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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a marks of zero will be awarded.

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1. INTRODUCTION:

This is the second coursework of the programming module. In this coursework, we are directed to develop a graphical user interface (GUI) for a system that stores data in the array list and to add a developed GUI with the project we completed in the first coursework where we developed a parent class i.e., Vehicle class and two child classes (AutoRickshaw and ElectricScooter class). The main objective of this coursework is to make us familiar with developing Graphical User Interface on java and to store the detail and data on an array list. This coursework consists of a total of four classes, three classes from previous coursework and one which we developed during this coursework. I developed a TransportGUI class for the graphical user interface. Some methods were created including the main method in this class. Various dialogue boxes are also created to display information and data through GUI.

While working on this coursework, I had to use different tools and software whose details are mentioned below:

1.1. BlueJ

I used BlueJ as my main IDE to write my java program. This IDE allows users to write Java codes more easily and efficiently. Some of its features are Interactive, Innovative, Portable, etc. It is easy to compile and run any java programs in this IDE. I used BlueJ in this coursework to develop my TransportGUI class. (Bluej, n.d.)



Figure 1: BlueJ logo

1.2. Draw.io

Draw.io is an open source software/platform available as both application and also on the web. I used draw.io to make a class diagram for the report part. Draw.io offers attractive tools to develop graphs or any drawing. I had used draw.io in the previous projects too so it was also very handy for me. (Draw, n.d.)



Figure 2: Draw.io logo

1.3. MS Word

Developed by Microsoft cooperation on 25 October 1983, MS word is the word processing software that allows users to create, delete, edit, modify, and manipulate text documents in digital form. I used MS word to write my report for the coursework. As I have already used MS Word in many projects, it's the handiest word processing software for me. (Wikipedia, n.d.)



Figure 3: MS WORD logo

2. CLASS DIAGRAM:

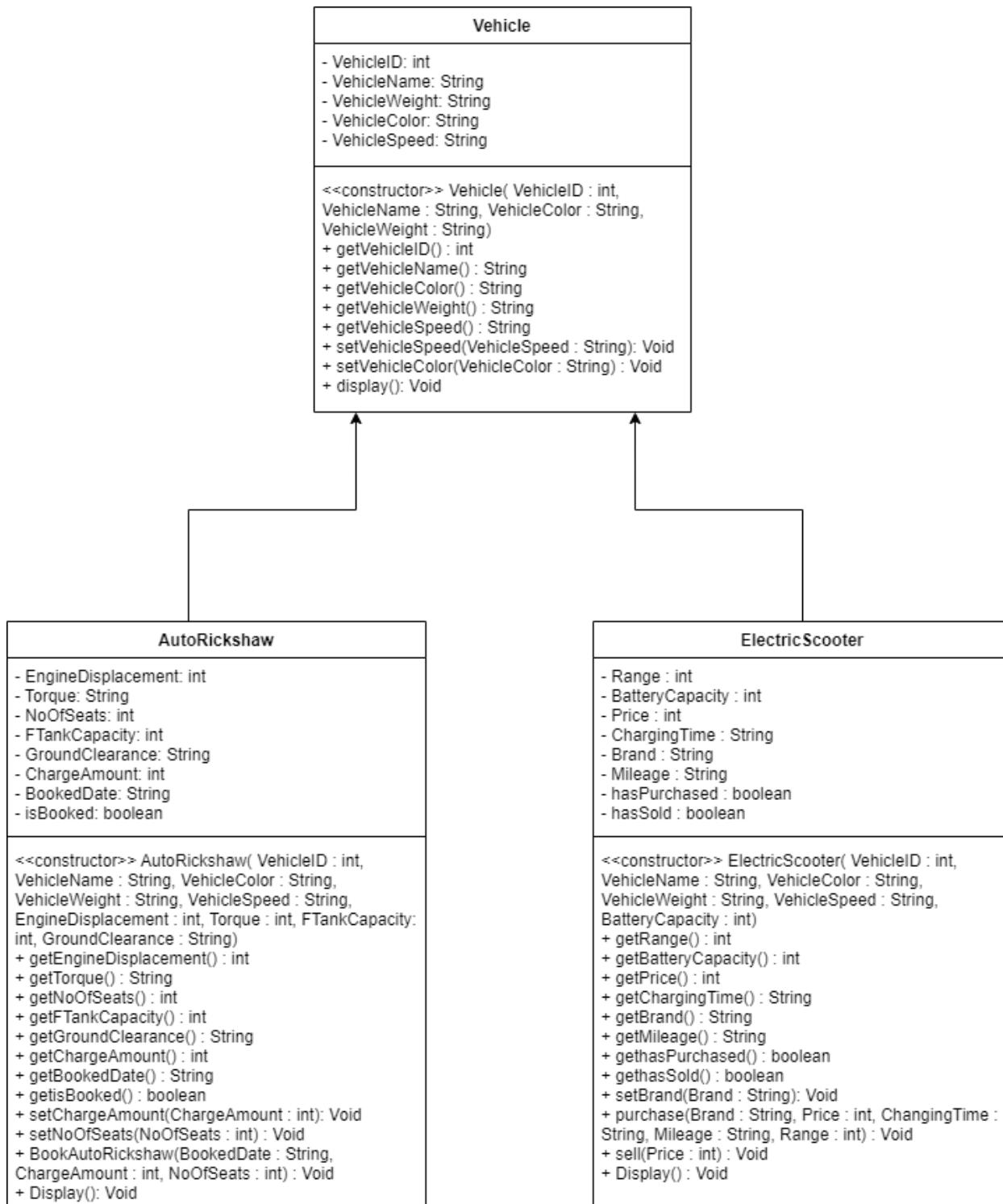


Figure 4: Class diagram for Vehicle, AutoRickshaw, and ElectricScooter class

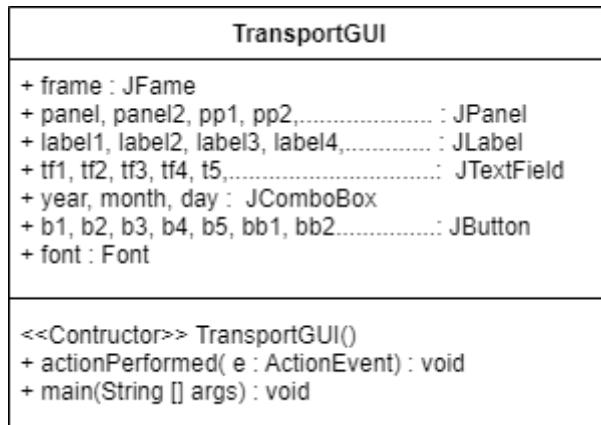


Figure 5: Class diagram for TransportGUI class

3. Pseudocode

START

CREATE a class TransportGUI which implements an action listener interface

DO

DECLARE and **INITIALIZE** an arraylist ccr of type Vehicle class

DECLARE an instance variable JFrame as frame

DECLARE an instance variable JPanel as panel, panel2, pp1, pp2, ppp1, ppp2, ppp3, p1

DECLARE an instance variable JLabel as label1, label2, label3, label4, label5, label6, label7, label8, label9, label10, label11, label12, label13, label14, label15, label16, label17, label18, label19, l1, l2, l3, l4, l5, l6, l7, l8, l9, l10, l11, l12, l13, l14, l15, l16, l17, l18, lcap

DECLARE an instance variable JTextField as tf1, tf2, tf3, tf4, tf5, tf6, tf7, tf8, tf9, tf10, tf11, tf12, tf13, tf14, tf15, tf16, tf17, tfd1, tfd2, tfd3, tfd4, tfd5, tfd6, tfd7, tfd8, tfd9, tfd10, tfd11, tfd12, tfd13, tfd14, tfd15, tfd16, tfd17

DECLARE an instance variable JComboBox as year, month, day

DECLARE an instance variable JButton as b1, b2, b3, b4, b5, bb1, bb2, bb3, bb4, bb5, bb6

DECLARE an instance variable Font as font

CREATE a constructor as TransportGUI()

DO

INITIALIZE an instance variable to JFrame as frame. **SET** the title of JFrame to Transport GUI

SET the layout of frame to null

SET the x axis of frame to 250px, y axis to 70px, width to 900px, height to 520px

SET the Visibility of frame to true

INITIALIZE an instance variable to JPanel as panel

SET the layout of panel to null

SET the x axis of panel to 0px, y axis to 0px, width to 900px, height to 720px

SET the Visibility of panel to true

SET the Background Color of panel to BLACK

INITIALIZE an instance variable to JPanel as pp1

SET the layout of pp1 to null

SET the x axis of pp1 to 30px, y axis to 55px, width to 400px, height to 350px

SET the Visibility of pp1 to true

SET the Background Color of pp1 to CYAN

INITIALIZE an instance variable to JPanel as pp2

SET the layout of pp2 to null

SET the x axis of pp2 to 480px, y axis to 55px, width to 370px, height to 240px

SET the Visibility of pp2 to true

SET the Background Color of pp2 to BLACK

INITIALIZE an instance variable to JLabel as label1

SET the text of label1 to ADD an AutoRickShaw

SET the x axis of label1 to 150px, y axis to 0px, width to 400px, height to 50px

SET the Background Color of label1 to WHITE

Add label1 to panel

INITIALIZE an instance variable to JLabel as lcap

SET the text of lcap to BOOK an AutoRickShaw

SET the x axis of lcap to 560px, y axis to 0px, width to 400px, height to 50px

SET the Background Color of lcap to WHITE

Add lcap to panel

INITIALIZE an instance variable to Font as fn

SET the font to label1 as Aliseo Font Family-Sans Serif Font, BOLD ,18px

SET the font to lcap as Aliseo Font Family-Sans Serif Font, BOLD ,18px

INITIALIZE an instance variable to JLabel as label2. **SET** the text of label2 to
Vehicle ID

SET the x axis of label2 to 50px, y axis to 90px, width to 150px, height to 20px
Add label2 to panel

INITIALIZE an instance variable to JTextField as tf1

SET the x axis of tf1 to 230px, y axis to 90px, width to 150px, height to 20px
Add tf1 to panel

INITIALIZE an instance variable to JLabel as label3. **SET** the text of label3 to
Vehicle Name

SET the x axis of label3 to 50px, y axis to 125px, width to 150px, height to 20px
Add label3 to panel

INITIALIZE an instance variable to JTextField as tf2

SET the x axis of tf2 to 230px, y axis to 125px, width to 150px, height to 20px
Add tf2 to panel

INITIALIZE an instance variable to JLabel as label4. **SET** the text of label4 to
Vehicle Color

SET the x axis of label4 to 50px, y axis to 160px, width to 150px, height to 20px
Add label4 to panel

INITIALIZE an instance variable to JTextField as tf3

SET the x axis of tf3 to 230px, y axis to 150px, width to 150px, height to 20px

Add tf3 to panel

INITIALIZE an instance variable to JLabel as label5. **SET** the text of label5 to

Vehicle Speed

SET the x axis of label5 to 50px, y axis to 195px, width to 150px, height to 20px

Add label5 to panel

INITIALIZE an instance variable to JTextField as tf4

SET the x axis of tf4 to 230px, y axis to 195px, width to 150px, height to 20px

Add tf4 to panel

INITIALIZE an instance variable to JLabel as label6. **SET** the text of label6 to

Vehicle Weight

SET the x axis of label6 to 50px, y axis to 230px, width to 150px, height to 20px

Add label6 to panel

INITIALIZE an instance variable to JTextField as tf5

SET the x axis of tf5 to 230px, y axis to 230px, width to 150px, height to 20px

Add tf5 to panel

INITIALIZE an instance variable to JLabel as label7. **SET** the text of label7 to
Torque

SET the x axis of label7 to 50px, y axis to 265px, width to 150px, height to 20px

Add label7 to panel

INITIALIZE an instance variable to JTextField as tf6

SET the x axis of tf6 to 230px, y axis to 265px, width to 150px, height to 20px

Add tf6 to panel

INITIALIZE an instance variable to JLabel as label8. **SET** the text of label8 to
Ground Clearance

SET the x axis of label8 to 50px, y axis to 300px, width to 150px, height to 20px

Add label8 to panel

INITIALIZE an instance variable to JTextField as tf7

SET the x axis of tf7 to 230px, y axis to 300px, width to 150px, height to 20px

Add tf7 to panel

INITIALIZE an instance variable to JLabel as label9. **SET** the text of label9 to
Fuel Tank Capacity

SET the x axis of label9 to 50px, y axis to 335px, width to 150px, height to 20px

Add label9 to panel

INITIALIZE an instance variable to JTextField as tf8

SET the x axis of tf8 to 230px, y axis to 335px, width to 150px, height to 20px

Add tf8 to panel

INITIALIZE an instance variable to JLabel as label10. **SET** the text of label10 to Engine Displacement

SET the x axis of label10 to 50px, y axis to 370px, width to 150px, height to 20px

Add label10 to panel

INITIALIZE an instance variable to JTextField as tf17

SET the x axis of tf17 to 230px, y axis to 370px, width to 150px, height to 20px

Add tf17 to panel

INITIALIZE an instance variable to JLabel as label10. **SET** the text of label10 to Vehicle ID

SET the x axis of label10 to 500px, y axis to 90px, width to 150px, height to 20px

Add label10 to panel

INITIALIZE an instance variable to JTextField as tf9

SET the x axis of tf9 to 680px, y axis to 90px, width to 150px, height to 20px

Add tf9 to panel

INITIALIZE an instance variable to JLabel as label11. **SET** the text of label11 to Charge Amount

SET the x axis of label11 to 500px, y axis to 125px, width to 150px, height to 20px

Add label11 to panel

INITIALIZE an instance variable to JTextField as tf10

SET the x axis of tf10 to 680px, y axis to 125px, width to 150px, height to 20px

Add tf10 to panel

INITIALIZE an instance variable to JLabel as label12. **SET** the text of label12 to No of seats

SET the x axis of label12 to 500px, y axis to 160px, width to 150px, height to 20px

Add label12 to panel

INITIALIZE an instance variable to JTextField as tf11

SET the x axis of tf11 to 680px, y axis to 160px, width to 150px, height to 20px

Add tf11 to panel

INITIALIZE an instance variable to JLabel as label19. **SET** the text of label19 to

Booked Date

SET the x axis of label19 to 500px, y axis to 195px, width to 150px, height to 20px

Add label19 to panel

CREATE Array as Ydate. Set the values on Ydate("Year", "2015", "2016", "2017", "2018", "2019", "2020", "2021", "2022")

INITIALIZE an instance variable to JComboBox as year. Set the value of year to Ydate

SET the x axis of year to 680px, y axis to 195px, width to 70px, height to 20px

Add year to panel

CREATE Array as Mdate. Set the values on Mdate("Month", "Jan", "Feb", "Mar", "Apr", "May", "Jun", "Jul", "Aug", "Sept", "Oct", "Nov", "Dec")

INITIALIZE an instance variable to JComboBox as month. Set the value of month to Mdate

SET the x axis of month to 760px, y axis to 195px, width to 70px, height to 20px

Add month to panel

CREATE Array as Ddate. Set the values on Ddate("Select Day", "1", "2", "3", "4", "5", "6", "7", "8", "9", "10", "11", "12", "13", "14", "15", "16", "17", "18", "19", "20", "21", "22", "23", "24", "25", "26", "27", "28", "29", "30", "31", "32")

INITIALIZE an instance variable to JComboBox as day. Set the value of day to Ddate

SET the x axis of day to 710px, y axis to 230px, width to 70px, height to 20px

Add day to panel

INITIALIZE an instance variable to JButton as b1. SET the text of b1 to Add

SET the x axis of b1 to 80px, y axis to 430px, width to 90px, height to 30px

Add b1 to panel

INITIALIZE an instance variable to JButton as b2. SET the text of b1 to Book

SET the x axis of b2 to 680px, y axis to 320x, width to 90px, height to 30px

Add b2 to panel

INITIALIZE an instance variable to JButton as b3. SET the text of b3 to Display

SET the x axis of b3 to 220px, y axis to 430x, width to 90px, height to 30px

Add b3 to panel

INITIALIZE an instance variable to JButton as b4. SET the text of b4 to Clear

SET the x axis of b4 to 540px, y axis to 320x, width to 90px, height to 30px

Add b4 to panel

INITIALIZE an instance variable to JButton as b5. SET the text of b4 to Go To

Electric Scooter

SET the x axis of b5 to 570px, y axis to 410x, width to 180px, height to 30px

Add b5 to panel

INITIALIZE an instance variable to JPanel as panel2

SET the layout of panel2 to null

SET the x axis of panel2 to 0px, y axis to 0px, width to 900px, height to 720px

SET the Visibility of panel2 to true

SET the Background Color of panel2 to BLACK

INITIALIZE an instance variable to JPanel as ppp1

SET the layout of ppp1 to null

SET the x axis of ppp1 to 20px, y axis to 64px, width to 320px, height to 233px

SET the Visibility of ppp1 to true

SET the Background Color of ppp1 to CYAN

INITIALIZE an instance variable to JPanel as ppp2

SET the layout of ppp2 to null

SET the x axis of ppp2 to 480px, y axis to 64px, width to 340px, height to 215px

SET the Visibility of ppp2 to true

SET the Background Color of ppp2 to YELLOW

INITIALIZE an instance variable to JPanel as ppp3

SET the layout of ppp3 to null

SET the x axis of ppp3 to 480px, y axis to 355px, width to 340px, height to 78px

SET the Visibility of ppp3 to true

SET the Background Color of ppp3 to YELLOW

INITIALIZE an instance variable to JLabel as l1. **SET** the text of l1 Add an Electric Scooter

SET the x axis of l1 to 90px, y axis to 0px, width to 400px, height to 50px

SET the Font of l1 to fn

SET the Color of l1 to White

Add l1 to panel2

INITIALIZE an instance variable to JLabel as l17. **SET** the text of l17 Purchase an Electric Scooter

SET the x axis of l17 to 530px, y axis to 0px, width to 400px, height to 50px

SET the Font of l17 to fn

SET the Color of l17 to White

Add l17 to panel2

INITIALIZE an instance variable to JLabel as l2. **SET** the text of l2 Vehicle ID

SET the x axis of l2 to 30px, y axis to 80px, width to 150px, height to 20px

Add l2 to panel2

INITIALIZE an instance variable to JTextField as tfd1.

SET the x axis of tfd1 to 160px, y axis to 80px, width to 150px, height to 20px

Add tfd1 to panel2

INITIALIZE an instance variable to JLabel as l3. **SET** the text of l3 Vehicle Name

SET the x axis of l3 to 30px, y axis to 115px, width to 150px, height to 20px

Add l3 to panel2

INITIALIZE an instance variable to JTextField as tfd2.

SET the x axis of tfd2 to 160px, y axis to 115px, width to 150px, height to 20px

Add tfd2 to panel2

INITIALIZE an instance variable to JLabel as l4. **SET** the text of l4 Vehicle Color

SET the x axis of l4 to 30px, y axis to 150x, width to 150px, height to 20px

Add l4 to panel2

INITIALIZE an instance variable to JTextField as tfd3.

SET the x axis of tfd3 to 160px, y axis to 150px, width to 150px, height to 20px

Add tfd3 to panel2

INITIALIZE an instance variable to JLabel as l5. **SET** the text of l5 Vehicle Speed

SET the x axis of l5 to 30px, y axis to 185x, width to 150px, height to 20px

Add l5 to panel2

INITIALIZE an instance variable to JTextField as tfd4.

SET the x axis of tfd4 to 160px, y axis to 185px, width to 150px, height to 20px

Add tfd4 to panel2

INITIALIZE an instance variable to JLabel as l6. **SET** the text of l6 Vehicle Weight

SET the x axis of l6 to 30px, y axis to 220x, width to 150px, height to 20px

Add l6 to panel2

INITIALIZE an instance variable to JTextField as tfd5.

SET the x axis of tfd5 to 160px, y axis to 220px, width to 150px, height to 20px

Add tfd5 to panel2

INITIALIZE an instance variable to JLabel as l7. **SET** the text of l7 as Battery Capacity

SET the x axis of l6 to 30px, y axis to 255x, width to 150px, height to 20px

Add l6 to panel2

INITIALIZE an instance variable to JTextField as tfd6.

SET the x axis of tfd6 to 160px, y axis to 255px, width to 150px, height to 20px

Add tfd6 to panel2

INITIALIZE an instance variable to JLabel as l10. **SET** the text of l10 Vehicle ID

SET the x axis of l10 to 500px, y axis to 80x, width to 150px, height to 20px

Add l10 to panel2

INITIALIZE an instance variable to JTextField as tfd9.

SET the x axis of tfd9 to 630px, y axis to 80px, width to 150px, height to 20px

Add tfd9 to panel2

INITIALIZE an instance variable to JLabel as l11. **SET** the text of l11 Brand

SET the x axis of l11 to 500px, y axis to 115x, width to 150px, height to 20px

Add l11 to panel2

INITIALIZE an instance variable to JTextField as tfd10.

SET the x axis of tfd10 to 630px, y axis to 115px, width to 150px, height to 20px

Add tfd10 to panel2

INITIALIZE an instance variable to JLabel as l18. **SET** the text of l18 Price

SET the x axis of l18 to 500px, y axis to 150x, width to 150px, height to 20px

Add l18 to panel2

INITIALIZE an instance variable to JTextField as tfd17.

SET the x axis of tfd17 to 630px, y axis to 150px, width to 150px, height to 20px

Add tfd17 to panel2

INITIALIZE an instance variable to JLabel as l12. **SET** the text of l12 Charging

Time

SET the x axis of l12 to 500px, y axis to 185x, width to 150px, height to 20px

Add l12 to panel2

INITIALIZE an instance variable to JTextField as tfd11.

SET the x axis of tfd11 to 630px, y axis to 185px, width to 150px, height to 20px

Add tfd11 to panel2

INITIALIZE an instance variable to JLabel as l13. **SET** the text of l13 Mileage

SET the x axis of l13 to 500px, y axis to 220x, width to 150px, height to 20px

Add l13 to panel2

INITIALIZE an instance variable to JTextField as tfd12.

SET the x axis of tfd12 to 630px, y axis to 220px, width to 150px, height to 20px

Add tfd12 to panel2

INITIALIZE an instance variable to JLabel as l14. **SET** the text of l14 Range

SET the x axis of l14 to 500px, y axis to 255x, width to 150px, height to 20px

Add l14 to panel2

INITIALIZE an instance variable to JTextField as tfd13.

SET the x axis of tfd13 to 630px, y axis to 255px, width to 150px, height to 20px

Add tfd13 to panel2

INITIALIZE an instance variable to JLabel as l8. **SET** the text of l8 Sell Electric

Scooter

SET the x axis of l8 to 582px, y axis to 325x, width to 180px, height to 20px

SET the Font of l8 to fn

SET the Color of l8 to White

Add l8 to panel2

INITIALIZE an instance variable to JLabel as l9. **SET** the text of l9 Vehicle ID

SET the x axis of l9 to 500px, y axis to 365x, width to 150px, height to 20px

Add l9 to panel2

INITIALIZE an instance variable to JTextField as tfd14.

SET the x axis of tfd14 to 630px, y axis to 365px, width to 150px, height to 20px

Add tfd14 to panel2

INITIALIZE an instance variable to JLabel as l16. **SET** the text of l16 Price

SET the x axis of l16 to 500px, y axis to 400x, width to 150px, height to 20px

Add l9 to panel2

INITIALIZE an instance variable to JTextField as tfd15.

SET the x axis of tfd15 to 630px, y axis to 400px, width to 150px, height to 20px

Add tfd15 to panel2

INITIALIZE an instance variable to JButton as bb1. **SET** the text of bb1 to Add

SET the x axis of bb1 to 55px, y axis to 315px, width to 90px, height to 30px

Add bb1 to panel

INITIALIZE an instance variable to JButton as bb3. **SET** the text of bb3 to Display

SET the x axis of bb3 to 180px, y axis to 315px, width to 90px, height to 30px

Add bb3 to panel

INITIALIZE an instance variable to JButton as bb5. **SET** the text of bb5 to Go To Electric Scooter

SET the x axis of bb5 to 55px, y axis to 370px, width to 215px, height to 30px

Add bb5 to panel

INITIALIZE an instance variable to JButton as bb6. **SET** the text of bb6 Purchase Electric Scooter

SET the x axis of bb6 to 535px, y axis to 290px, width to 215px, height to 30px

Add bb6 to panel

INITIALIZE an instance variable to JButton as bb2. **SET** the text of bb2 Sell Electric Scooter

SET the x axis of bb2 to 535px, y axis to 445px, width to 215px, height to 30px

Add bb2 to panel

INITIALIZE an instance variable to JButton as bb4. **SET** the text of bb4 Clear
SET the x axis of bb4 to 110px, y axis to 425px, width to 90px, height to 30px
Add bb4 to panel

Add panel to frame

SET the visibility of panel to true

SET the resizable of frame too false

Add panel2 to frame

SET the visibility of panel2 to false

SET the visibility of ppp1 to true

SET the visibility of ppp2 to true

SET the visibility of ppp3 to true

ADD b5 to panel

ADD pp1 to panel

ADD pp2 to panel

ADD ppp1 to panel2

ADD ppp2 to panel2

ADD ppp3 to panel2

ADD b1 to ActionListener

ADD b2 to ActionListener

ADD b3 to ActionListener

ADD b4 to ActionListener

ADD b5 to ActionListener

ADD bb1 to ActionListener

ADD bb2 to ActionListener

ADD bb3 to ActionListener

ADD bb4 to ActionListener

ADD bb5 to ActionListener

END DO

CREATE actionPerformed method with no return type

DO

IF Source == b5

DO

SET Visibility of panel2 to false

SET Visibility of panel to true

END DO

END IF

IF Source == b1

DO

TRY type caste

CREATE object

ADD object in ArrayList

CATCH Number Format Exception n

END DO

END IF

IF Source == b1

DO

TRY type caste

Iterate ArrayList

```
CHECK INSTANCEOF AutoRickshaw  
Down Casting  
CALL BookAutoRickshaw method from AutoRickshaw class  
CATCH Number Format Exception n  
END DO  
END IF  
IF source == bb1  
DO  
    TRY type caste  
    CREATE object  
    ADD object in ArrayList  
    CATCH Number Format Exception n  
END DO  
END IF  
IF Source == bb6  
DO  
    TRY type caste  
    Iterate ArrayList  
    CHECK INSTANCEOF ElectricScooter  
    Down Casting  
    CALL purchase method from ElectricScooter class  
    CATCH Number Format Exception n  
END DO
```

END IF

IF Source == bb2

DO

TRY type caste

Iterate ArrayList

CHECK INSTANCEOF ElectricScooter

Down Casting

CALL sell method from ElectricScooter class

CATCH Number Format Exception n

END DO

END IF

IF Source == bb5

DO

SET Visibility of panel to true

SET Visibility of panel2 to false

END DO

END IF

IF Source == b4

DO

SET Text of every Text field in panel to empty

END DO

END IF

IF Source == bb4

```
DO
    SET Text of every Text field in panel2 to empty
END DO

END IF

IF Source == b3
    DO
        ITERATE ArrrayList
        CHECK InstanceOf AutoRickshaw
        PERFORM Down Casting
        CALL Display method of AutoRickshaw class
    END DO
END IF

END DO

CREATE main method of TransportGUI class
DO
    CALL constructor TransportGUI
END DO

END DO

STOP
```

4. METHOD DESCRIPTION:

The methods description of TransportGUI is given below:

4.1. ArrayList() :

This is the constructor which creates the empty list in the Java program. I have used ArrayList in this coursework to store the details of AutoRickshaw and ElectricScooter classes.

4.2. Add():

This is the method that adds objects at the declared positions in the Java program. We have used this method to add different objects of array list, JFrame, JPanel, etc.

4.3. setLayout():

This method allows users to set the layout of the container in user desirable way. In this Coursework, we have used this method to set the layout of different containers such as JFrame and JPanel.

4.4. setBounds():

This method allows users to set the size and positions of the different containers. I have used this method to set the positions as well as the size of different containers such as JLabel and JTextField.

4.5. setVisible():

This is the method that sets whether the container is visible or not. This can be done by providing a Boolean value to the method.

4.6. setBackground():

This method helps to set the background colors for the different containers.

We have used this method to only set colors for different panels.

4.7. setText():

This method in Java program helps to set the text in different containers and labels. I have used this method to set the text of different JLabels.

4.8. addActionListener():

This method listens to the happening action events in the Java Program. I have used this method to add buttons for invoking the actionPerformed method.

4.9. actionPerformed():

This method includes those codes that implement methods in the listener Interface. It is called after the user performs the actions. (Oracle, n.d.)

4.10. getText():

This method is used to return the Text written on the respective text field. We have used this method inside the actionPerformed method.

4.11. JOptionPane.showMessageDialog():

This method is used to display the message dialog box with certain text in the container. We have used this method frequently to display messages after clicking on the buttons in the GUI.

4.12. getSelectedItem():

This method is used in Java programs to return the item on which it is added or which is selected. I have used this method to return the value of the year, month, and day in their respective JComboBox.

4.13. setText(""):

This method is used in the Java program to set the text empty on its container. We have used this method to clear the values in the text field entered in the GUI by clicking on the clear button.

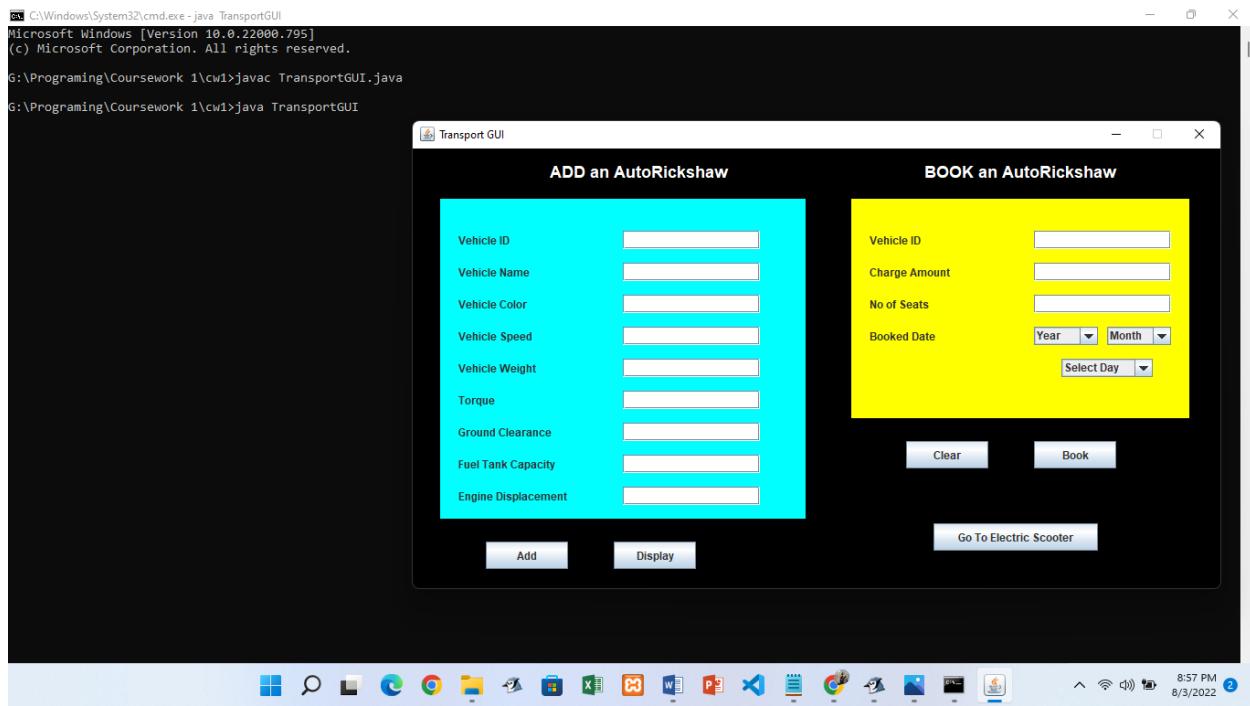
5. Testing:

Following are the testing for the given questions:

5.1. Test 1:

Objective	To Compile and run the Program in the command prompt.
Action	Open command prompt of the folder of Java Program. Compile the program by using “Javac.TransportGUI.java” and run the program using “Java TransportGUI”.
Expected Result	The program will be compiled and will be successfully run.
Actual Result	The program has been compiled and has been successfully run.
Conclusion	The test was successful.

Table 1: Test 1

*Figure 6: Screenshot of Test 1*

5.2. Test 2:

5.2.1. Add the AutoRickshaw

Objective	To add the values of AutoRickshaw.
Action	Entering the values of AutoRickshaw, Clicking Add button.
Expected Result	The value will be added.
Actual Result	The value has been added.
Conclusion	The test was successful.

Table 2: Test 2a



Figure 7: Adding Value of AutoRickshaw

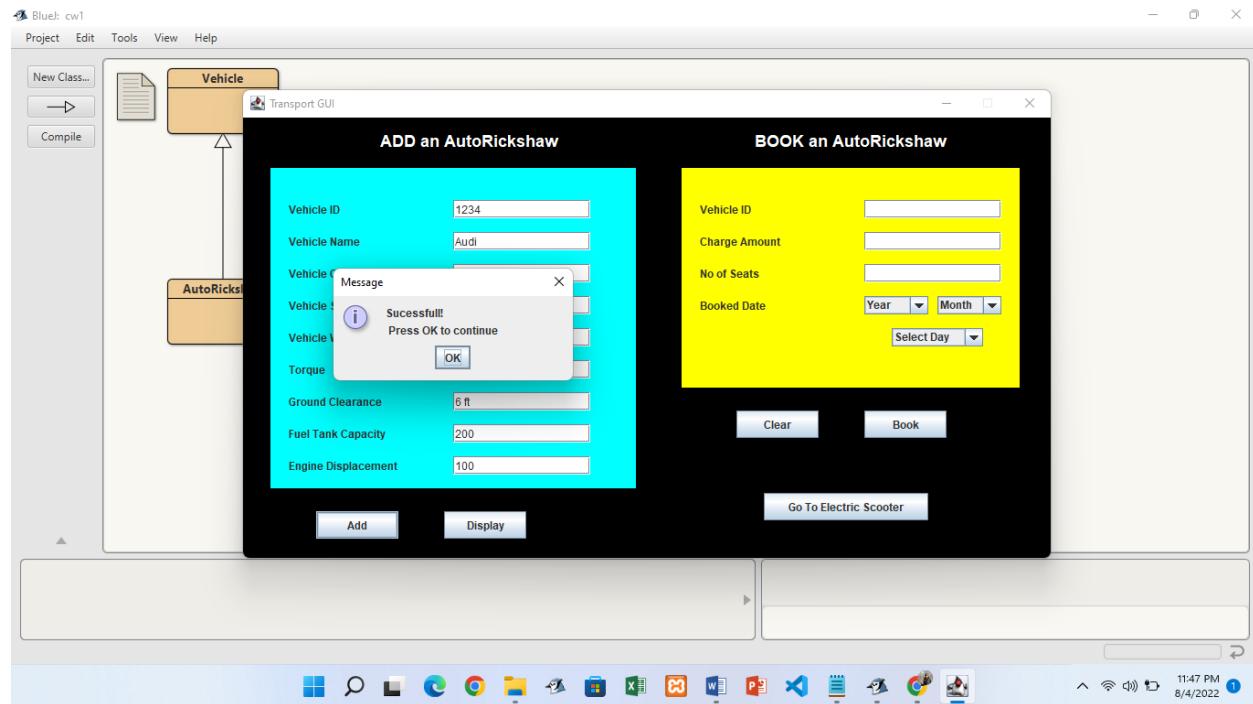


Figure 8: Screenshot of Test 2a

5.2.2. Add the ElectricScooter:

Objective	To add the values of ElectricScooter.
Action	Entering the values of ElectricScooter, Clicking Add button.
Expected Result	The value will be added.
Actual Result	The value has been added.
Conclusion	The test was successful.

Table 3: Test 2b

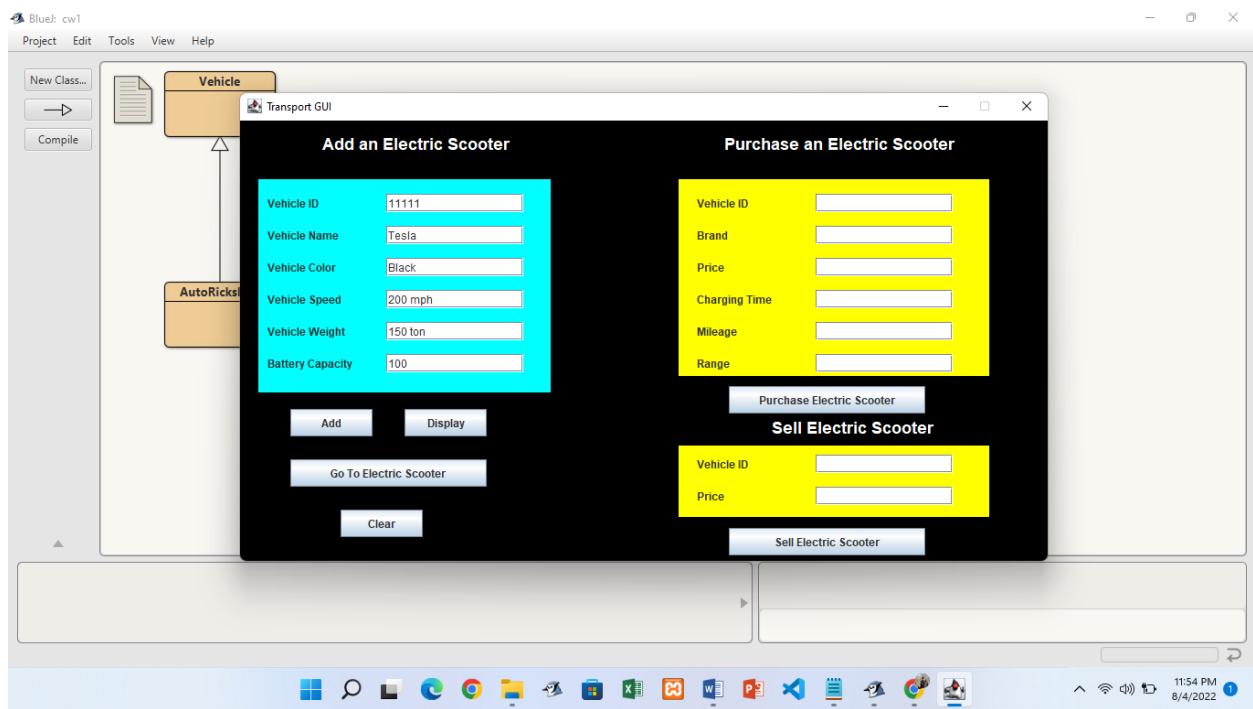


Figure 9: Adding the value of ElectricScooter

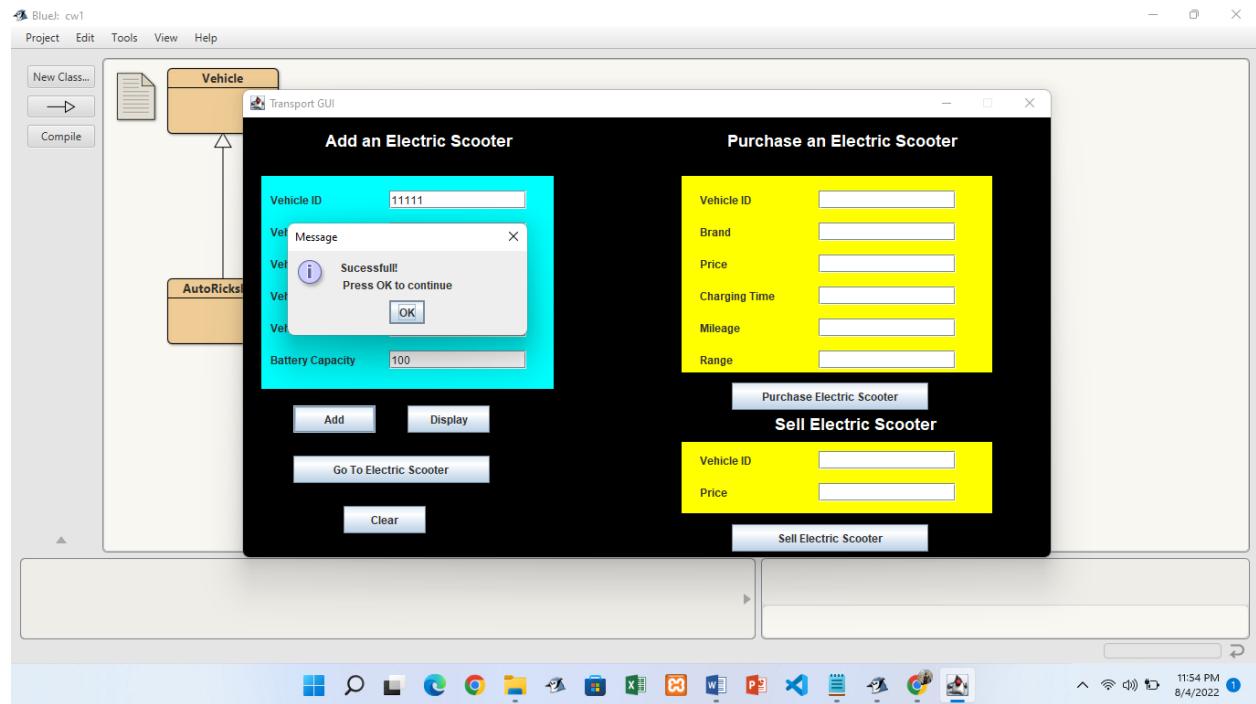


Figure 10: Screenshot of Test 2b

5.2.3. Book the AutoRickshaw:

Objective	To book the AutoRickshaw.
Action	Entering the values of AutoRickshaw, Click the book button.
Expected Result	The AutoRickshaw will be booked.
Actual Result	The AutoRickshaw has been booked.
Conclusion	The test was successful.

Table 4: Test 2 c



Figure 11: Filling values for booking AutoRickshaw

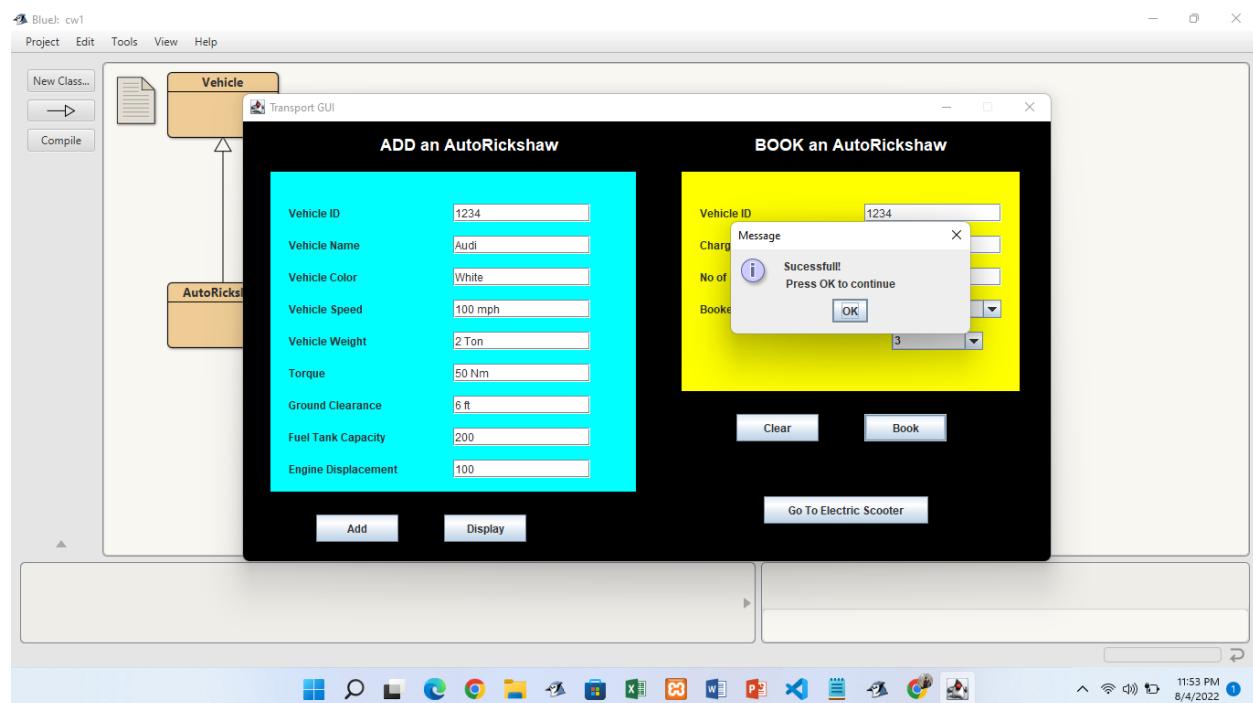


Figure 12: Screenshot of Test 2c

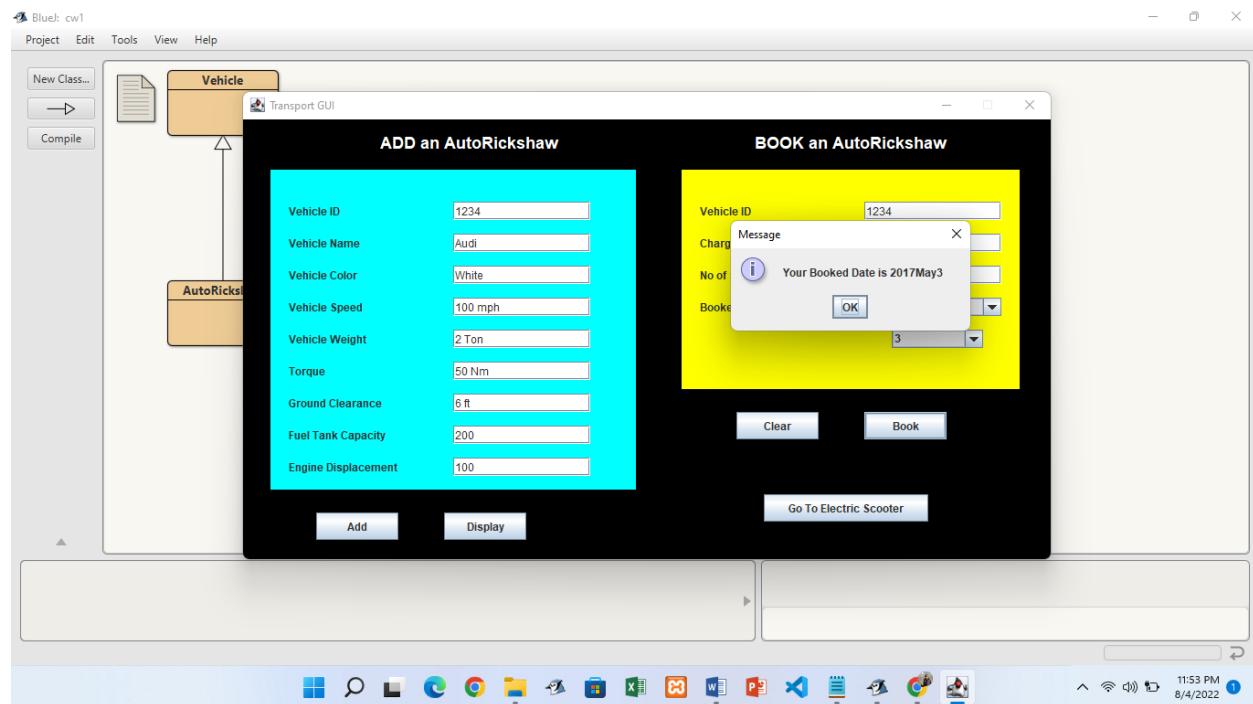


Figure 13: Screenshot of Test 2c

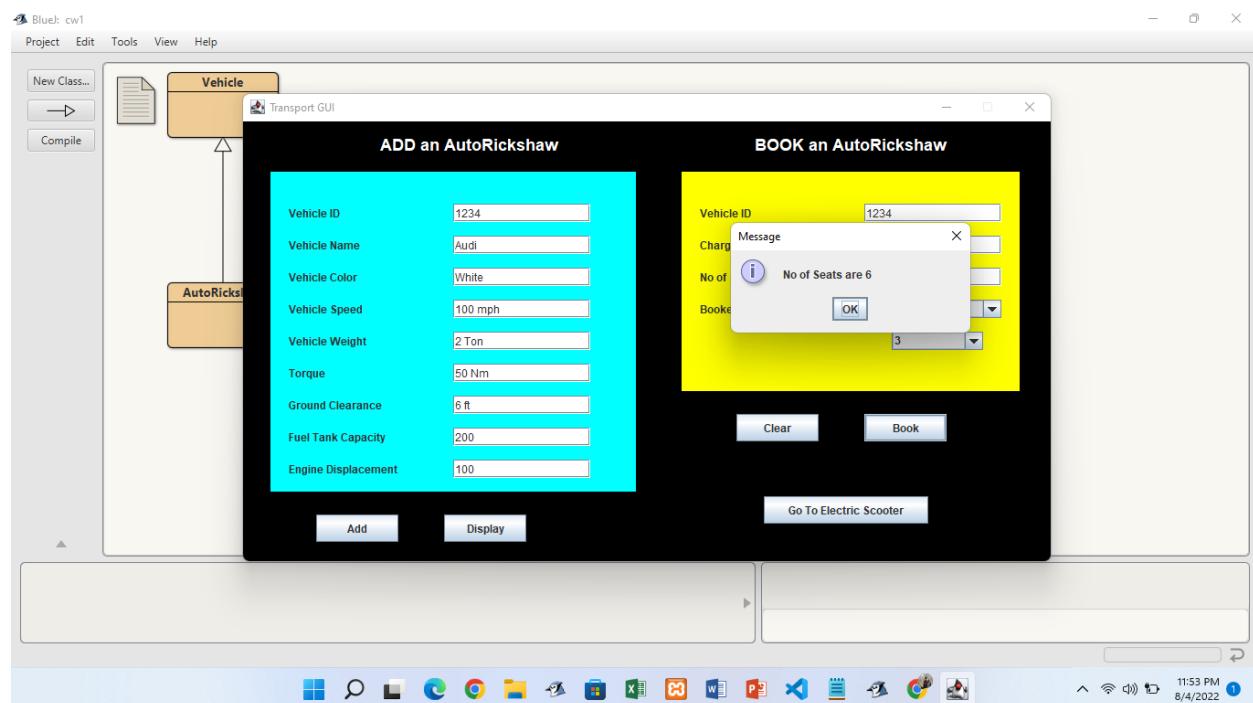


Figure 14: Screenshot of Test 2c

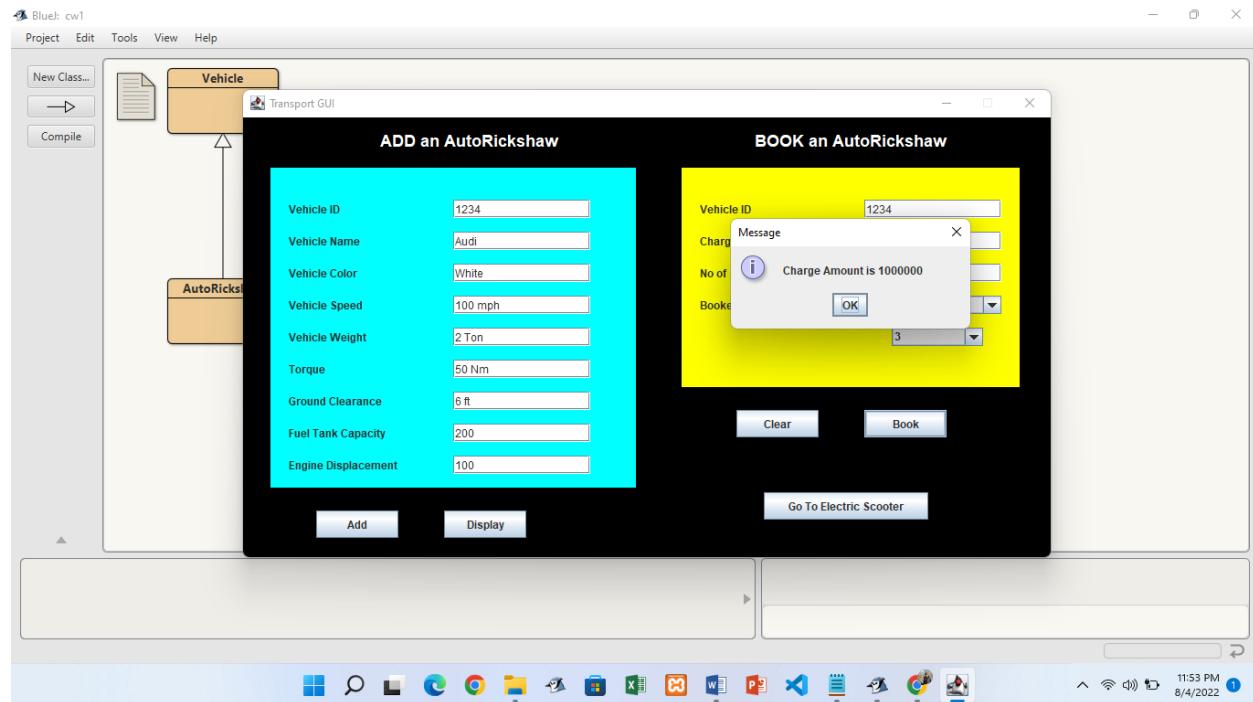


Figure 15: Screenshot of Test 2c

5.2.4. Purchase the ElectricScooter

Objective	To purchase the ElectricScooter.
Action	Entering the values of ElectricScooter, Click the Purchase the ElectricScooter button.
Expected Result	The ElectricScooter will be purchased.
Actual Result	The ElectricScooter has been purchased.
Conclusion	The test was successful.

Table 5: Test 2d

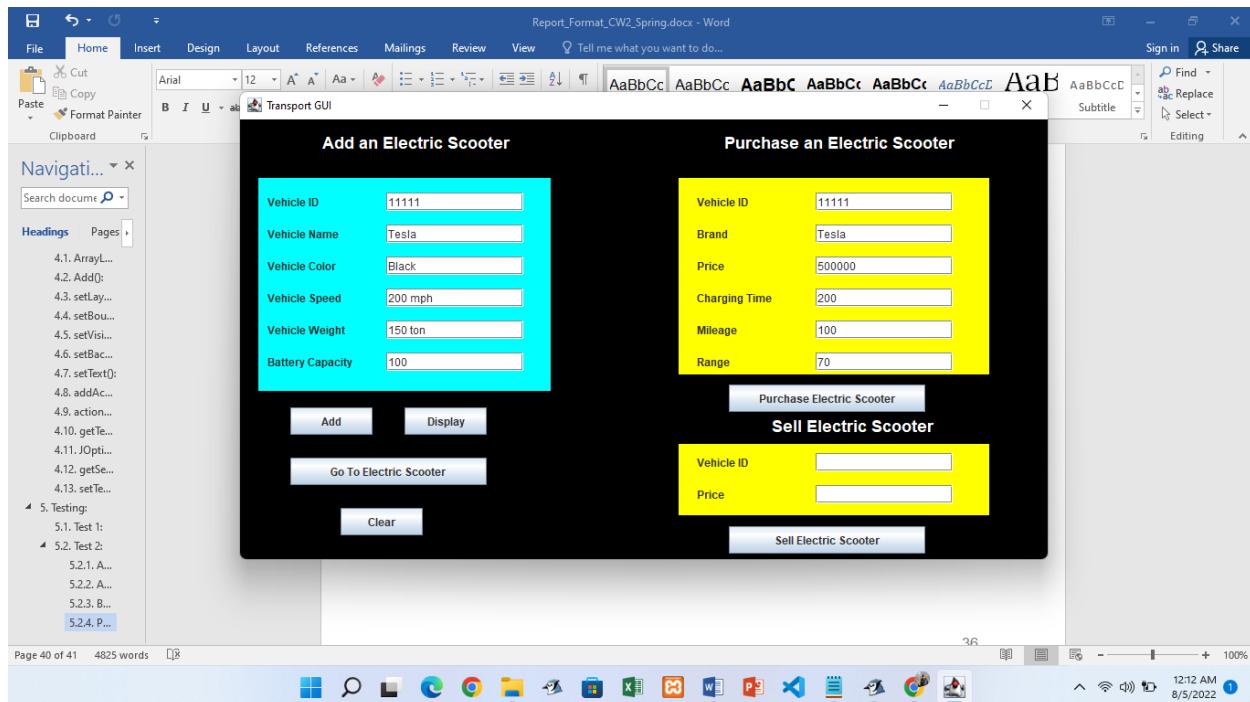


Figure 16: Filling the value to Purchase Electric Scooter

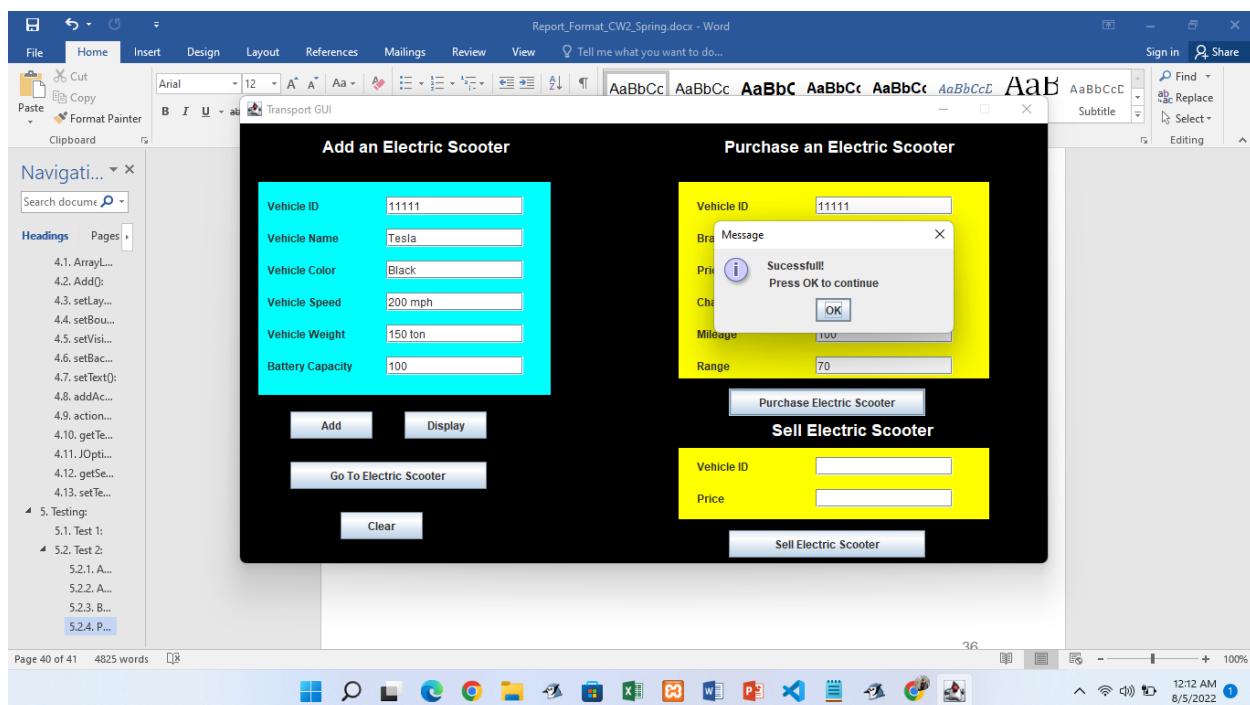
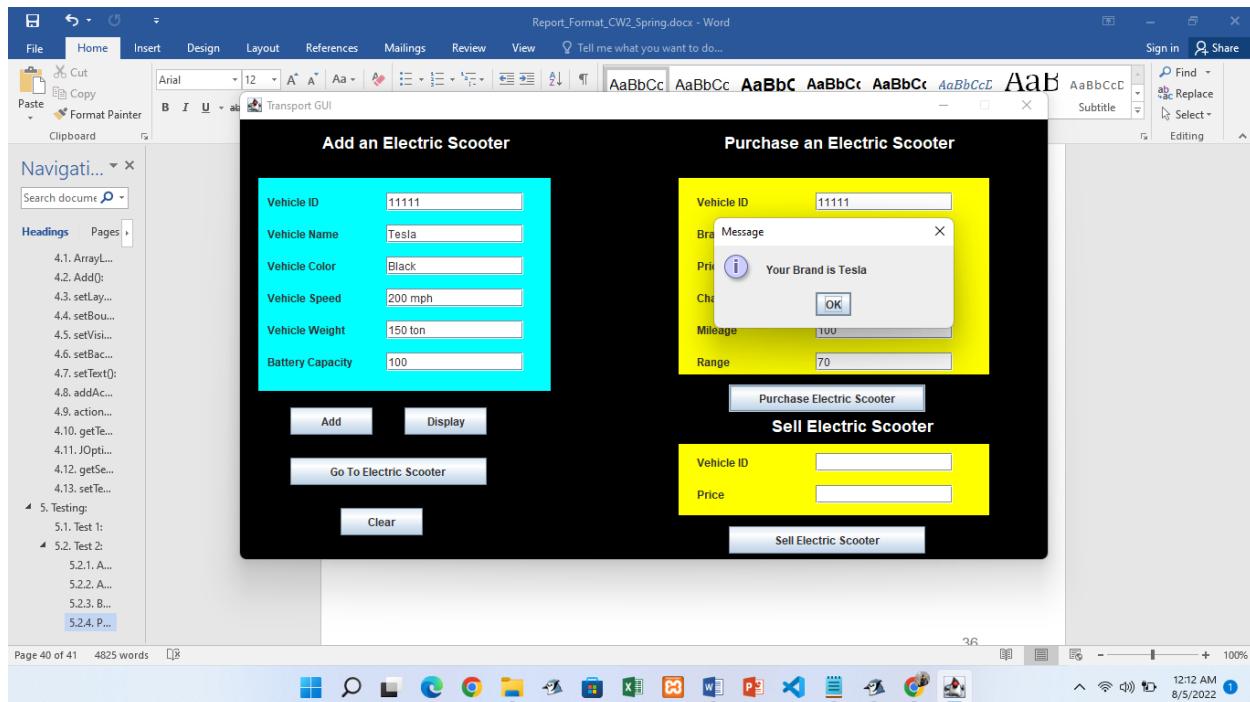
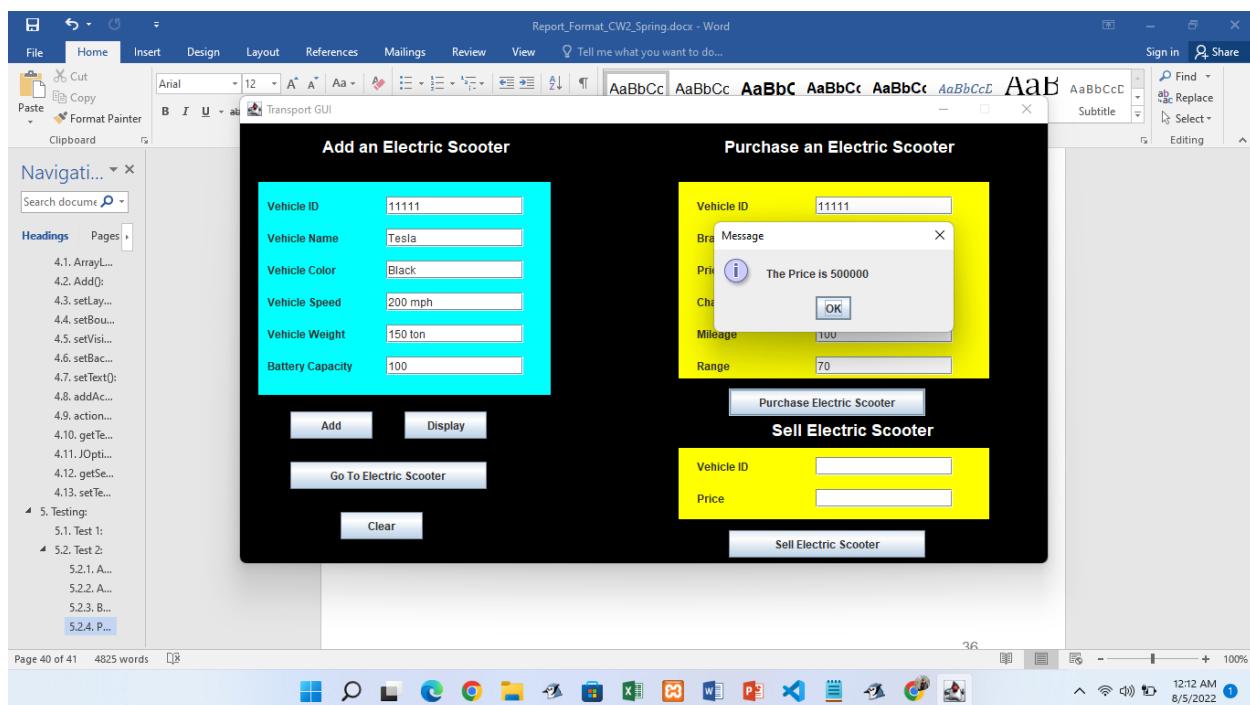


Figure 17: Screenshot of Test 2d

**Figure 18: Screenshot of Test 2d****Figure 19: Screenshot of Test 2d**

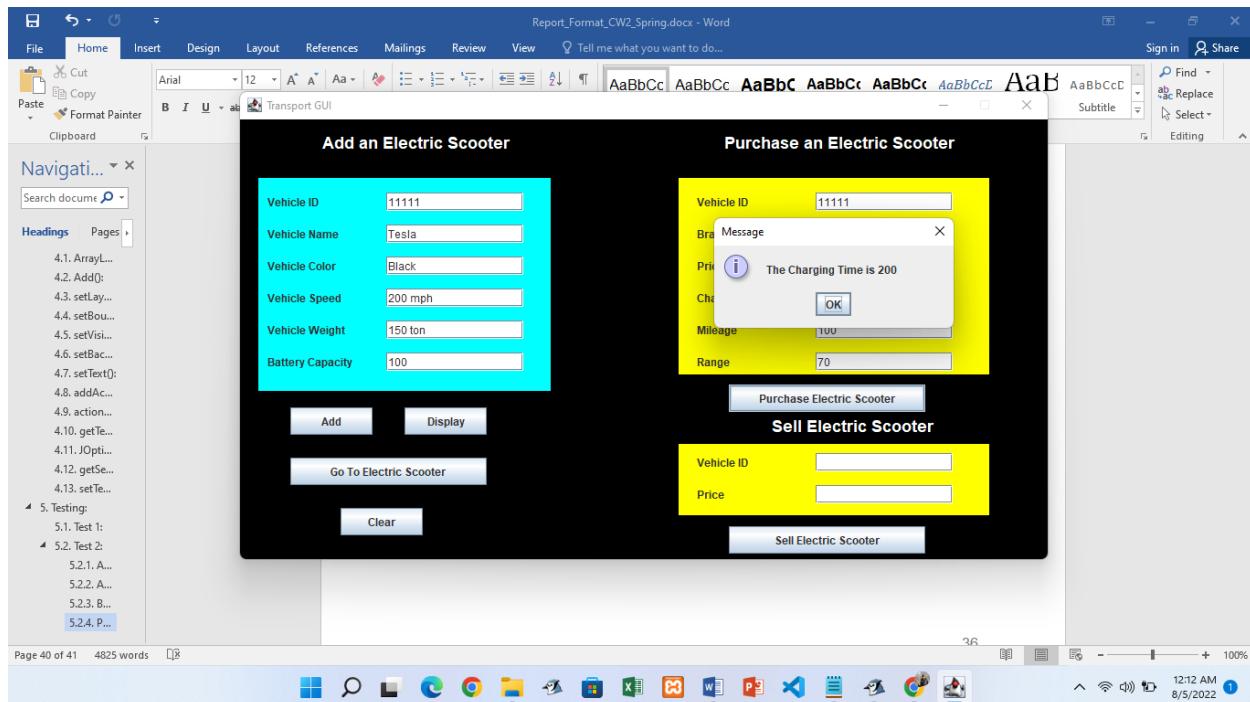


Figure 20: Screenshot of Test 2d

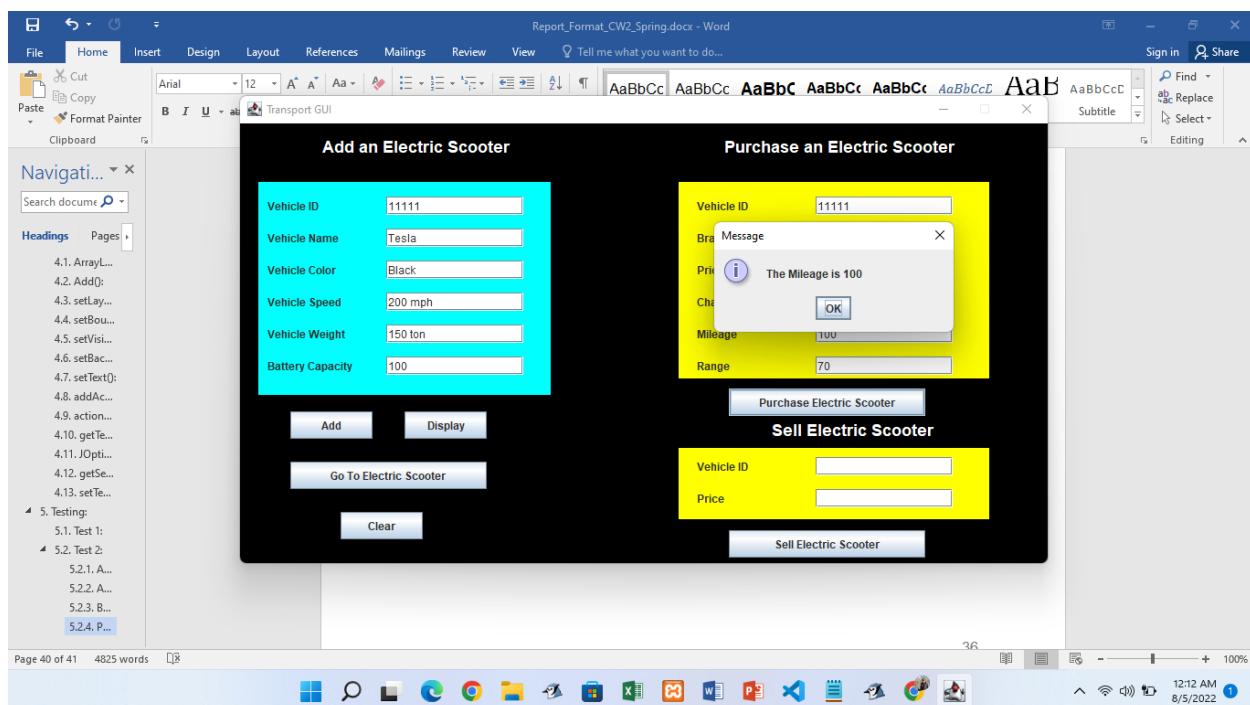


Figure 21: Screenshot of Test 2d

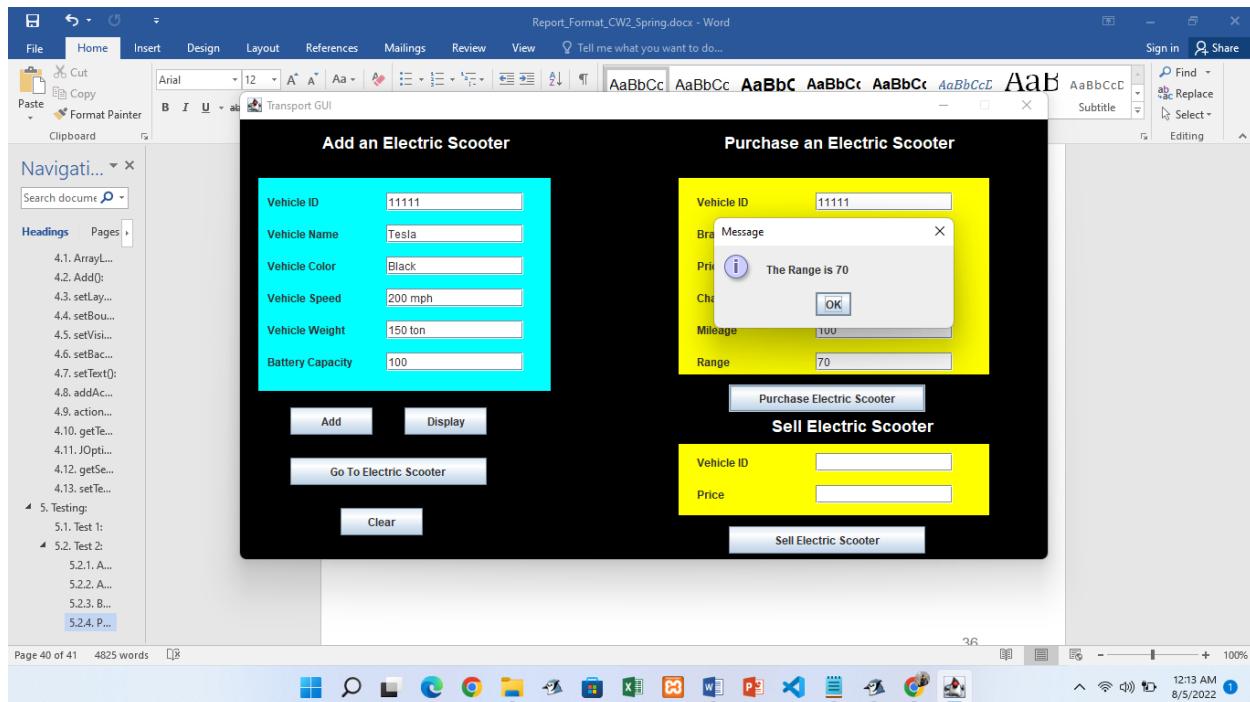


Figure 22: Screenshot of Test 2d

5.2.5. Sell the ElectricScooter

Objective	To sell the ElectricScooter.
Action	Entering the values of ElectricScooter, Click the sell the ElectricScooter button.
Expected Result	The ElectricScooter will be sold.
Actual Result	The ElectricScooter has been sold.
Conclusion	The test was successful.

Table 6: Test 2e

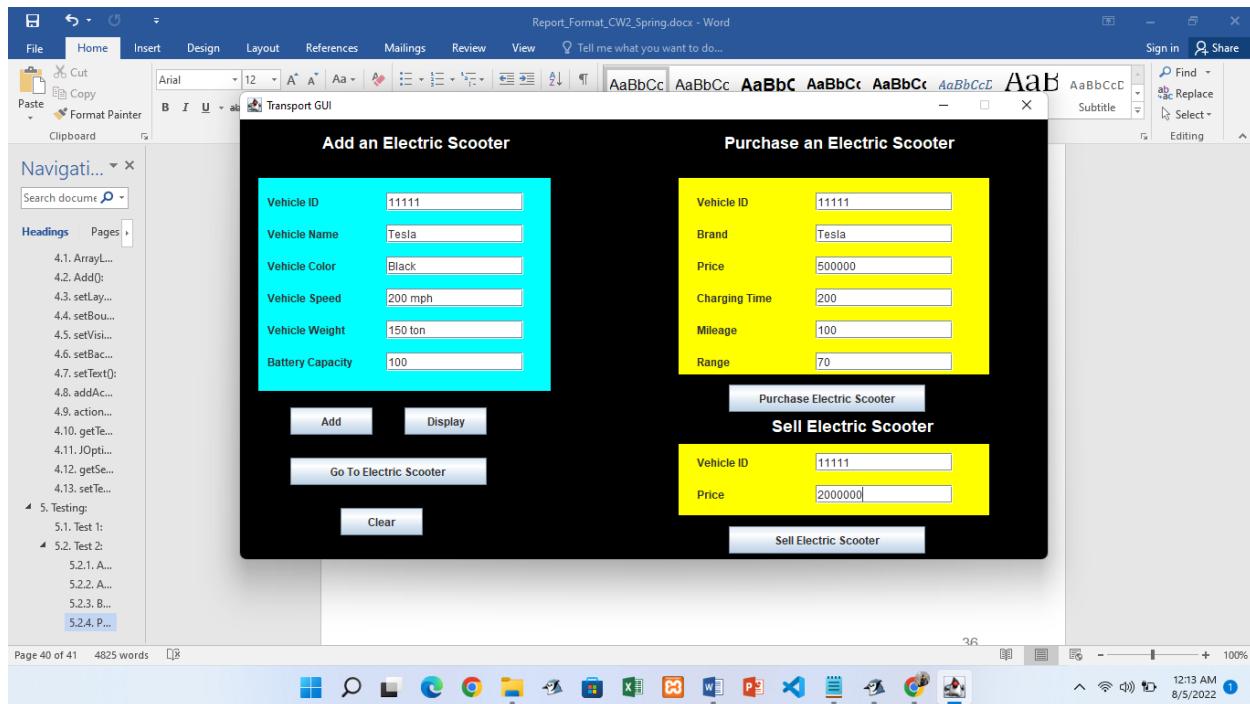


Figure 23: Filling the values to sell the electric scooter

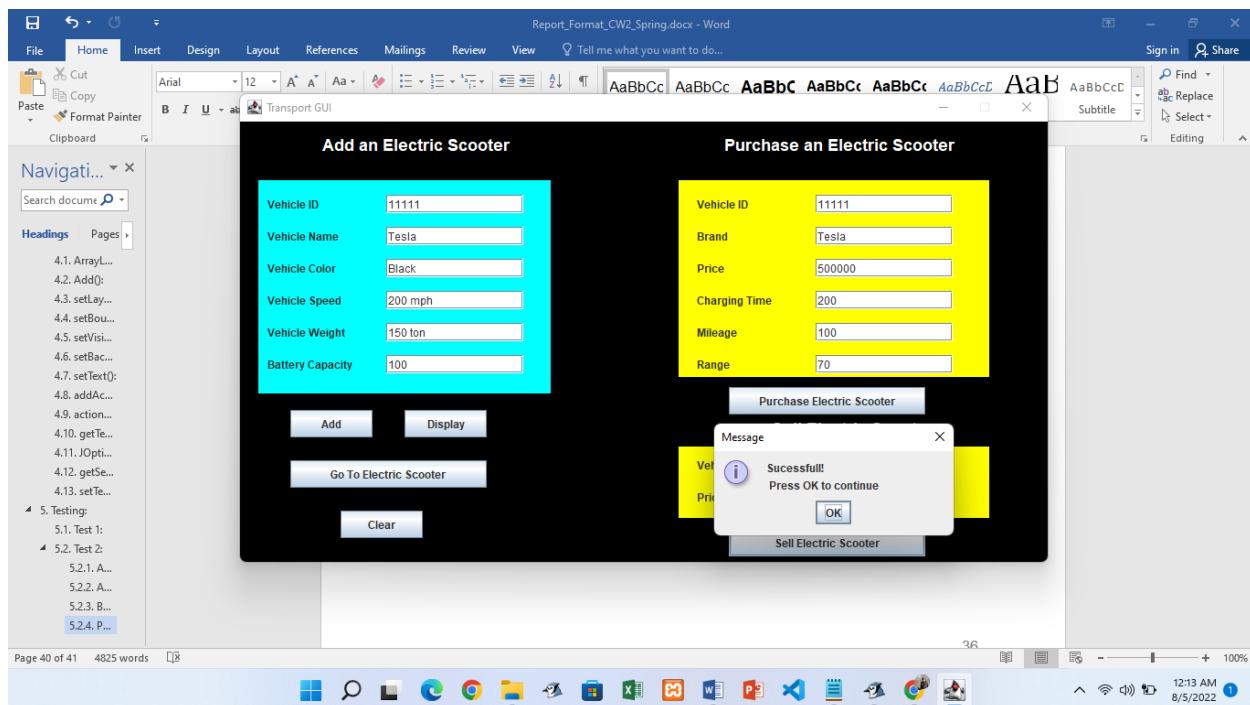


Figure 24: Screenshot of Test 2e

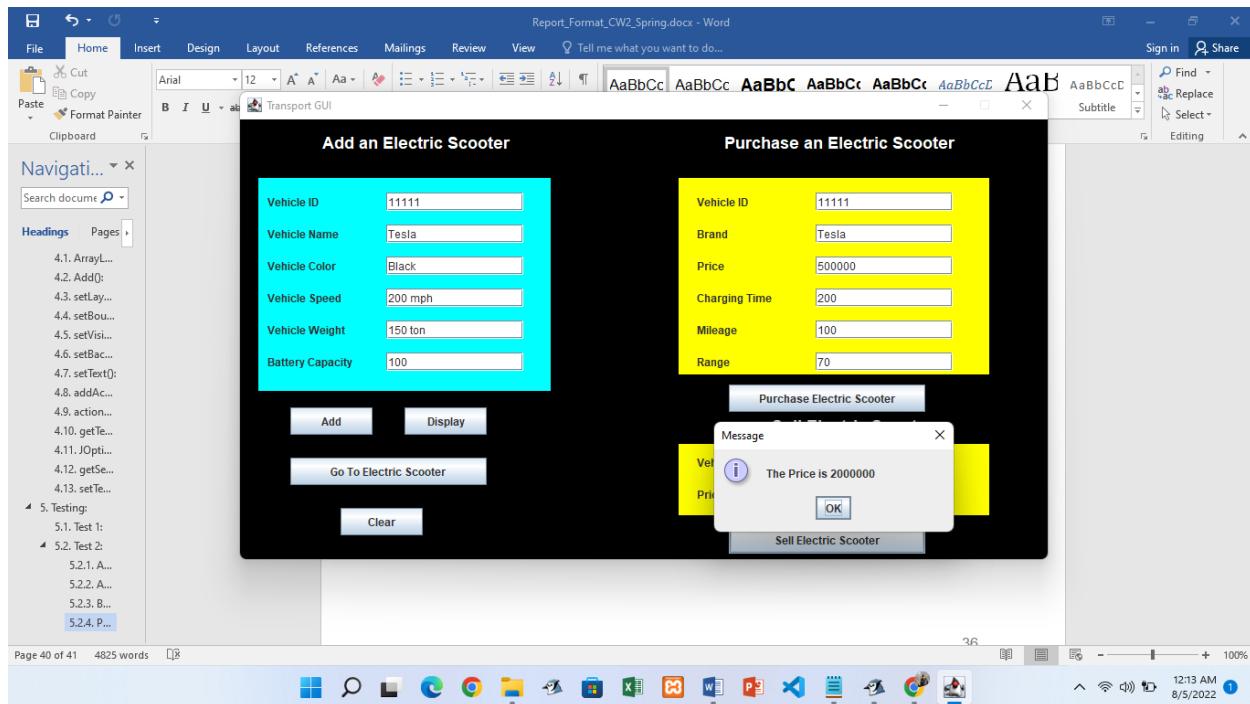


Figure 25: Screenshot of Test 2e

5.3. Test 3:

Objective	To enter invalid Vehicle ID.
Action	Entering the different Vehicle Ids in Add, book, purchase, and in sell.
Expected Result	The message dialog box with Invalid Vehicle ID will appear.
Actual Result	The message dialog box with Invalid Vehicle ID has been appear.
Conclusion	The test was successful.

Table 7: Test 3



Figure 26: Screenshot of Test 3

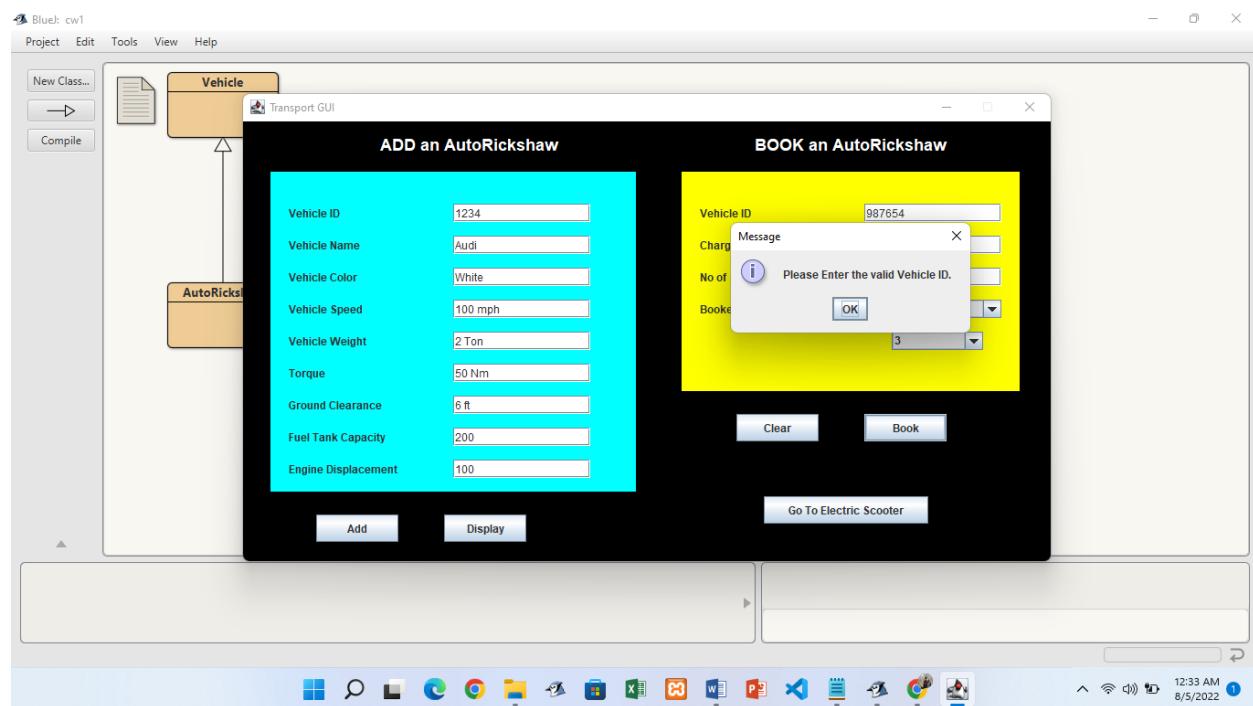
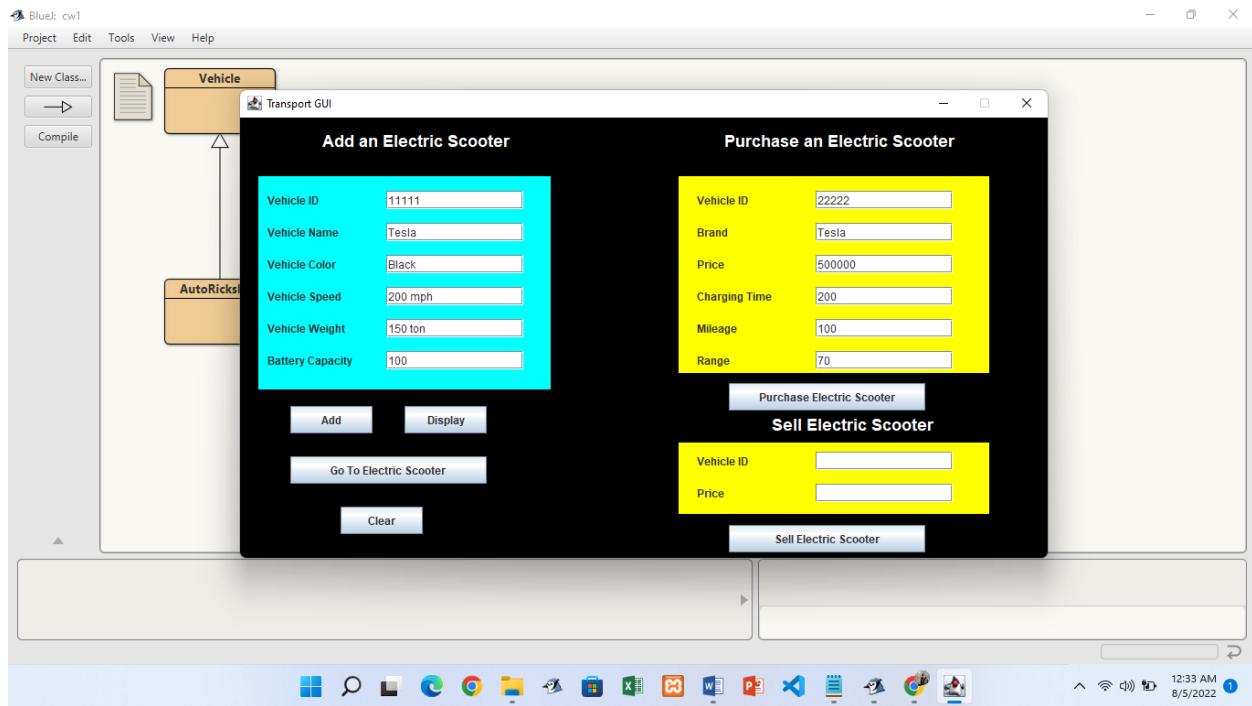
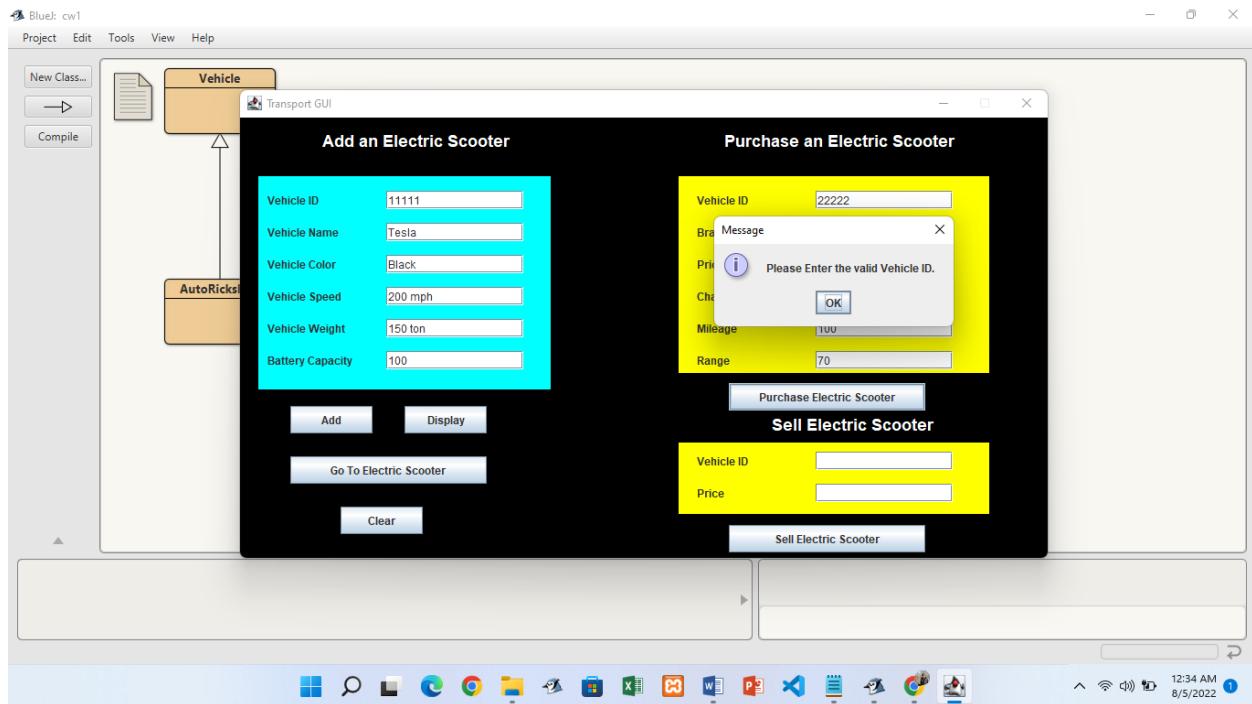


Figure 27: Screenshot of Test 3

**Figure 28: Screenshot of Test 3****Figure 29: Screenshot of Test 3**

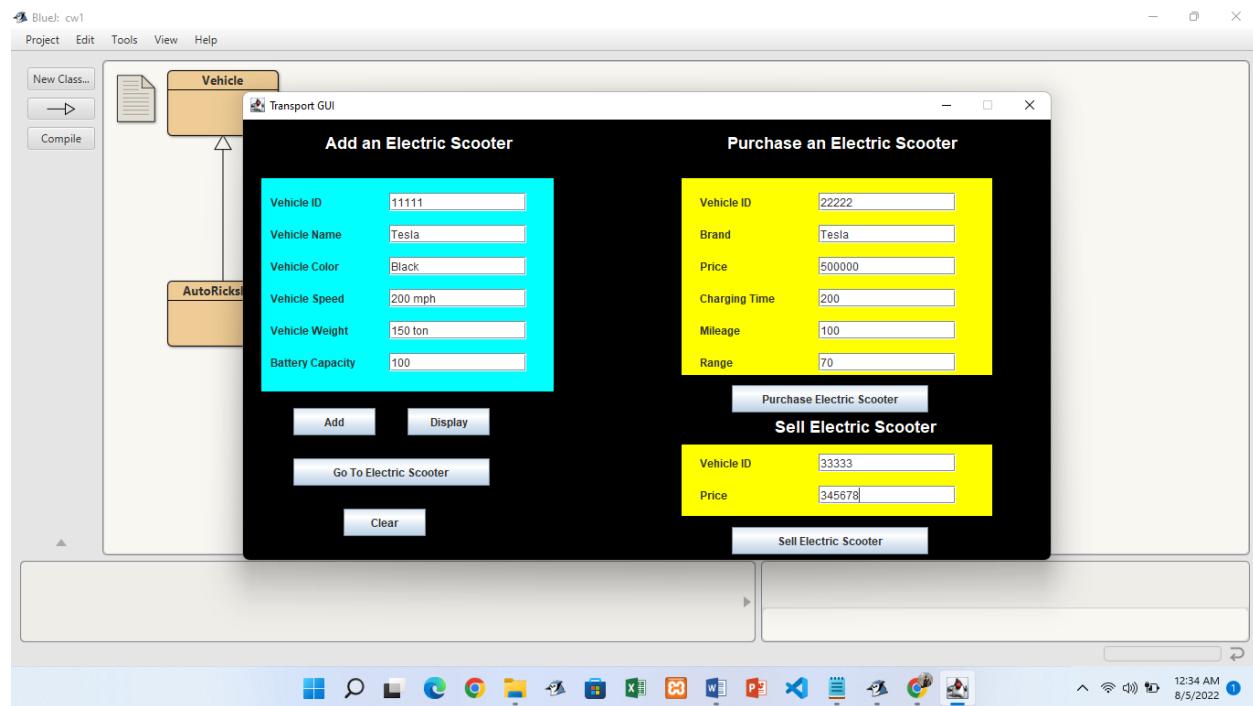


Figure 30: Screenshot of Test 3

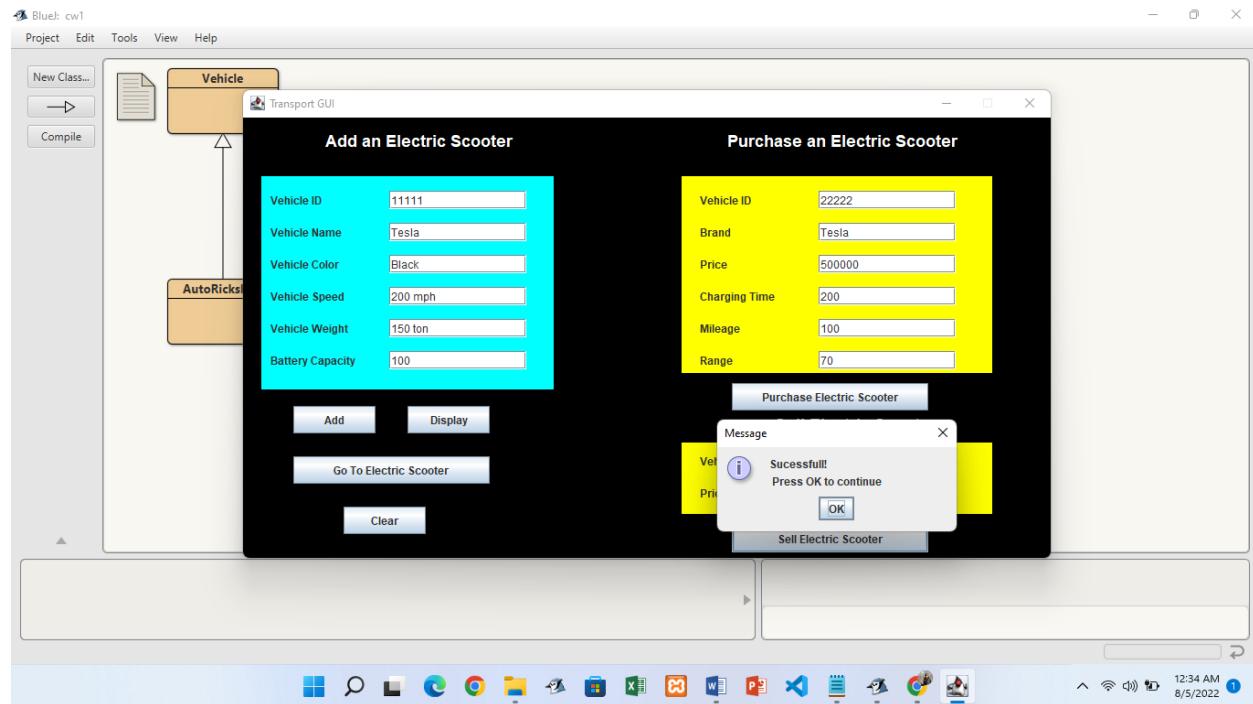


Figure 31: Screenshot of Test 3

6. Error Detection:

6.1. Error 1:

While I compiled my code, I found a Syntax error where I misspelled JFrame with frame.

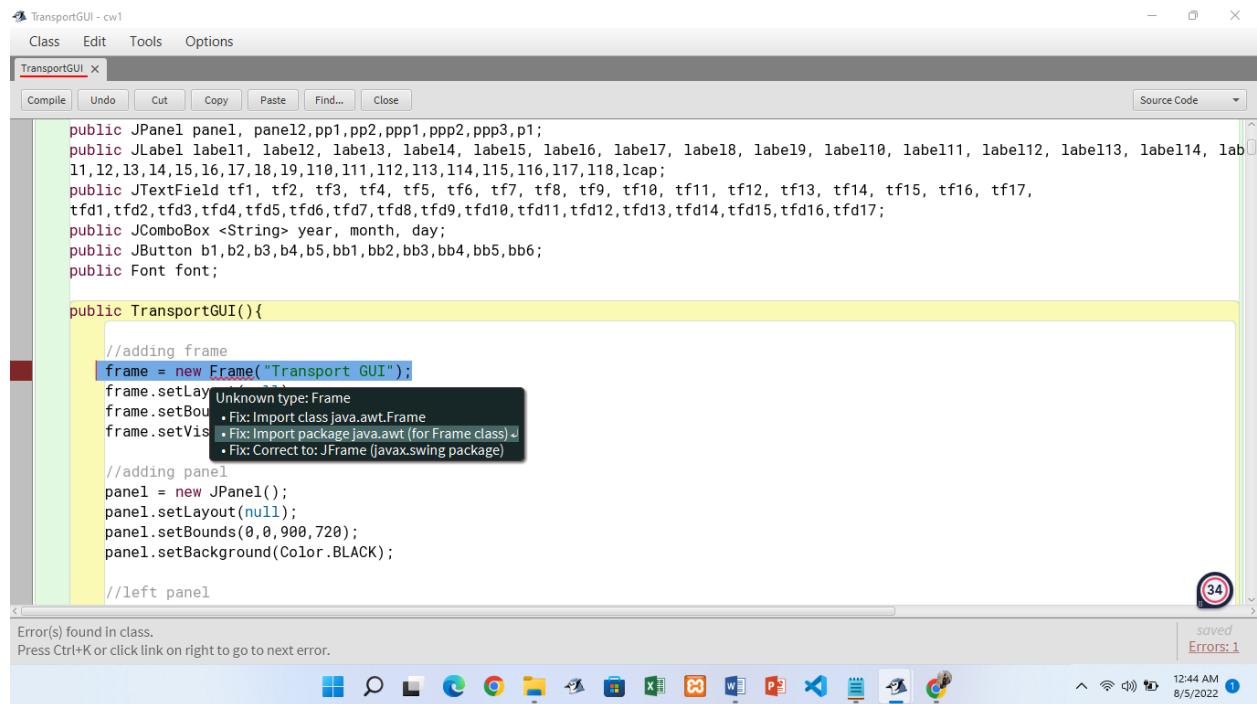


Figure 32: Error 1

6.2. Correction of error 1:

I fixed the syntax error by writing appropriate word JFrame.

```

public JPanel panel, panel2,pp1,pp2,ppp1,ppp2,ppp3,p1;
public JLabel label1, label2, label3, label4, label5, label6, label7, label8, label9, label10, label11, label12, label13, label14, label15, label16, label17, label18, label19, label10, label11, label12, label13, label14, label15, label16, label17, label18, lcap;
public JTextField tf1, tf2, tf3, tf4, tf5, tf6, tf7, tf8, tf9, tf10, tf11, tf12, tf13, tf14, tf15, tf16, tf17, tfd1, tfd2, tfd3, tfd4, tfd5, tfd6, tfd7, tfd8, tfd9, tfd10, tfd11, tfd12, tfd13, tfd14, tfd15, tfd16, tfd17;
public JComboBox <String> year, month, day;
public JButton b1,b2,b3,b4,b5,bb1,bb2,bb3,bb4,bb5,bb6;
public Font font;

public TransportGUI(){

    //adding frame
    frame = new JFrame("Transport GUI");
    frame.setLayout(null);
    frame.setBounds(250,70,900,520);
    frame.setVisible(true);

    //adding panel
    panel = new JPanel();
    panel.setLayout(null);
    panel.setBounds(0,0,900,720);
    panel.setBackground(Color.BLACK);

    //left panel
}

```

Class compiled - no syntax errors

Figure 33: Correction of error 1

6.3. Error 3:

I mistakenly put the wrong operator. I put – sign instead of + which gave me logical error.

```

AutoRickshaw auto = new AutoRickshaw(VehicleID, VehicleName, VehicleWeight,VehicleColor,VehicleSpeed, EngineDisplacement,
        ccr.add(auto);
JOptionPane.showMessageDialog(pp1,"Sucessfull! \n Press OK to continue");

} catch(NumberFormatException n)
{
    JOptionPane.showMessageDialog(pp1,"Invalid...Try Again");
}
if(e.getSource()==b2){

    try{

        String yr =year.getSelectedItem().toString();
        String mon =month.getSelectedItem().toString();
        String da =day.getSelectedItem().toString();
        String BookedDate = yr - mon + da;
        |
        int VehicleID = Integer.parseInt(first.getText());
        int ChargeAmount = Integer.parseInt(second.getText());
        int NoOfSeats = Integer.parseInt(third.getText());
    }
}

```

bad operand types for binary operator '-'
int VehicleID = Integer.parseInt(first.getText());
int ChargeAmount = Integer.parseInt(second.getText());
int NoOfSeats = Integer.parseInt(third.getText());

Error(s) found in class.
Press Ctrl+K or click link on right to go to next error.

Figure 34: Error 2

6.4. Correction of error 2:

I corrected my mistake by providing the proper operator to the program.

TransportGUI - cw1

Class Edit Tools Options

TransportGUI X

Compile Undo Cut Copy Paste Find... Close Source Code

```
        }catch(NumberFormatException n)
    {
        JOptionPane.showMessageDialog(pp1,"Invalid...Try Again");
    }
}
if(e.getSource()==b2){

    try{

        String yr =year.getSelectedItem().toString();
        String mon =month.getSelectedItem().toString();
        String da =day.getSelectedItem().toString();
        String BookedDate = yr + mon + da;

        int VehicleID = Integer.parseInt(tf9.getText());
        int ChargeAmount = Integer.parseInt(tf10.getText());
        int NoOfSeats = Integer.parseInt(tf11.getText());

        JOptionPane.showMessageDialog(pp2,"Sucessfull! \n Press OK to continue");
        for(Vehicle obj : ccr)
        {
            if(obj instanceof AutoRickshaw)
            {
                AutoRickshaw auto_obj = (AutoRickshaw) obj;

```

34

Class compiled - no syntax errors saved

100 AM
8/5/2022 1

Figure 35: Correction of error 2

6.5. Error 3

At the end of the program, I mistakenly forgot to close the program with ending curly braces which opened while creating the class.

The screenshot shows a Java code editor window titled "TransportGUI - cw1". The code is as follows:

```

    }
    if(e.getSource()==bb3){
        for(Vehicle swe : ccr)
        {
            if(swe instanceof ElectricScooter)
            {
                ElectricScooter elec_dis = (ElectricScooter) swe;
                elec_dis.DISPLAY();
            }
        }
    }
    public static void main(String [] args){
        TransportGUI ref = new TransportGUI();
    }
}

```

The code editor highlights several lines in red, indicating syntax errors. A status bar at the bottom left says "Error(s) found in class. Press Ctrl+K or click link on right to go to next error." A notification icon in the bottom right corner shows "34" errors.

Figure 36: Error 3

6.6. Correcting error 3

I corrected my error by finishing my program with ending curly braces which was missing.

The screenshot shows the same Java code editor window after the error has been fixed. The code now ends with a closing brace for the main method:

```

    }
    if(e.getSource()==bb3){
        for(Vehicle swe : ccr)
        {
            if(swe instanceof ElectricScooter)
            {
                ElectricScooter elec_dis = (ElectricScooter) swe;
                elec_dis.DISPLAY();
            }
        }
    }
    public static void main(String [] args){
        TransportGUI ref = new TransportGUI();
    }
}

```

A status bar at the bottom left says "Class compiled - no syntax errors". The notification icon in the bottom right corner still shows "34" errors, likely referring to other parts of the application.

Figure 37: Correcting error 3

7. Conclusion:

This was our second coursework of this module. While working on this coursework I had overcome a few challenges as my Laptop was in poor condition and my health was also unpleasant but somehow I pushed myself and completed this given project under deadline. During the coding part, I faced many problems as I got lots of errors, and figuring out those problems was a headache for me. The biggest boost for me was the tutorials and workshop classes and mainly the discussion classes to complete this coursework under the given deadline.

I researched from different sources like websites, physical books, and tutorial videos to get more knowledge. This coursework also enhanced my researching skills and I am so sure that it will contribute to make me better developer for my future. I learned mainly how to develop Graphical User Interface (GUI) and I also learned to work with Array List. Time management and fear of not completing my coursework on time were the biggest challenges I faced during this time and now I am really glad that I am able to submit my coursework on time. Overall, it was the fun experience and I enjoyed doing this coursework.

APPENDIX:

```
import javax.swing.*;
import java.util.*;
import java.awt.Font;
import java.awt.event.*;
import java.awt.Color;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.JOptionPane;
import javax.swing.JLabel;

public class TransportGUI implements ActionListener
{
    ArrayList<Vehicle> ccr = new ArrayList<Vehicle>();

    public JFrame frame;
    public JPanel panel, panel2, pp1, pp2, ppp1, ppp2, ppp3, p1;
    public JLabel label1, label2, label3, label4, label5, label6, label7, label8, label9,
    label10, label11, label12, label13, label14, label15, label16, label17, label18, label19,
    l1, l2, l3, l4, l5, l6, l7, l8, l9, l10, l11, l12, l13, l14, l15, l16, l17, l18, lcap;
    public JTextField tf1, tf2, tf3, tf4, tf5, tf6, tf7, tf8, tf9, tf10, tf11, tf12, tf13, tf14, tf15,
    tf16, tf17,
    tfd1, tfd2, tfd3, tfd4, tfd5, tfd6, tfd7, tfd8, tfd9, tfd10, tfd11, tfd12, tfd13, tfd14, tfd15, tfd16, tfd17;
    public JComboBox <String> year, month, day;
    public JButton b1, b2, b3, b4, b5, bb1, bb2, bb3, bb4, bb5, bb6;
    public Font font;

    public TransportGUI(){

        //adding frame
        frame = new JFrame("Transport GUI");
        frame.setLayout(null);
        frame.setBounds(250,70,900,520);
        frame.setVisible(true);

        //adding panel
        panel = new JPanel();
        panel.setLayout(null);
        panel.setBounds(0,0,900,720);
        panel.setBackground(Color.BLACK);

        //left panel
        pp1 = new JPanel();
        pp1.setLayout(null);
        pp1.setBounds(30,55,400,350);
```

```
pp1.setBackground(Color.CYAN);

//right panel
pp2 = new JPanel();
pp2.setLayout(null);
pp2.setBounds(480,55,370,240);
pp2.setBackground(Color.YELLOW);

//left heading label
label1 = new JLabel();
label1.setText("ADD an AutoRickshaw");
label1.setBounds(150,0,400,50);
label1.setForeground(Color.white);
panel.add(label1);

//right heading label
lcap = new JLabel();
lcap.setText("BOOK an AutoRickshaw");
lcap.setBounds(560,0,400,50);
lcap.setForeground(Color.white);
panel.add(lcap);

//setting font
Font fn = new Font("Aliseo Font Family-Sans Serif Font", Font.BOLD,18);
label1.setFont(fn);
lcap.setFont(fn);

// first label
label2 = new JLabel("Vehicle ID");
label2.setBounds(50,90,150,20);
panel.add(label2);

//first text field
tf1 = new JTextField();
tf1.setBounds(230,90,150,20);
panel.add(tf1);

// second label
label3 = new JLabel("Vehicle Name");
```

```
label3.setBounds(50,125,150,20);
panel.add(label3);

//second text field
tf2 = new JTextField();
tf2.setBounds(230,125,150,20);
panel.add(tf2);

//third label
label4 = new JLabel("Vehicle Color");
label4.setBounds(50,160,150,20);
panel.add(label4);

//third text field
tf3 = new JTextField();
tf3.setBounds(230,160,150,20);
panel.add(tf3);

//fourth label
label5 = new JLabel("Vehicle Speed");
label5.setBounds(50,195,150,20);
panel.add(label5);

//fourth text field
tf4 = new JTextField();
tf4.setBounds(230,195,150,20);
panel.add(tf4);

//fifth label
label6 = new JLabel("Vehicle Weight");
label6.setBounds(50,230,150,20);
panel.add(label6);

//fifth text field
tf5 = new JTextField();
tf5.setBounds(230,230,150,20);
panel.add(tf5);

//sixth label
label7 = new JLabel("Torque");
label7.setBounds(50,265,150,20);
panel.add(label7);

//sixth text field
tf6 = new JTextField();
```

```
tf6.setBounds(230,265,150,20);
panel.add(tf6);

//seventh label
label8 = new JLabel("Ground Clearance");
label8.setBounds(50,300,150,20);
panel.add(label8);

//seventh text field
tf7 = new JTextField();
tf7.setBounds(230,300,150,20);
panel.add(tf7);

//eighth label
label9 = new JLabel("Fuel Tank Capacity");
label9.setBounds(50,335,150,20);
panel.add(label9);

//eight text field
tf8 = new JTextField();
tf8.setBounds(230,335,150,20);
panel.add(tf8);

//nineth label
label10 = new JLabel("Engine Displacement");
label10.setBounds(50, 370, 150,20);
panel.add(label10);

//nineth text field
tf17 = new JTextField();
tf17.setBounds(230,370,150,20);
panel.add(tf17);

//ninth label
label10 = new JLabel("Vehicle ID");
label10.setBounds(500,90,150,20);
panel.add(label10);

//ninth text field
tf9 = new JTextField();
tf9.setBounds(680,90,150,20);
panel.add(tf9);
```

```
//tenth label
label11 = new JLabel("Charge Amount");
label11.setBounds(500,125,150,20);
panel.add(label11);

//tenth text field
tf10 = new JTextField();
tf10.setBounds(680,125,150,20);
panel.add(tf10);

//eleventh label
label12 = new JLabel("No of Seats");
label12.setBounds(500,160,150,20);
panel.add(label12);

//eleventh text field
tf11 = new JTextField();
tf11.setBounds(680,160,150,20);
panel.add(tf11);

//18th label
label19 = new JLabel("Booked Date");
label19.setBounds(500,195,150,20);
panel.add(label19);

String[] Ydate={"Year","2015","2016","2017","2018","2019","2020","2021","2022"};
//combobox for year
year = new JComboBox(Ydate);
year.setBounds(680,195,70,20);
panel.add(year);

String[] Mdate={"Month", "Jan", "Feb", "Mar", "Apr", "May", "Jun", "Jul", "Aug",
"Sept", "Oct", "Nov", "Dec"};
//combox for month
month = new JComboBox(Mdate);
month.setBounds(760,195,70,20);
panel.add(month);
```

```
String[] Ddate={"Select
Day","1","2","3","4","5","6","7","8","9","10","11","12","13","14","15","16","17","18","19","20
","21","22","23","24","25","26","27","28","29","30","31","32"};
//combobox for day
day = new JComboBox(Ddate);
day.setBounds(710,230,100,20);
panel.add(day);

//Add an autorickshaw button
b1 = new JButton("Add");
b1.setBounds(80,430,90,30);
panel.add(b1);

//book an autorickshaw button
b2 = new JButton("Book");
b2.setBounds(680,320,90,30);
panel.add(b2);

//display button
b3 = new JButton("Display");
b3.setBounds(220,430,90,30);
panel.add(b3);

//clear button
b4 = new JButton("Clear");
b4.setBounds(540,320,90,30);
panel.add(b4);

//Next button
b5 = new JButton("Go To Electric Scooter");
b5.setBounds(570,410,180,30);
panel.add(b5);

//second panel
panel2 = new JPanel();
panel2.setLayout(null);
panel2.setBounds(0,0,900,720);
panel2.setBackground(Color.BLACK);

//second pannel left panel
```

```
ppp1 = new JPanel();
ppp1.setLayout(null);
ppp1.setBounds(20,64,320,233);
ppp1.setBackground(Color.CYAN);

//second panel right panel
ppp2 = new JPanel();
ppp2.setLayout(null);
ppp2.setBounds(480,64,340,215);
ppp2.setBackground(Color.YELLOW);

//second panel bottom-right panel
ppp3 = new JPanel();
ppp3.setLayout(null);
ppp3.setBounds(480,355,340,78);
ppp3.setBackground(Color.YELLOW);

//second panel 1st label
l1 = new JLabel();
l1.setText("Add an Electric Scooter");
l1.setBounds(90,0,400,50);
l1.setFont(fn);
l1.setForeground(Color.white);
panel2.add(l1);

//second panel right caption
l17 = new JLabel();
l17.setText("Purchase an Electric Scooter");
l17.setBounds(530,0,400,50);
l17.setFont(fn);
l17.setForeground(Color.white);
panel2.add(l17);

//2nd label
l2 = new JLabel("Vehicle ID");
l2.setBounds(30,80,150,20);
panel2.add(l2);

///second panel 1st text field
tfd1 = new JTextField();
tfd1.setBounds(160,80,150,20);
panel2.add(tfd1);
```

```
//3rd label  
l3 = new JLabel("Vehicle Name");  
l3.setBounds(30,115,150,20);  
panel2.add(l3);
```

```
//2nd text field  
tfd2 = new JTextField();  
tfd2.setBounds(160,115,150,20);  
panel2.add(tfd2);
```

```
//4th label  
l4 = new JLabel("Vehicle Color");  
l4.setBounds(30,150,150,20);  
panel2.add(l4);
```

```
//3rd text field  
tfd3 = new JTextField();  
tfd3.setBounds(160,150,150,20);  
panel2.add(tfd3);
```

```
//5th label  
l5 = new JLabel("Vehicle Speed");  
l5.setBounds(30,185,150,20);  
panel2.add(l5);
```

```
//4th text field  
tfd4 = new JTextField();  
tfd4.setBounds(160,185,150,20);  
panel2.add(tfd4);
```

```
//6th label  
l6 = new JLabel("Vehicle Weight");  
l6.setBounds(30,220,150,20);  
panel2.add(l6);
```

```
//5th text field  
tfd5 = new JTextField();  
tfd5.setBounds(160,220,150,20);  
panel2.add(tfd5);
```

```
//7th label  
l7 = new JLabel("Battery Capacity");  
l7.setBounds(30,255,150,20);  
panel2.add(l7);  
  
//6th text field  
tfd6 = new JTextField();  
tfd6.setBounds(160,255,150,20);  
panel2.add(tfd6);  
  
//10th label  
l10 = new JLabel("Vehicle ID");  
l10.setBounds(500,80,150,20);  
panel2.add(l10);  
  
//9th text field  
tfd9 = new JTextField();  
tfd9.setBounds(630,80,150,20);  
panel2.add(tfd9);  
  
//11th label  
l11 = new JLabel("Brand");  
l11.setBounds(500,115,150,20);  
panel2.add(l11);  
  
//tenth text field  
tfd10 = new JTextField();  
tfd10.setBounds(630,115,150,20);  
panel2.add(tfd10);  
  
//price label  
l18 = new JLabel("Price");  
l18.setBounds(500,150,150,20);  
panel2.add(l18);  
  
//price label text field  
tfd17 = new JTextField();  
tfd17.setBounds(630,150,150,20);  
panel2.add(tfd17);
```

```
//12th label  
l12 = new JLabel("Charging Time");  
l12.setBounds(500,185,150,20);  
panel2.add(l12);
```

```
//eleventh text field  
tfd11 = new JTextField();  
tfd11.setBounds(630,185,150,20);  
panel2.add(tfd11);
```

```
//13th label  
l13 = new JLabel("Mileage");  
l13.setBounds(500,220,150,20);  
panel2.add(l13);
```

```
//12th text field  
tfd12 = new JTextField();  
tfd12.setBounds(630,220,150,20);  
panel2.add(tfd12);
```

```
//14th label  
l14 = new JLabel("Range");  
l14.setBounds(500,255,150,20);  
panel2.add(l14);
```

```
//13th text field  
tfd13 = new JTextField();  
tfd13.setBounds(630,255,150,20);  
panel2.add(tfd13);
```

```
//15th label  
l8 = new JLabel("Sell Electric Scooter");  
l8.setFont(fn);  
l8.setForeground(Color.white);  
l8.setBounds(582,325,180,20);  
panel2.add(l8);
```

```
//16th label  
l9 = new JLabel("Vehicle ID");  
l9.setBounds(500,365,150,20);  
panel2.add(l9);  
  
//14th text field  
tfd14 = new JTextField();  
tfd14.setBounds(630,365,150,20);  
panel2.add(tfd14);  
  
  
//17th label  
l16 = new JLabel("Price");  
l16.setBounds(500,400,150,20);  
panel2.add(l16);  
  
//15th text field  
tfd15 = new JTextField();  
tfd15.setBounds(630,400,150,20);  
panel2.add(tfd15);  
  
  
//second panel buttons  
//add button  
bb1 = new JButton("Add");  
bb1.setBounds(55,315,90,30);  
panel2.add(bb1);  
  
//display button  
bb3 = new JButton("Display");  
bb3.setBounds(180,315,90,30);  
panel2.add(bb3);  
  
//Go to AutoRickshaw button  
bb5 = new JButton("Go To Electric Scooter");  
bb5.setBounds(55,370,215,30);  
panel2.add(bb5);  
  
  
//purchase electric scooter button  
bb6 = new JButton("Purchase Electric Scooter");  
bb6.setBounds(535,290,215,30);  
panel2.add(bb6);
```

```
//sell electric scooter button  
bb2 = new JButton("Sell Electric Scooter");  
bb2.setBounds(535,445,215,30);  
panel2.add(bb2);
```

```
//clear button  
bb4 = new JButton("Clear");  
bb4.setBounds(110,425,90,30);  
panel2.add(bb4);
```

```
frame.add(panel);  
panel.setVisible(true);  
frame.setResizable(false);
```

```
frame.add(panel2);  
panel2.setVisible(false);  
ppp1.setVisible(true);  
ppp2.setVisible(true);  
ppp3.setVisible(true);
```

```
panel.add(b5);
```

```
p1 = new JPanel();  
p1.setLayout(null);  
p1.setBounds(200,200,90,70);  
p1.setVisible(false);
```

```
panel.add(p1);  
panel.add(pp1);  
panel.add(pp2);  
panel2.add(ppp1);  
panel2.add(ppp2);  
panel2.add(ppp3);
```

```
b1.addActionListener(this);  
b2.addActionListener(this);  
b3.addActionListener(this);
```

```

b4.addActionListener(this);
b5.addActionListener(this);

bb1.addActionListener(this);
bb2.addActionListener(this);
bb3.addActionListener(this);
bb4.addActionListener(this);
bb5.addActionListener(this);
bb6.addActionListener(this);

}

public void actionPerformed(ActionEvent e)
{
    if(e.getSource()==b5){
        panel2.setVisible(true);
        panel.setVisible(false);
    }
    if(e.getSource()==b1){

        try
        {
            int VehicleID = Integer.parseInt(tf1.getText());
            String VehicleName = tf2.getText();
            String VehicleColor = tf3.getText();
            String VehicleSpeed = tf4.getText();
            String VehicleWeight = tf5.getText();
            String Torque = tf6.getText();

            int FTankCapacity = Integer.parseInt(tf8.getText());
            int EngineDisplacement = Integer.parseInt(tf17.getText());
            String GroundClearance = tf7.getText();

            AutoRickshaw auto = new AutoRickshaw(VehicleID, VehicleName,
VehicleWeight,VehicleColor,VehicleSpeed, EngineDisplacement, Torque,
FTankCapacity, GroundClearance);

            ccr.add(auto);
            JOptionPane.showMessageDialog(pp1,"Sucessfull! \n Press OK to
continue");

        }catch(NumberFormatException n)
        {
            JOptionPane.showMessageDialog(pp1,"Invalid...Try Again");
        }
    }
}

```

```

        }
    }
    if(e.getSource()==b2){
        try{
            String yr =year.getSelectedItem().toString();
            String mon =month.getSelectedItem().toString();
            String da =day.getSelectedItem().toString();
            String BookedDate = yr + mon + da;

            int VehicleID = Integer.parseInt(tf9.getText());
            int ChargeAmount = Integer.parseInt(tf10.getText());
            int NoOfSeats = Integer.parseInt(tf11.getText());

            JOptionPane.showMessageDialog(pp2,"Sucessfull! \n Press OK to continue");
            for(Vehicle obj : ccr)
            {
                if(obj instanceof AutoRickshaw)
                {
                    AutoRickshaw auto_obj = (AutoRickshaw) obj;

                    if(auto_obj.getVehicleID() == VehicleID)
                    {
                        JOptionPane.showMessageDialog(pp2, "Your Booked Date is "+"+
BookedDate);
                        JOptionPane.showMessageDialog(pp2, "No of Seats are "+"+
NoOfSeats);
                        JOptionPane.showMessageDialog(pp2, "Charge Amount is " +"+"+
ChargeAmount);

                        if(auto_obj.getIsBooked() ==true)
                        {
                            JOptionPane.showMessageDialog(pp2,"The Vehicle ID with " +" "+
VehicleID +"+"+ " is Booked");

                        }
                        else{
                            auto_obj.BookAutoRickshaw(BookedDate, ChargeAmount,
NoOfSeats);
                        }
                    }
                else{
                    JOptionPane.showMessageDialog(pp2,"Please Enter the valid Vehicle
ID.");
                }
            }
        }
    }
}

```

```

        }
    }
}
}catch(NumberFormatException n)
{
    JOptionPane.showMessageDialog(pp2,"Invalid...Try Again");
}
}
if(e.getSource()==bb1){
    try
    {
        int VehicleID = Integer.parseInt(tfd1.getText());
        String VehicleName = tfd2.getText();
        String VehicleColor = tfd3.getText();
        String VehicleSpeed = tfd4.getText();
        String VehicleWeight = tfd5.getText();

        int BatteryCapacity = Integer.parseInt(tfd6.getText());

        ElectricScooter elec = new ElectricScooter(VehicleID, VehicleName,
VehicleWeight,VehicleColor,VehicleSpeed, BatteryCapacity );

        ccr.add(elec);
        JOptionPane.showMessageDialog(ppp1,"Sucessfull! \n Press OK to
continue");

    }catch(NumberFormatException n)
    {
        JOptionPane.showMessageDialog(ppp1,"Invalid...Try Again");
    }
}
if(e.getSource()==bb6){

    try{
        int VehicleID = Integer.parseInt(tfd9.getText());
        String Brand = tfd10.getText();
        String ChargingTime = tfd11.getText();
        String Mileage = tfd12.getText();
        int Range = Integer.parseInt(tfd13.getText());
        int Price = Integer.parseInt(tfd17.getText());
        JOptionPane.showMessageDialog(ppp2,"Sucessfull! \n Press OK to continue");
        for(Vehicle ref : ccr)
        {
            if(ref instanceof ElectricScooter)
}

```

```

    {
        ElectricScooter elec_obj = (ElectricScooter) ref;

        if(elec_obj.getVehicleID() == VehicleID)
        {
            JOptionPane.showMessageDialog(ppp2, "Your Brand is "+"+ Brand);
            JOptionPane.showMessageDialog(ppp2, "The Price is "+"+ Price);
            JOptionPane.showMessageDialog(ppp2, "The Charging Time is "+"+
ChargingTime);
            JOptionPane.showMessageDialog(ppp2, "The Mileage is " +"+"+
Mileage);
            JOptionPane.showMessageDialog(ppp2, "The Range is " +"+"+ Range);

            if(elec_obj.getHasPurchased() ==true)
            {
                JOptionPane.showMessageDialog(ppp2,"The Vehicle ID with " +" "+
VehicleID +"+"+ " has been purchased");

            }
            else{
                elec_obj.purchase(Brand,Price,ChargingTime,Mileage,Range);

            }
        }
        else{
            JOptionPane.showMessageDialog(ppp2,"Please Enter the valid Vehicle
ID.");
        }
    }
}catch(NumberFormatException n)
{
    JOptionPane.showMessageDialog(ppp2,"Invalid...Try Again");
}
}

if(e.getSource()==bb2){

try{
int VehicleID = Integer.parseInt(tfld14.getText());
int Price = Integer.parseInt(tfld15.getText());
JOptionPane.showMessageDialog(ppp3,"Sucessfull! \n Press OK to continue");
for(Vehicle refff : ccr)
{
    if(refff instanceof ElectricScooter)
    {
        ElectricScooter elec_sell = (ElectricScooter) refff;
    }
}
}
}

```

```

if(elec_sell.getVehicleID() == VehicleID)
{
    JOptionPane.showMessageDialog(ppp3, "The Price is "+"+ Price);
    if(elec_sell.getHasSold() ==true)
    {
        JOptionPane.showMessageDialog(ppp3,"The Vehicle ID with " +" "+
VehicleID +"+"+ " is sold out");

    }
    else{
        elec_sell.sell(Price);

    }
}
else{
    JOptionPane.showMessageDialog(ppp3,"Please Enter the valid Vehicle
ID.");
}
}
}
}catch(NumberFormatException n)
{
    JOptionPane.showMessageDialog(ppp3,"Invalid...Try Again");
}
}
if(e.getSource()==bb5){
    panel.setVisible(true);
    panel2.setVisible(false);
}
if(e.getSource()==b4){
    tf1.setText("");
    tf2.setText("");
    tf3.setText("");
    tf4.setText("");
    tf5.setText("");
    tf6.setText("");
    tf7.setText("");
    tf8.setText("");
    tf9.setText("");
    tf10.setText("");
    tf11.setText("");
    tf17.setText("");
}
if(e.getSource()==bb4){
    tfd1.setText("");
}

```

```

        tfd2.setText("");
        tfd3.setText("");
        tfd4.setText("");
        tfd5.setText("");
        tfd6.setText("");
        tfd9.setText("");
        tfd10.setText("");
        tfd11.setText("");
        tfd12.setText("");
        tfd13.setText("");
        tfd14.setText("");
        tfd15.setText("");
        tfd17.setText("");
    }
    if(e.getSource()==b3){
        for(Vehicle sw : ccr)
        {
            if(sw instanceof AutoRickshaw)
            {
                AutoRickshaw auto_dis = (AutoRickshaw) sw;
                auto_dis.Display();
            }
        }
    }
    if(e.getSource()==bb3){
        for(Vehicle swe : ccr)
        {
            if(swe instanceof ElectricScooter)
            {
                ElectricScooter elec_dis = (ElectricScooter) swe;
                elec_dis.DISPLAY();
            }
        }
    }
}
public static void main(String [] args){
    TransportGUI ref = new TransportGUI();
}
}

```

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