter(nameF.getText() + ".Bill");
217         customerBill.write("This is bill for " + nameF.getText() + ":\n");
218         customerBill.write("Car Type : " + (String) carTypecombo.getSelectedItemAt() + ".\n");
219         customerBill.write("Wash service : " + (String) WashType.getSelectedItemAt() + ".\n");
220         customerBill.write("total price : " + priceTxt.getText() + " \n");
221         if (cash.isSelected()) {
222             customerBill.write("The payment will be Cash for total of " + priceTxt.getText());
223         } else if (installments.isSelected()) {
224             customerBill.write("The payment will be Credit for total of " + priceTxt.getText());
225         }
226
227         customerBill.write("\nThank you for choosing Car Wash app, have a great day!");
228         customerBill.close();
229
230     } catch (Exception e) {
231         System.out.println(e.getMessage());
232     }
233 }
234
235 }
236
237 }
238
239 }

```

4. BillFrame

```
Carwashproject.java x MainFrame.java x CheckFrame.java x BillFrame.java x
Source History
1 package carwashproject;
2
3 import java.awt.*;
4 import java.awt.event.*;
5 import java.io.*;
6 import java.io.PrintWriter;
7 import java.util.ArrayList;
8 import java.util.Scanner;
9 import javax.swing.*;
10
11 public class BillFrame extends JFrame {
12
13     private JLabel title;
14     private JTextArea Cbill;
15     private JButton Finish;
16     private String Vname;
17
18     public BillFrame(String name) {
19         Vname = name;
20         setTitle(title: "Car Wash");
21         setSize(new Dimension(width: 500, height: 500));
22         setDefaultCloseOperation(operation: JFrame.EXIT_ON_CLOSE);
23
24         JPanel panell = new JPanel();
25         title = new JLabel(text: "Your Bill:");
26         title.setFont(new Font(name: "Times", style: Font.BOLD, size: 18));
27         title.setForeground(color: Color.RED);
28         panell.add(component: title);
29         add(component: panell, constraints: BorderLayout.NORTH);
30
31         JPanel panel2 = new JPanel();
32         Cbill = new JTextArea(rows: 30, columns: 30);
33         Cbill.setEditable(is: false);
34         Cbill.setFont(new Font(name: "Times", style: Font.BOLD, size: 14));
35         Cbill.setForeground(color: Color.BLUE);
36         JScrollPane spanel = new JScrollPane(view: Cbill);
37         panel2.add(component: spanel);
38         add(component: panel2, constraints: BorderLayout.CENTER);
39
40         Finish = new JButton(text: "Finish");
41         Finish.addActionListener(listener: new doneBtn());
42         Finish.setFont(new Font(name: "Times", style: Font.BOLD, size: 18));
43         Finish.setBackground(color: Color.gray);
44         Finish.setForeground(color: Color.RED);
45         Finish.setSize(new Dimension(width: 100, height: 100));
46         add(component: Finish, constraints: BorderLayout.SOUTH);
47         addBill();
48         setLocationRelativeTo(point: null);
49         setVisible(is: true);
50     }
51
52     private class doneBtn implements ActionListener {
53
54         @Override
55         public void actionPerformed(ActionEvent e) {
56             System.exit(status: 0);
57         }
58     }
59
60     void addBill() {
61         String bill = "";
62
63         try {
64             File fBill = new File(Vname + "Bill");
65             Scanner scanner = new Scanner(source: fBill);
66             while (scanner.hasNextLine()) {
67                 bill += scanner.nextLine() + "\n";
68             }
69             Cbill.setText(text: bill);
70         } catch (Exception e) {
71             System.out.println(message: e.getMessage());
72         }
73     }
74 }
75
76
```


The Outputs



The Codes

Carwashproject Code

```
package carwashproject;

public class Carwashproject {

    public static void main(String[] args) {

        new MainFrame();

    }

}
```

MainFrame Code

```
package carwashproject;

import java.awt.*;

import java.awt.event.*;

import javax.swing.*;

public class MainFrame extends JFrame {

    private JMenuBar menuB;

    private JMenu File;

    private JMenuItem Help;

    private JMenuItem exit;

    private JLabel ImageLabel;

    private ImageIcon image;

    private JButton Services;

    private JLabel Welcome;

    public MainFrame() {

        setTitle("Car Wash");

        setSize(new Dimension(500, 500));

        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        //Creating mainmenu

        menuB = new JMenuBar();

        File = new JMenu("File");

        Help = new JMenuItem("Help");
```

```
Help.addActionListener(new MenuAction());

exit = new JMenuItem("Exit");

exit.addActionListener(new MenuAction());

File.add(exit);

menuB.add(File);

menuB.add(Help);

setJMenuBar(menuB);

//adding Labels

Welcome = new JLabel("Make Your car clean and Bright With Car Wash!");

Welcome.setFont(new Font("Times", Font.HANGING_BASELINE, 22));

Welcome.setForeground(Color.BLUE);

JPanel panel1 = new JPanel();

panel1.add(Welcome);

add(panel1, BorderLayout.NORTH);

//adding image

image = new ImageIcon(new ImageIcon("1122.jpeg").getImage().getScaledInstance(300, 300, Image.SCALE_DEFAULT));

ImageLabel = new JLabel();

ImageLabel.setIcon(image);

JPanel panel2 = new JPanel();

panel2.add(ImageLabel);

add(panel2, BorderLayout.CENTER);

//adding Buttons

Services = new JButton("Take a look at our services!");

Services.addActionListener(new BtnAction());

Services.setBackground(Color.DARK_GRAY);

Services.setPreferredSize(new Dimension(200, 50));

Services.setForeground(Color.black);

JPanel panel3 = new JPanel();

panel3.add(Services);

add(panel3, BorderLayout.SOUTH);

super.setLocationRelativeTo(null);

setVisible(true);
```

```

    }

    private class MenuAction implements ActionListener {

        @Override

        public void actionPerformed(ActionEvent e) {

            if (e.getSource() == exit) {

                System.exit(0);

            } else if (e.getSource() == Help) {

                JOptionPane.showMessageDialog(null, "For Help Please Contact Car Wash E-mail :- (CarWashSupport@hotmail.com) ");

            }

        }

    }

    private class BtnAction implements ActionListener {

        @Override

        public void actionPerformed(ActionEvent e) {

            if (e.getSource() == Services) {

                setVisible(false);

                new CheckFrame();

            }

        }

    }

}

```

CheckFrame Code

```

package carwashproject;

import java.awt.*;

import java.awt.event.*;

import java.io.FileWriter;

import java.util.ArrayList;

import javax.swing.*;

public class CheckFrame extends JFrame {

```

```
private JLabel title;

private JLabel Name;

private JLabel PhoneNumber;

private JTextField nameF;

private JTextField phoneNumberF;

private JLabel Type;

private JLabel color;

private JComboBox carTypecombo;

private JComboBox WashType;

private JButton showPrice;

private JLabel price;

private JTextField priceTxt;

private JLabel payby;

private JRadioButton cash;

private JRadioButton installments;

private ButtonGroup btngroup = new ButtonGroup();

private JButton Confirm;

private JButton Cancel;

String[] carType = {"Small car", "Medium Vehicle", "Small Vehicle", "Trucks"};

String[] WashingType = {"Internal Washing", "External Washing", "Internal & External wash"};

public CheckFrame() {

    setTitle("Car Wash");

    setSize(new Dimension(600, 700));

    setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

    //Panel Title

    JPanel ptitle = new JPanel();

    title = new JLabel("Car Wash Services:");

    title.setFont(new Font("Times", Font.BOLD, 24));

    title.setForeground(Color.RED);

    ptitle.add(title);

    add(ptitle, BorderLayout.NORTH);

    //gridlayout for all
```

```
JPanel pgrid = new JPanel();

pgrid.setLayout(new GridLayout(7, 1, 0, 0));

//Customer Name

JPanel namepanel = new JPanel();

namepanel.setLayout(new GridLayout(1, 2, 0, 0));

Name = new JLabel("  Customer Name :");

Name.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

Name.setForeground(Color.blue);

JPanel test = new JPanel();

nameF = new JTextField(10);

nameF.setSize(new Dimension(10, 10));

nameF.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

nameF.setForeground(Color.RED);

namepanel.add(Name);

namepanel.add(nameF);

pgrid.add(namepanel);

//Phone Number

JPanel phonepanel = new JPanel();

phonepanel.setLayout(new GridLayout(1, 2, 0, 0));

PhoneNumber = new JLabel("  Phone Number :");

PhoneNumber.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

PhoneNumber.setForeground(Color.blue);

phoneNumberF = new JTextField(10);

phoneNumberF.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

phoneNumberF.setForeground(Color.RED);

phonepanel.add(PhoneNumber);

phonepanel.add(phoneNumberF);

pgrid.add(phonepanel);

//labels and ComboBox

JPanel typepanel = new JPanel();

typepanel.setLayout(new GridLayout(1, 2, 0, 0));

Type = new JLabel("  Car Size :");
```

```
Type.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

Type.setForeground(Color.blue);

typepanel.add(Type);

carTypecombo = new JComboBox(carType);

typepanel.add(carTypecombo);

pgrid.add(typepanel);

JPanel WashTypepanel = new JPanel();

WashTypepanel.setLayout(new GridLayout(1, 2, 0, 0));

color = new JLabel("  Washing Type :");

color.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

color.setForeground(Color.blue);

WashTypepanel.add(color);

WashType = new JComboBox(WashingType);

WashTypepanel.add(WashType);

pgrid.add(WashTypepanel);

//Price Button

JPanel pBtn = new JPanel();

showPrice = new JButton("Enter :");

showPrice.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

showPrice.setBackground(Color.LIGHT_GRAY);

showPrice.setForeground(Color.RED);

showPrice.addActionListener(new btnsAction());

pBtn.add(showPrice);

pgrid.add(pBtn);

//Show the Price

JPanel pricepanel = new JPanel();

pricepanel.setLayout(new GridLayout(1, 2, 0, 0));

price = new JLabel("  Washing Car Price");

price.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

price.setForeground(Color.RED);

priceTxt = new JTextField();

priceTxt.setEditable(false);
```

```
priceTxt.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

price.setForeground(Color.RED);

pricepanel.add(price);

pricepanel.add(priceTxt);

pgrid.add(pricepanel);

//Cash or Creditcard

JPanel paypanel = new JPanel();

pricepanel.setLayout(new GridLayout(1, 2, 0, 0));

payby = new JLabel("Pay by :");

payby.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

payby.setForeground(Color.DARK_GRAY);

//Panels and RadioButtons

JPanel radiopanel = new JPanel();

radiopanel.setLayout(new GridLayout(1, 2, 0, 0));

cash = new JRadioButton("Cash");

cash.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

cash.setForeground(Color.LIGHT_GRAY);

installments = new JRadioButton("Credit Card");

installments.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

installments.setForeground(Color.LIGHT_GRAY);

btngroup.add(cash);

btngroup.add(installments);

radiopanel.add(cash);

radiopanel.add(installments);

paypanel.add(payby);

paypanel.add(radiopanel);

pgrid.add(paypanel);

add(pgrid, BorderLayout.CENTER);

JPanel buttonspanel = new JPanel();

buttonspanel.setLayout(new GridLayout(1, 2, 0, 0));

Confirm = new JButton("The Bill");

Confirm.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));
```



```

Confirm.setBackground(Color.gray);

Confirm.setForeground(Color.BLUE);

Cancel = new JButton("Cancel");

Cancel.setFont(new Font("Times", Font.ROMAN_BASELINE, 18));

Cancel.setBackground(Color.gray);

Cancel.setForeground(Color.RED);

Confirm.addActionListener(new btnsAction());

Cancel.addActionListener(new btnsAction());

buttonspanel.add(Confirm);

buttonspanel.add(Cancel);

add(buttonspanel, BorderLayout.SOUTH);

setLocationRelativeTo(null);

setVisible(true);
}

```

```

private class btnsAction implements ActionListener {

    @Override

    public void actionPerformed(ActionEvent e) {

        if (e.getSource() == showPrice) {

            ArrayList<String> prices = new ArrayList<String>();

            prices.add("55 (110 for Both)");

            prices.add("45 (90 for Both)");

            prices.add("30 (60 for Both)");

            prices.add("25 (50 for Both)");

            String selectedCar = (String) carTypecombo.getSelectedItem();

            if (selectedCar.equals(carType[0])) {

                priceTxt.setText(prices.get(0) + " SAR");

            } else if (selectedCar.equals(carType[1])) {

                priceTxt.setText(prices.get(1) + " SAR");

            } else if (selectedCar.equals(carType[2])) {

                priceTxt.setText(prices.get(2) + " SAR");

            } else if (selectedCar.equals(carType[3])) {

                priceTxt.setText(prices.get(3) + " SAR");

```

```

    } else if (selectedCar.equals(carType[4])) {

        priceTxt.setText(prices.get(4) + " SAR");

    }

} else if (e.getSource() == Confirm) {

    if (nameF.getText().isEmpty() || (!cash.isSelected() && !installments.isSelected())) {

        try {

            throw new Exception();

        } catch (Exception exp) {

            JOptionPane.showMessageDialog(null, "Name cannot be null and you have to choose payment method");

            setVisible(false);

            new CheckFrame();

        }

    } else {

        setVisible(false);

        createBill();

        new BillFrame(nameF.getText());

    }

} else if (e.getSource()

    == Cancel) {

    System.exit(0);

}

}

}

void createBill() {

    try {

        FileWriter customerBill = new FileWriter(nameF.getText() + "Bill");

        customerBill.write("This is bill for " + nameF.getText() + ":\n");

        customerBill.write("Car Type : " + (String) carTypecombo.getSelectedItem() + ". \n");

        customerBill.write("Wash service : " + (String) WashType.getSelectedItem() + ". \n");

        customerBill.write("total price : " + priceTxt.getText() + " \n");

        if (cash.isSelected()) {

            customerBill.write("The payment will be Cash for total of " + priceTxt.getText());

```

```

        } else if (installments.isSelected()) {

            customerBill.write("The payment will be Credit for total of " + priceTxt.getText());

        }

        customerBill.write("\nThank you for choosing Car Wash app, have a great day!");

        customerBill.close();

    } catch (Exception e) {

        System.out.println(e.getMessage());

    }

}

}

```

BillFrame Code

```

package carwashproject;

import java.awt.*;

import java.awt.event.*;

import java.io.File;

import java.io.FileWriter;

import java.util.ArrayList;

import java.util.Scanner;

import javax.swing.*;

public class BillFrame extends JFrame {

    private JLabel title;

    private JTextArea Cbill;

    private JButton Finish;

    private String Vname;

    public BillFrame(String name) {

        Vname = name;

        setTitle("Car Wash");

        setSize(new Dimension(500, 500));

        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        JPanel panel1 = new JPanel();

        title = new JLabel("Your Bill:");
    }
}

```

```

        title.setFont(new Font("Times", Font.BOLD, 18));

        title.setForeground(Color.RED);

        panel1.add(title);

        add(panel1, BorderLayout.NORTH);

        JPanel panel2 = new JPanel();

        Cbill = new JTextArea(30, 30);

        Cbill.setEditable(false);

        Cbill.setFont(new Font("Times", Font.BOLD, 14));

        Cbill.setForeground(Color.BLUE);

        JScrollPane spanel = new JScrollPane(Cbill);

        panel2.add(spanel);

        add(panel2, BorderLayout.CENTER);

        Finish = new JButton("Finish");

        Finish.addActionListener(new doneBtn());

        Finish.setFont(new Font("Times", Font.BOLD, 18));

        Finish.setBackground(Color.gray);

        Finish.setForeground(Color.RED);

        Finish.setSize(new Dimension(100, 100));

        add(Finish, BorderLayout.SOUTH);

        addBill();

        setLocationRelativeTo(null);

        setVisible(true);
    }

    private class doneBtn implements ActionListener {

        @Override

        public void actionPerformed(ActionEvent e) {

            System.exit(0);

        }

    }

    void addBill() {

        String bill = "";

```

```
try {  
  
    File fBill = new File(Vname + "Bill");  
  
    Scanner scanner = new Scanner(fBill);  
  
    while (scanner.hasNextLine()) {  
  
        bill += scanner.nextLine() + "\n";  
  
    }  
  
    Cbill.setText(bill);  
  
} catch (Exception e) {  
  
    System.out.println(e.getMessage());  
  
}  
  
}  
  
}
```