LONDON METROPOLITAN UNIVERSITY

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(इस्लिङ्टन कलेज)

Module Code & Module Title

CS4001NI Programming

Assessment Weightage & Type 30%

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Year and Semester

2021-22 Spring - 2

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Assignment Due Date: 2022 5th August

Assignment Submission Date: 2022 5th August

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 mark of zero will be awarded.

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1. Introduction

1.1 About Coursework

The project I created for the first assignment of the coursework will now have a TransportGUI class. I must create a graphical user interface (GUI) for a system that maintains information about the vehicle and its details in an Arraylist for the second coursework. The primary method will be contained in the class, which will also be tested via the command line. Additionally, I will be required to produce a report on your program. There are 4 classes total in this project. auto, autorickshaw, electric scooter, and transport GUI. In this instance, the vehicle is shown as the parent class, while the others are subclasses. Subclasses include the autorickshaw and electric scooter. Additionally, the vehicle class inherits both of the subclasses.

In that project, I add a new class called TransportGUI. I Uploaded my TransportGUI.java file along with the Vehicle.java, AutoRickshaw.java, and ElectricScooter.java files from the first section of the coursework submitted.

The components of my GUI are the same, but I am free to use a different layout if I think it will enhance its appearance, usability, etc. An array list (not an array) of the type Vehicle class should be kept in the TransportGUI class to hold the ElectricScooter and AutoRick Shaw.

1.2 Tools Used

a. BlueJ

BlueJ is a development environment that helps us to create and develop Java apps quickly and easily. This tool has a user-friendly interface that allows newbies to get started without feeling overwhelmed. BlueJ was created primarily for educational purposes. Many universities have BlueJ-based courses are now available. This application is Windows compatible. Mac OS X, Linux, and several other operating systems are all available. BlueJ exemplified a few features that are not available in other IDEs.

b. MS-Word

Microsoft Word is a commercial, non-free word processor created by Microsoft. It was first launched in 1983 for Xeinx systems under the name Multi-Tool Word. Later versions were built for a variety of platforms, including IBM PCs running DOS (1983), Apple Macintosh (1984), AT&T Unix PC (1985), Atari ST (1986), and Microsoft Windows (1987). (1989). It is part of the Microsoft Office system, but it is also available as a standalone application and as part of the Microsoft Works Suite. Microsoft Word 2010 for Windows and 2011 for Mac are the most recent versions. Microsoft Word is a processor that can create simple and complex writings. The application can be downloaded to your hard drive or used online. You may share and collaborate on your files with others in real time with the online version. The application supports Windows, macOS, cell phones, and tablets.

c. Draw. IO

Draw.io is a free online diagramming tool that lets you create charts and diagrams. You can either create a custom layout with the application or use the automated layout option. They have many shapes and hundreds of them. visual elements that can be used to create diagrams and charts. The drag-and-drop feature makes constructing a professional-looking diagram or chart a breeze. A piece of cake We can create flowcharts, UML diagrams, and entityrelationship diagrams for you. Mock-ups, schematics, network diagrams, and more the draw.io application saves data. Google Drive, OneDrive, and other options are available through the program. Others include Dropbox, GitHub, and GitLab.

2. Class Diagram

2.1 Class Diagram for Vehicle class

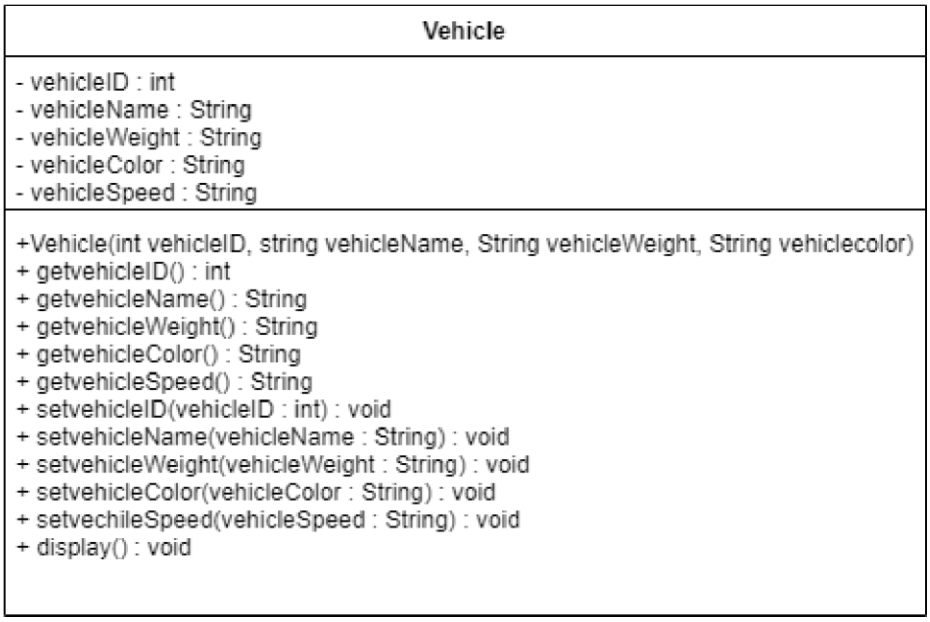

Figure 1: Class Diagram of Vehicle class

2.2 Class Diagram for Autorickshaw

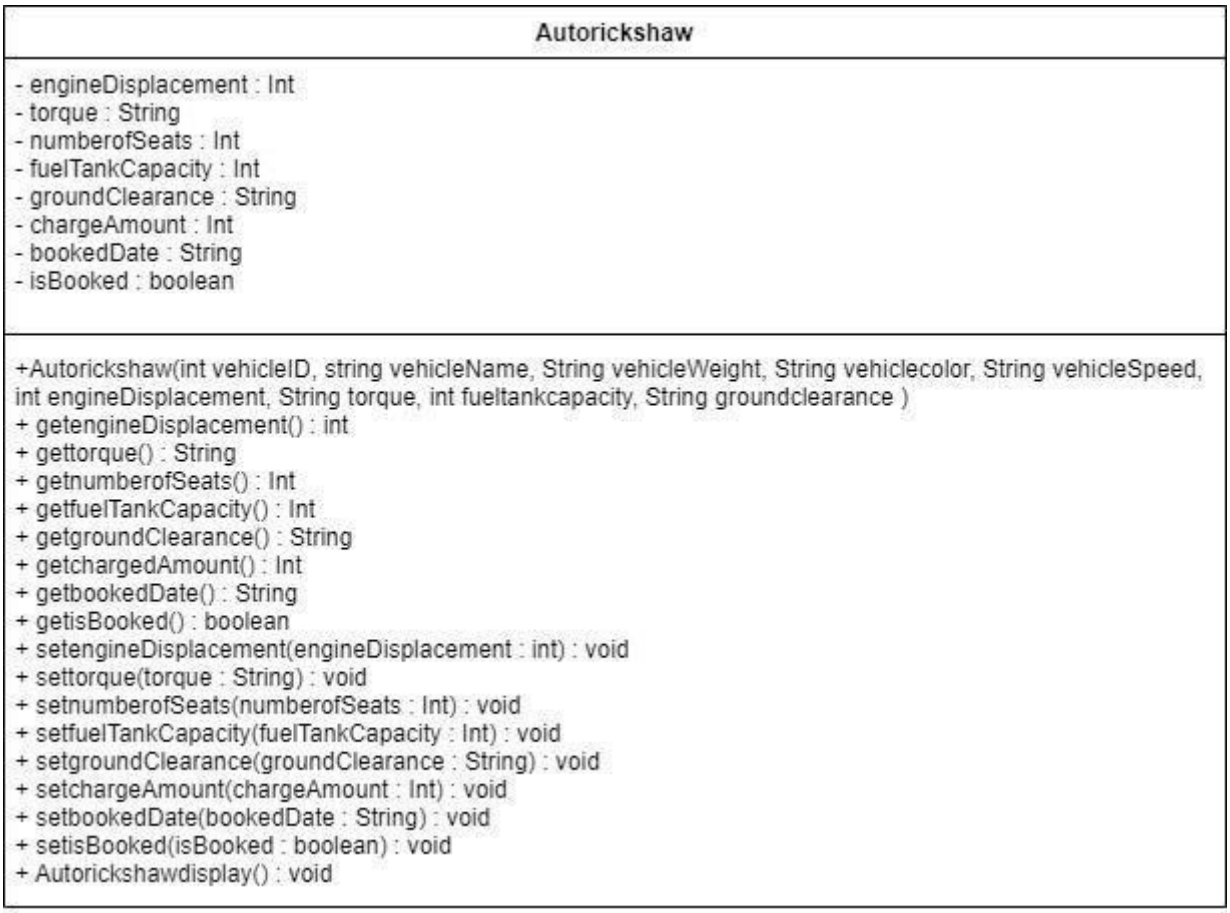

Figure 2: Class Diagram of Autorickshaw subclass

2.3 Class Diagram of electric Scooter

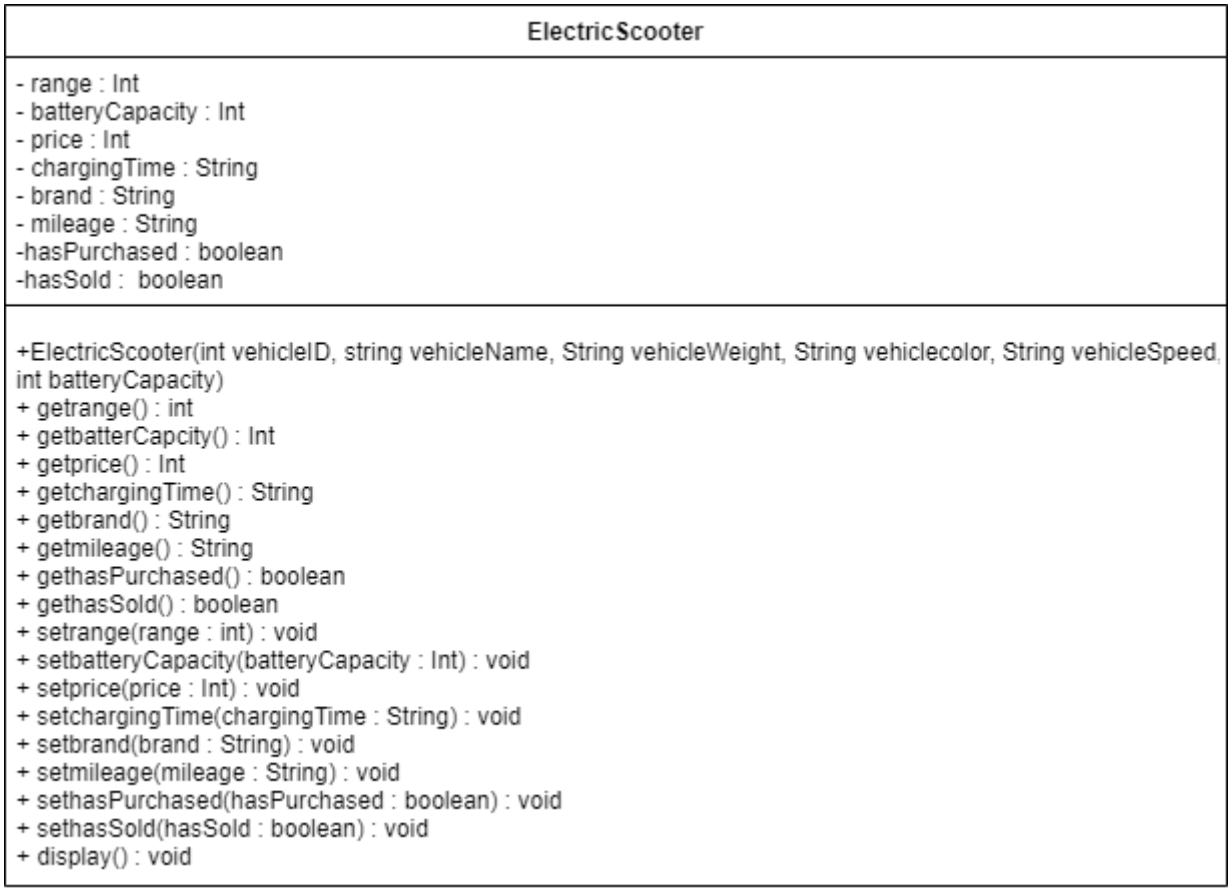

Figure 3: Class Diagram of Electric scooter

2.4 Combined Class Diagram showing relationship among them

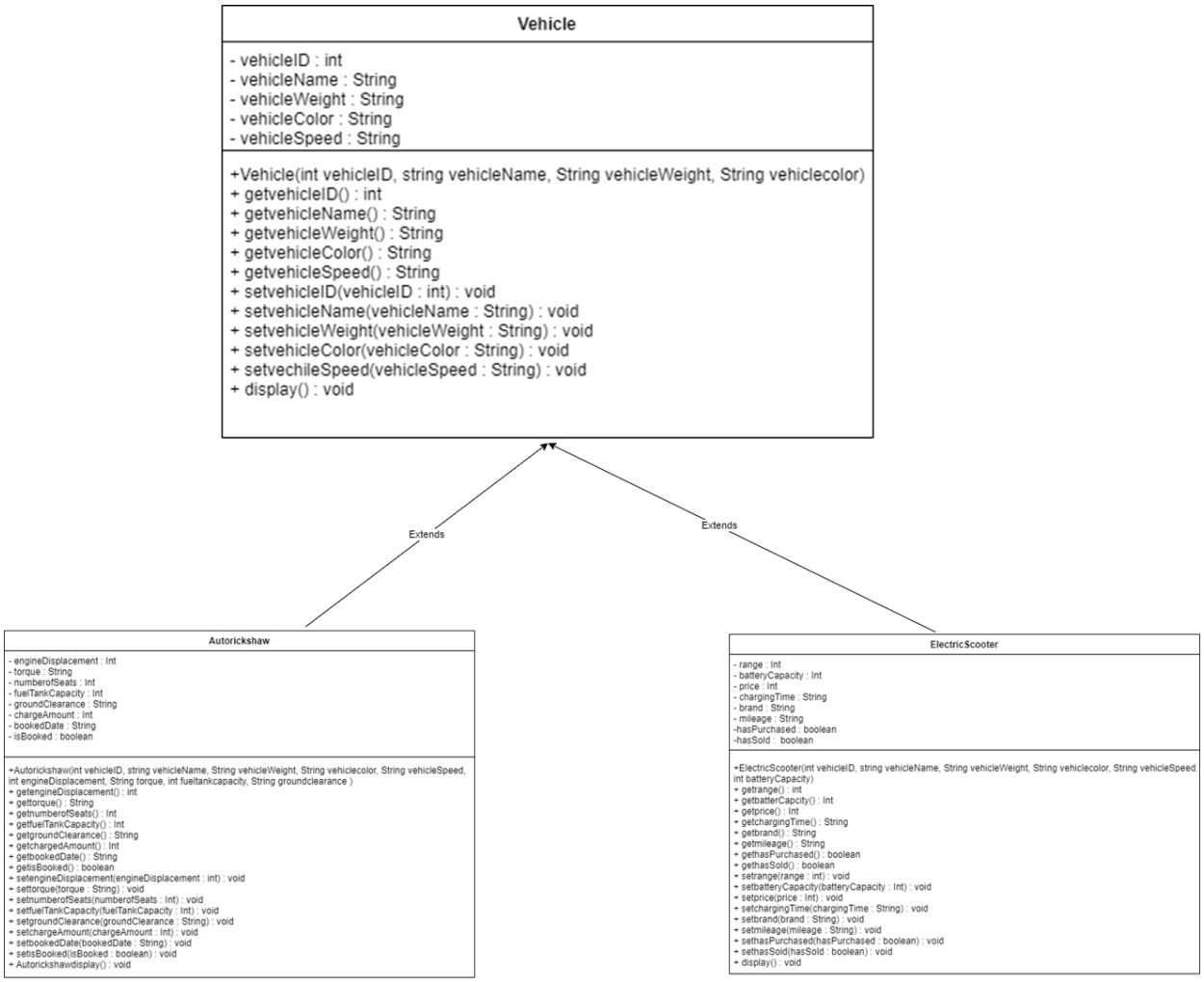

Figure 4: Combined Class Diagram showing the relationship among them

2.5 Class Diagram of TransportGUI

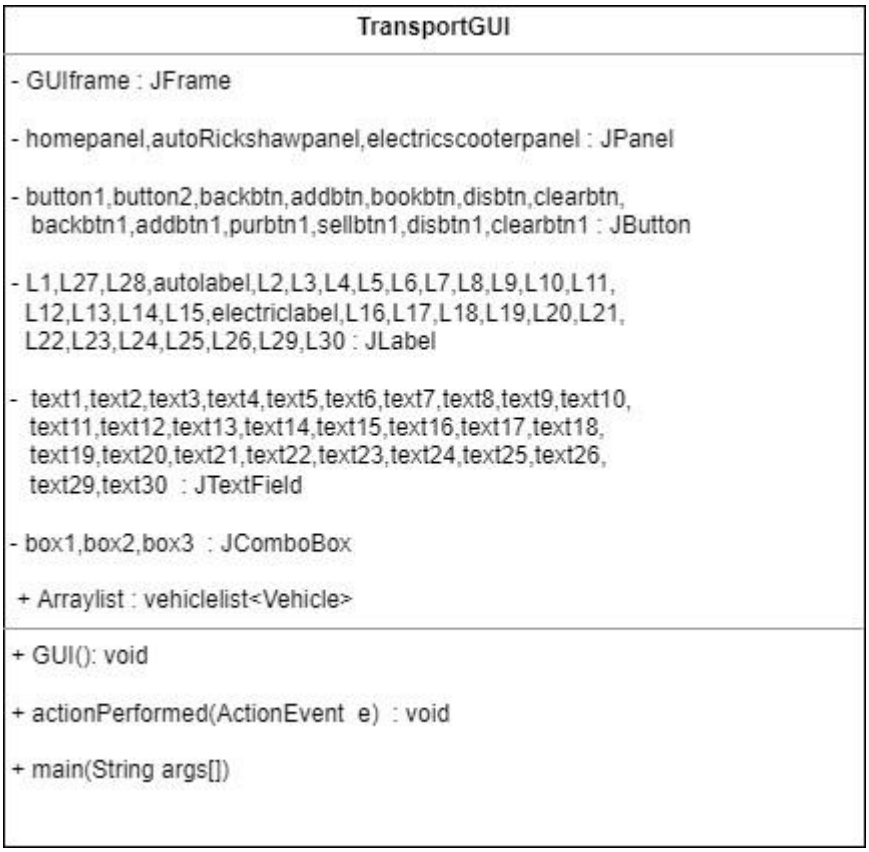

Figure 5: Class Diagram of TransportGUI class

2.6 Combined Class Diagram of all class including GUI class

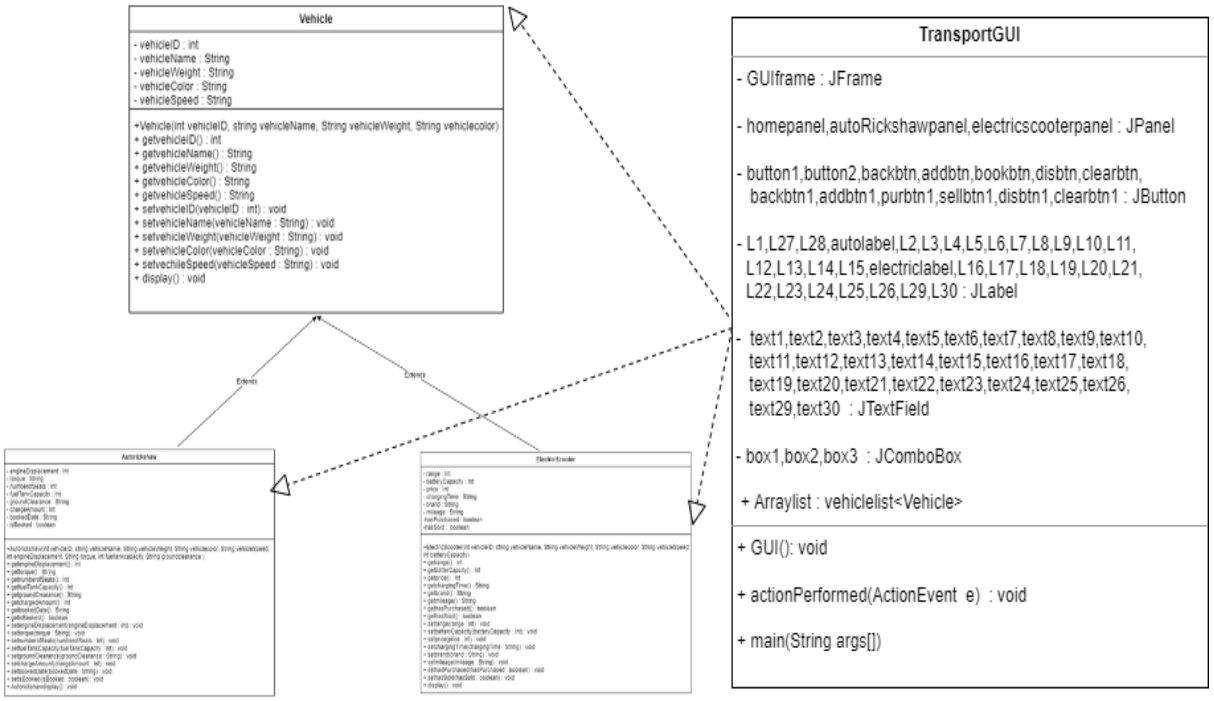

Figure 6: Combined Class Diagram of all class including GUI class

3 Pseudocode

3.1 Pseudocode of Transport GUI

START

CREATE a class TransportGUI which implements ActionListener interface
DO

DECLARE and **INITIALIZE** an ArrayList vehiclelist type of vehicle class

DECLARE an instance variable JFrame as GUIframe

DECLARE an instance variable JLable as homepanel, autorickshawpanel, electricscooterpanel

DECLARE an instance variable JButton as button1, button2, backbtn,addbtn, bookbtn, disbtn,clearbtn, backbtn1, addbtn1,purbtn1, sellbtn1, disbtn1,clearbtn1
DECLARE an instance variable JLabel as L1, autolabel, L2, L3, L4,L5, L6,L7, L8,L9,L10,L11,L12,L13,L14,L15,electriclabel,L16,L17,L18,L19,L20,L21,L22,L23,L24, L25,L26,L27, L28,L29,L30

DECLARE an instance variable JTextField as text1, text2, text3, text4, text5, text6, text7, text8, text9, text10, text11, text12, text13, text14, text15, text16, text17, text18, text19, text20,text21,text22,text23,text24,text25,text26,text29,text30

DECLARE an instance variable JComboBox as box1, box2, box3

CREATE a method GUI()
DO

INITIALIZE the instance variable JFrame to GUIframe
SET the width of GUIframe 870px, height of 700px

INITIALIZE the instance variable JPanel to homepanel

SET the color of homepanel to LIGHT_GRAY

SET the width of homepanel 870px, height of 700px

INITIALIZE the instance variable JLabel to L1 and **SET** the title of Jlabel L1 to TRANSPORT GUI

axis of L1 295px, Y-axis of 100px, width of 300px, height of 50px

INITIALIZE the font to f1 and **SET** the font of JLabel L1 as Times New Roman

SET the font of JLable L1 as f1

INITIALIZE the instance variable JLabel to L27 and **SET** the title of Jlabel L1 to Designed by :- Anju Kumari Yadav :)

SET the X-axis of L27 270px, Y-axis of 400px, width of 390px, height of 50px

INITIALIZE the font to f27 and **SET** the font of JLabel L27 as Times New

Roman

SET the font of JLable L27 as f27

INITIALIZE the instance variable JLabel to L28 and **SET** the title of Jlabel L28 to Version :- 6.6.6.6

SET the X-axis of L28 325px, Y-axis of 500px, width of 390px, height of 50px

INITIALIZE the font to f28 and **SET** the font of JLabel L28 as Times New

Roman

SET the font of JLable L28 as f28

INITIALIZE the instance variable JButton to button1 and **SET** the title of JButton button1 to AutoRickShaw

SET the X-axis of button1 325px, Y-axis of 200px, width of 200px, height of 40px

INITIALIZE the font to ff and **SET** the font of JButton button1 as Times New Roman

SET the font of JButton button1 as ff

INITIALIZE the instance variable JButton to button2 and **SET** the title of JButton button2 to ElectricScooter

SET the X-
SET the X-axis of button2 325px, Y-axis of 300px, width of 200px, height of 40px

INITIALIZE the font to fg and **SET** the font of JButton button2 as Times New Roman

SET the font of JButton button2 as fg

INITIALIZE the instance variable JPanel to autoRickshawpanel

SET the color of autoRickshawpanel to LIGHT_GRAY

SET the width of autoRickshawpanel 870px, height of 700px

INITIALIZE the instance variable JLabel to autolabel and **SET** the title of Jlabel autolabel to AutoRickShaw

SET the X-axis of autolabel 361px, Y-axis of 12px, width of 250px, height of 34px

INITIALIZE the font to auto and **SET** the font of JLabel autolabel as Times New Roman

SET the font of JLable autolabel as auto

INITIALIZE the instance variable JLabel to L2 and **SET** the title of Jlabel

L2 to Vehicle ID

SET the X-axis of L2 44px, Y-axis of 111px, width of 100px, height of 30px

INITIALIZE the font to f2 and **SET** the font of JLabel L2 as Times New Roman

SET the font of JLable L2 as f2

INITIALIZE the instance variable JLabel to L3 and **SET** the title of Jlabel

L3 to Vehicle Name

SET the X-axis of L3 478px, Y-axis of 111px, width of 125px, height of 25px

INITIALIZE the font to f3 and **SET** the font of JLabel L3 as Times New

Roman

SET the font of JLable L3 as f3

INITIALIZE the instance variable JLabel to L4 and **SET** the title of Jlabel L4 to Vehicle Weight:

axis of L4 44px, Y-axis of 162px, width of 150px, height of 25px

INITIALIZE the font to f4 and **SET** the font of JLabel L4 as Times New Roman

SET the font of JLable L4 as f4

INITIALIZE the instance variable JLabel to L5 and **SET** the title of Jlabel L5 to Vehicle Color:

SET the X-axis of L5 478px, Y-axis of 168px, width of 150px, height of 25px

INITIALIZE the font to f5 and **SET** the font of JLabel L5 as Times New Roman

SET the font of JLable L5 as f5

INITIALIZE the instance variable JLabel to L6 and **SET** the title of Jlabel L6 to Fuel Tank Capacity:

SET the X-axis of L6 44px, Y-axis of 213px, width of 150px, height of 25px

INITIALIZE the font to f6 and **SET** the font of JLabel L6 as Times New Roman

SET the font of JLable L6 as f6

INITIALIZE the instance variable JLabel to L7 and **SET** the title of Jlabel L7 to Vehicle Speed:

SET the X-axis of L7 478px, Y-axis of 213px, width of 108px, height of 25px

INITIALIZE the font to f7 and **SET** the font of JLabel L7 as Times New Roman

SET the X-
SET the font of JLable L7 as f7

INITIALIZE the instance variable JLabel to L8 and **SET** the title of Jlabel L8 to Vehicle Ground Clearance:

SET the X-axis of L8 44px, Y-axis of 264px, width of 146px, height of 25px

INITIALIZE the font to f8 and **SET** the font of JLabel L8 as Times New Roman

SET the font of JLable L8 as f8

INITIALIZE the instance variable JLabel to L9 and **SET** the title of Jlabel L9 to Torque:

SET the X-axis of L9 478px, Y-axis of 264px, width of 56px, height of 25px

INITIALIZE the font to f9 and **SET** the font of JLabel L9 as Times New Roman

SET the font of JLable L9 as f9

INITIALIZE the instance variable JLabel to L10 and **SET** the title of Jlabel L10 to Engine Displacement:

SET the X-axis of L10 44px, Y-axis of 315px, width of 160px, height of 25px

INITIALIZE the font to f10 and **SET** the font of JLabel L10 as Times New
Roman

SET the font of JLable L10as f10

INITIALIZE the instance variable JTextField to text2

SET the X-axis of text2 211px, Y-axis of 111px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text3

SET the X-axis of text3 598px, Y-axis of 111px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text4

SET the X-axis of text4 211px, Y-axis of 162px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text5

axis of text5 598px, Y-axis of 162px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text6

SET the X-axis of text6 211px, Y-axis of 213px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text7

SET the X-axis of text7 598px, Y-axis of 213px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text8

SET the X-axis of text8 211px, Y-axis of 264px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text9

SET the X-axis of text9 598px, Y-axis of 264px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text10

SET the X-axis of text10 211px, Y-axis of 315px, width of 150px, height of 25px

INITIALIZE the instance variable JLabel to L11 and **SET** the title of Jlabel L11 to Vehicle ID:

SET the X-
SET the X-axis of L11 44px, Y-axis of 440px, width of 83px, height of 25px

INITIALIZE the font to f11 and **SET** the font of JLabel L11 as Times New Roman

SET the font of JLable L11as f11

INITIALIZE the instance variable JLabel to L12 and **SET** the title of Jlabel L12 to No of Seats:

SET the X-axis of L12 44px, Y-axis of 490px, width of 87px, height of 25px

INITIALIZE the font to f12 and **SET** the font of JLabel L12 as Times New Roman

SET the font of JLable L12 as f12

INITIALIZE the instance variable JLabel to L13 and **SET** the title of Jlabel L13 to Charge Amount:

SET the X-axis of L13 44px, Y-axis of 240px, width of 121px, height of 25px

INITIALIZE the font to f13 and **SET** the font of JLabel L13 as Times New Roman

SET the font of JLable L13 as f13

INITIALIZE the instance variable JLabel to L14 and **SET** the title of Jlabel L14 to Booked Date:

SET the X-axis of L14 44px, Y-axis of 590px, width of 105px, height of 25px

INITIALIZE the font to f14 and **SET** the font of JLabel L14 as Times New Roman

SET the font of JLable L14 as f14

INITIALIZEmonth{"January","February","March","April","May","June","August","September","October","November","December"} in String

INTIALIZEdays{"01","02","03","04","05","06","07","08","09","10","11","12","13","14","15","16","17","15","19","20","21","22","23","24","25","26","27","28","29","30","31"}in String

INITIALIZEyear{"1995","1996","1997","1998","1999","2000","2001","2002","2003","2004","2005","2006","2007","2008","2009","2010","2011","2

012","2013","2014","2015","2016","2017","2015","2019","2020","2021","2022"} in Sting

INITIALIZE the instance variable JComboBox to box1 and **SET** the title of JCombox box1 to year
SET the X-axis of box1 172px, Y-axis of 594px, width of 75px, height of 32px

INITIALIZE the instance variable JComboBox to box2 and **SET** the title of JComboBox box2 to month:
SET the X-axis of box2 260px, Y-axis of 594px, width of 130px, height of 32px

INITIALIZE the instance variable JComboBox to box3 and **SET** the title of JComboBox box3 to day:
SET the X-axis of box3 400px, Y-axis of 594px, width of 50px, height of 32px

INITIALIZE the instance variable JTextField to text11
SET the X-axis of text11 172px, Y-axis of 444px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text12
SET the X-axis of text12 172px, Y-axis of 494px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text13
SET the X-axis of text13 172px, Y-axis of 544px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text14

SET the X-axis of text14 172px, Y-axis of 594px, width of 150px, height of 25px

INITIALIZE the instance variable JButton to backbtn and **SET** the title of JButton backbtn to Back

SET the X-axis of backbtn 44px, Y-axis of 53px, width of 100px, height of 32px

INITIALIZE the font to fb and **SET** the font of JButton backbtn as Times New Roman

SET the font of JButton backbtn as fb

INITIALIZE the instance variable JButton to addbtn and **SET** the title of JButton addbtn tp Add to AutoRickShaw

SET the X-axis of backbtn 361px, Y-axis of 380px, width of 200px, height of 35px

INITIALIZE the font to fa and **SET** the font of JButton addbtn as Times New Roman

SET the font of JButton addbtn as fa

INITIALIZE the instance variable JButton to bookbtn and **SET** the title of

JButton bookbtn to Book

SET the X-axis of bookbtn 44px, Y-axis of 665px, width of 120px, height of 32px

INITIALIZE the font to fB and **SET** the font of JButton bookbtn as Times

New Roman

SET the font of JButton bookbnt as fB

INITIALIZE the instance variable JButton to clearbtn and **SET** the title of

INITIALIZE
JButton clearbtn to Clear

SET the X-axis of clearbtn 628px, Y-axis of 665px, width of 120px, height of 32px

the font to fc and **SET** the font of JButton clearbtn as Times New Roman

SET the font of JButton clearbtn as fc

INITIALIZE the instance variable JButton to disbtn and **SET** the title of JButton disbtn to Display

SET the X-axis of disbtn 361px, Y-axis of 665px, width of 120px, height of 32px

INITIALIZE the font to fd and **SET** the font of JButton disbtn as Times New Roman

SET the font of JButton disbtn as fd

INITIALIZE the instance variable JPanel to electricscooterpanel

SET the color of electricscooterpanel to LIGHT_GRAY

SET the width electricscooterpanel 870px, height of 700px

INITIALIZE the instance variable JLabel to electriclabel and **SET** the title of Jlabel electriclabel to ElectricScooter

SET the X-axis of autolabel 361px, Y-axis of 20px, width of 250px, height of 36px

INITIALIZE the font to electric and **SET** the font of JLabel electriclabel as Times New Roman

SET the font of electriclabel as electric

INITIALIZE the instance variable JLabel to L15 and **SET** the title of Jlabel L15 to Vehicle ID

SET the X-axis of L15 44px, Y-axis of 111px, width of 83px, height of 25px

INITIALIZE the font to f15 and **SET** the font of JLabel L15 as Times New

Roman

SET the font of JLable L15 as f15

INITIALIZE the instance variable JLabel to L16 and **SET** the title of Jlabel L16 to Vehicle Weight:

SET the X-axis of L16 44px, Y-axis of 162px, width of 115px, height of 25px

INITIALIZE the font to f16 and **SET** the font of JLabel L16 as Times New

Roman

SET the font of JLable L16 as f16

INITIALIZE the instance variable JLabel to L17 and **SET** the title of Jlabel L17 to Battery Capacity:

SET the X-axis of L17 44px, Y-axis of 213px, width of 142px, height of 25px

INITIALIZE the font to f17 and **SET** the font of JLabel L17 as Times New

Roman

SET the font of JLable L17 as f17

INITIALIZE the instance variable JLabel to L18 and **SET** the title of Jlabel L18 to Vehicle Name:

SET the X-axis of L18 478px, Y-axis of 111px, width of 105px, height of 25px

INITIALIZE the font to f18 and **SET** the font of JLabel L18 as Times New

Roman

SET the font of JLable L18 as f18

INITIALIZE the instance variable JLabel to L19 and **SET** the title of Jlabel L19 to Vehicle Color:

INITIALIZE
SET the X-axis of L19 478px, Y-axis of 162px, width of 105px, height of 25px

INITIALIZE the font to f19 and **SET** the font of JLabel L19 as Times New Roman

SET the font of JLable L19 as f19

the instance variable JLabel to L20 and **SET** the title of Jlabel L20 to Vehicle Speed:

SET the X-axis of L20 478px, Y-axis of 213px, width of 108px, height of 25px

INITIALIZE the font to f20 and **SET** the font of JLabel L20 as Times New Roman

SET the font of JLable L20 as f20

INITIALIZE the instance variable JTextField to text15

SET the X-axis of text15 156px, Y-axis of 111px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text16

SET the X-axis of text16 156px, Y-axis of 162px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text17

SET the X-axis of text17 156px, Y-axis of 213px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text18

SET the X-axis of text18 172px, Y-axis of 594px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text19

SET the X-axis of text19 598px, Y-axis of 162px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text20

SET the X-axis of text20 598px, Y-axis of 213px, width of 150px, height of 25px

INITIALIZE the instance variable JLabel to L21 and **SET** the title of Jlabel L21 to Vehicle ID:

SET the X-axis of L21 44px, Y-axis of 337px, width of 83px, height of 25px

INITIALIZE the font to f21 and **SET** the font of JLabel L21 as Times New Roman

SET the font of JLable L21 as f21

INITIALIZE the instance variable JLabel to L22 and **SET** the title of Jlabel L22 to Price:

SET the X-axis of L22 44px, Y-axis of 387px, width of 42px, height of 25px

INITIALIZE the font to f22 and **SET** the font of JLabel L22 as Times New Roman

SET the font of JLable L22 as f22

INITIALIZE the instance variable JLabel to L23 and **SET** the title of Jlabel L23 to Rang:

SET the X-axis of L23 44px, Y-axis of 437px, width of 51px, height of 25px

INITIALIZE the font to f23 and **SET** the font of JLabel L23 as Times New Roman

INITIALIZE
INITIALIZE the instance variable JLabel to L24 and **SET** the title of Jlabel L24 to Brand:

SET the X-axis of L24 478px, Y-axis of 337px, width of 50px, height of 25px

INITIALIZE the font to f24 and **SET** the font of JLabel L24 as Times New Roman

SET the font of JLable L24 as f24

the instance variable JLabel to L25 and **SET** the title of Jlabel L25 to Charging Time:

SET the X-axis of L25 478px, Y-axis of 387px, width of 114px, height of 25px

INITIALIZE the font to f25 and **SET** the font of JLabel L25 as Times New Roman

SET the font of JLable L25 as f25

INITIALIZE the instance variable JLabel to L26 and **SET** the title of Jlabel L26 to Mileage:

SET the X-axis of L26 478px, Y-axis of 437px, width of 64px, height of 25px

INITIALIZE the font to f26 and **SET** the font of JLabel L26 as Times New Roman

SET the font of JLable L26 as f26

INITIALIZE the instance variable JTextField to text21

SET the X-axis of text21 145px, Y-axis of 337px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text22

SET the X-axis of text22 145px, Y-axis of 387px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text23

SET the X-axis of text23 145px, Y-axis of 437px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text24

SET the X-axis of text24 606px, Y-axis of 337px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text25

SET the X-axis of text25 606px, Y-axis of 387px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text26

SET the X-axis of text26 606px, Y-axis of 437px, width of 150px, height of 25px

INITIALIZE the instance variable JLabel to L29 and **SET** the title of Jlabel L29 to Vehicle ID:

SET the X-axis of L29 44px, Y-axis of 580px, width of 64px, height of 25px

INITIALIZE the font to f29 and **SET** the font of JLabel L29 as Times New Roman

SET the font of JLable L29 as f29

INITIALIZE the instance variable JLabel to L30 and **SET** the title of Jlabel L30 to Price:

SET the X-axis of L30 525px, Y-axis of 586px, width of 64px, height of 25px

INITIALIZE the font to f26 and **SET** the font of JLabel L26 as Times New

INITIALIZE
Roman

SET the font of JLable L26 as f26

INITIALIZE the instance variable JTextField to text29

SET the X-axis of text29 145px, Y-axis of 580px, width of 150px, height of 25px

INITIALIZE the instance variable JTextField to text30

SET the X-axis of text30 614px, Y-axis of 586px, width of 150px, height of 25px

INITIALIZE the instance variable JButton to backbtn1 and **SET** the title of JButton backbtn1to Back

SET the X-axis of backbtn1 44px, Y-axis of 53px, width of 120px, height of 30px

INITIALIZE the font to fb1 and **SET** the font of JButton backbtn1 as Times New Roman

SET the font of JButton backbtn1 as fb1

INITIALIZE the instance variable JButton to addbtn1 and **SET** the title of JButton addbtn1 toAdd to ElectricScooter

SET the X-axis of backbtn1 351px, Y-axis of 270px, width of 200px, height of 35px

INITIALIZE the font to fa1 and **SET** the font of JButton addbtn1 as Times

New Roman

SET the font of JButton addbtn1 as fa1

INITIALIZE the instance variable JButton to purbtn1 and **SET** the title of JButton purbtn1 to Purchase to ElectricScooter

SET the X-axis of purbtn1 351px, Y-axis of 500px, width of 220px, height of 32px

INITIALIZE the font to fp1 and **SET** the font of JButton purbtn1 as Times

New Roman

SET the font of JButton purbtn1 as fp1

INITIALIZE the instance variable JButton to sellbtn1 and **SET** the title of JButton sellbtn1 to Sell

SET the X-axis of sellbtn1 38px, Y-axis of 650px, width of 120px, height of 32px

INITIALIZE the font to fs1 and **SET** the font of JButton sellbtn1 as Times

New Roman

SET the font of JButton sellbtn1 as fs1

INITIALIZE the instance variable JButton to clearbtn1 and **SET** the title of JButton clearbtn1 to Clear

SET the X-axis of clearbtn1 640px, Y-axis of 650px, width of 120px, height of 32px

INITIALIZE the font to fc1 and **SET** the font of JButton clearbtn1 as Times New Roman

SET the font of JButton clearbtn1 as fc1

INITIALIZE the instance variable JButton to disbtn1 and **SET** the title of JButton disbtn1 to Display

SET the X-axis of disbtn1 360px, Y-axis of 650px, width of 120px, height of 32px

INITIALIZE the font to fd1 and **SET** the font of JButton disbtn1 as Times

New Roman

SET the font of JButton disbtn1 as fd1

ADD the JPanel homepanel to GUIframe

ADD the JPanel to autoRickshawpanel GUIframe

ADD the JPanel electricscooterpanel to GUIframe

ADD the JLabel L1 to homepanel

ADD the JButton button1 to homepanel

ADD the JButton button2 to homepanel

ADD the JLable autolable to autoRickshawpanel

ADD the JLable L2 to autoRickshawpanel

ADD the JLable L3 to autoRickshawpanel

ADD the JLable L4 to autoRickshawpanel

ADD the JLable L5 to autoRickshawpanel

ADD

ADD

ADD the JLable L6 to autoRickshawpanel

ADD the JLable L7 to autoRickshawpanel

ADD the JLable L8 to autoRickshawpanel the
JLable L9 to autoRickshawpanel the
JLable L10 to autoRickshawpanel

ADD the JLable L11 to autoRickshawpanel

ADD the JLable L12 to autoRickshawpanel

ADD the JLable L13 to autoRickshawpanel

ADD the JLable L14 to autoRickshawpanel

ADD the JTextField text2 to autoRickshawpanel

ADD the JTextField text3 to autoRickshawpanel

ADD the JTextField text4 to autoRickshawpanel

ADD the JTextField text5 to autoRickshawpanel

ADD the JTextField text6 to autoRickshawpanel

ADD the JTextField text7 to autoRickshawpanel

ADD the JTextField text8 to autoRickshawpanel

ADD the JTextField text9 to autoRickshawpanel

ADD the JTextField text10 to autoRickshawpanel

ADD the JTextField text11 to autoRickshawpanel

ADD the JTextField text12 to autoRickshawpanel

ADD the JTextField text13 to autoRickshawpanel

ADD the JComboBox box1 to autoRickshawpanel

ADD the JComboBox box2 to autoRickshawpanel

ADD the JComboBox box3 to autoRickshawpanel

ADD the JButton backbtn to autoRickshawpanel

ADD the JButton addbtn to autoRickshawpanel

ADD the JButton bookbtn to autoRickshawpanel

ADD

ADD

ADD the JButton clearbtn to autoRickshawpanel

ADD the JButton disbth to autoRickshawpanel

the JLabel electriclabel to electricscooterpanel the JLabel L15 to electricscooterpanel

ADD the JLabel L16 to electricscooterpanel

ADD the JLabel L17 to electricscooterpanel

ADD the JLabel L18 to electricscooterpanel

ADD the JLabel L19 to electricscooterpanel

ADD the JLabel L20 to electricscooterpanel

ADD the JLabel L21 to electricscooterpanel

ADD the JLabel L22 to electricscooterpanel

ADD the JLabel L23 to electricscooterpanel

ADD the JLabel L24 to electricscooterpanel

ADD the JLabel L25 to electricscooterpanel

ADD the JLabel L26 to electricscooterpanel

ADD the JLabel L29 to electricscooterpanel

ADD the JLabel L30 to electricscooterpanel

ADD the JTextField text15 to electricscooterpanel

ADD the JTextField text16 to electricscooterpanel

ADD the JTextField text17 to electricscooterpanel

ADD the JTextField text18 to electricscooterpanel

ADD the JTextField text19 to electricscooterpanel

ADD the JTextField text20 to electricscooterpanel

ADD the JTextField text21 to electricscooterpanel

ADD the JTextField text22 to electricscooterpanel

ADD the JTextField text23 to electricscooterpanel

ADD the JTextField text24 to electricscooterpanel

ADD

ADD

ADD the JTextField text25 to electricscooterpanel
ADD the JTextField text26 to electricscooterpanel
ADD the JTextField text29 to electricscooterpanel
ADD the JTextField text30 to electricscooterpanel

the JButton backbtn1 to electricscooterpanel
the JButton addbtn1 to electricscooterpanel

ADD
ADD

ADD the JButton purbtn1 to electricscooterpanel
ADD the JButton sellbtn1 to electricscooterpanel
ADD the JButton clearbtn1 to electricscooterpanel
ADD the JButton disbth1 to electricscooterpanel

ADD ActionListener(this) to button1
ADD ActionListener(this) to button2

ADD ActionListener(this) to backbtn
ADD ActionListener(this) to addbtn
ADD ActionListener(this) to bookbtn
ADD ActionListener(this) to disbtn
ADD ActionListener(this) to clearbtn

ADD ActionListener(this) to backbtn1
ADD ActionListener(this) to addbtn1
ADD ActionListener(this) to purbtn1
ADD ActionListener(this) to sellbtn1
ADD ActionListener(this) to disbtn1
ADD ActionListener(this) to clearbtn1

SET the layout of homepanel to null
SET the Visible of homepanel to true
SET the layout of auotRickshawpanel to null
SET the Visible of auotRickshawpanel to false
SET the layout of electricscooterpanel to null
SET the Visible of electricscooterpanel to false

SET the layout of GUIframe to null
SET the Visible of GUIframe to true
SET the LocationRelativeTo of GUIframe to null
SET the DefaultCloseOperation of GUIframe to EXIT_ON_CLOSE
SET the Resizableof GUIframe to false

ENDDO

CREATE a method actionPerformed (ActionEvent e)
DO

If(e.getSource == backbtn)
DO
SET the Visible of electricscooterpanel to false
SET the Visible of autoRickshawpanel to false
SET the Visible of homepanel to true
ENDDO **ENDIF**

If(e.getSource == button1)
DO
SET the Visible of electricscooterpanel to false
SET the Visible of autoRickshawpanel to true
SET the Visible of homepanel to false
ENDDO **ENDIF**

ELSEIF(e.getSource == button2)
DO
SET the Visible of electricscooterpanel to true
SET the Visible of autoRickshawpanel to false
SET the Visible of homepanel to false
ENDDO **ENDELSEIF**

If(e.getSource == backbtn1)

DO

SET the Visible of electricscooterpanel to false

SET the Visible of autoRickshawpanel to false

SET the Visible of homepanel to true

ENDDO **ENDIF**

IF(e.getSource() == addbtn)

DO **Try** **DO**

int vehicleid=Integer.parseInt(text2.getText())

String vehiclename=(text3.getText())

String vehicleweight=(text4.getText())

String vehiclecolor=(text5.getText())

int fueltankcapacity=Integer.parseInt(text6.getText())

String vehiclespeed=(text7.getText())

String groundclearance=(text8.getText())

String torque=(text9.getText())

intenginedisplacement=Integer.parseInt(text10.getText())

CREATE an object obj of AutoRickShaw class and pass parameter vehicleid, vehiclename, vehicleweight, vehiclecolor, vehiclespeed, enginedisplacement, torque, fueltankcapacity, and groundclearance

ADD the object obj of AutoRickShaw class to vehiclelist **DISPLAY** MessageDialog as “Added Successfuuly :)” in autoRickshawpanel

ENDDO

Catch(NumberFormatException error)

DO

DISPLAY MessageDialog as “Plz check the form fill up format! ” in autoRickshawpanel

ENDDO

ENDDO

ENDIF

IF(e.getSource == addbtn1)

DO Try DO

int vehicleid =Integer.parseInt(text15.getText())
String vehicleweight = (text16.getText())
int batterycapacity =Integer.parseInt(text17.getText())
String vehiclename = (text18.getText())
String vehiclecolor = (text19.getText())
String vehiclespeed = (text20.getText())

CREATE an object obj1 of ElectricScooter class and pass parameter vehicleid, vehiclename, vehicleweight, vehiclespeed, vehiclecolor, and batterycapacity

ADD an object obj1 of of ElectricScooterclass to vehiclelist

DISPLAY the MessageDialog “Added successfully :)” to elctricscooterpanel as information message

ENDDO Catch DO

DISPLAY the MessageDialog “Please fill up the form properly” to elctricscooterpanel as waring message

ENDDO ENDDO

ENDIF

IF(e.getSource() == bookbtn)

DO **Try** **DO**

String year =box1.getSelectedItem().toString()
String month = box2.getSelectedItem().toString()
String day = box3.getSelectedItem().toString()
String bookeddate = year+month+day int vehicleid =
Integer.parseInt(text11.getText()) int noofseats =
Integer.parseInt(text12.getText()) int chargeamount
= Integer.parseInt(text13.getText())

FOR(Vehicle obj2 : vehiclelist)

DO

IF(obj2 instanceof AutoRickShaw Class)

DO

Downcasting AutoRickShaw auto_obj to AutoRickShaw obj2

IF(auto_obj.getID() is equal to vehicleid)
DO

DISPLAY a MessageDialog “The vehicle is booked having ID"+" "+vehicleid+"\n"+"No of Seats:"+" "+noofseats+"\n"+"Charge Amount:"+" "+chargeamount+"\n"+"Booked date:"+" "+bookeddate” to autoRickshawpanel as information message

IF(auto_obj.getisBooked is equal to true)
DO

DISPLAY a MessageDialog “ The Autorickshaw having vehicleID is already booked.” To autoRickshawpanel as information message

ENDDO

ENDIF

ELSE IF(auto_obj.getisBooked is equal to false)

DO

auto_obj.Book(bookeddate, chargeamount, noofseats)

DISPLAY a MessageDialog “The AutoRickShaw having vehicleID is" +vehicleid+ "is booked” to autoRickshawpanel as information message

ENDDO

ENDDO

ENDIF

ELSE

DO

DISPLAY a MessageDialog “The vehicleID you entered dosen't match.” To autoRickshawpanel as information message

ENDDO

ENDELSE

ENDO

ENDIF

ENDO

ENDDO

CATCH(NumberFormatException error)

DO

DISPLAY a MessageDialog “Please enter the correct value. ” to autoRickshawpanel as warning message

ENDDO

ENDDO

ENDIF

IF(e.getSource() == purbtn1)

DO

Try

DO

int vehicleid = Integer.parseInt(text21.getText())

int price = Integer.parseInt(text22.getText())

int range = Integer.parseInt(text23.getText())

String brand = text24.getText()

String chargingtime = text25.getText()

String mileage = text26.getText()

FOR(vehicle obj3 : vehiclelist)

DO

IF(obj3 instanceof ElectricScooter)

DO

Downcasting ElectricScooter electric_obj to (ElectricScooter) obj3

IF(electric_obj.getID() is equal to vehicleid)

DO

DISPLAY a Message “The vehicleID is valid with range"+range+",brand"+brand+",price"+price+",charging time"+chargingtime+",mileage"+mileage” to electricscooterpanel as information message

IF(electric_obj.gethaspurchased() == false)

DO

electric_obj.Purchase(brand, range, price, chargingtime, mileage)

DISPLAY a message “The Electricscooter having"+vehicleid+"is purchased.” to electricscooterpanel as information message

ENDO

ENDIF

ELSE

DO

DISPLAY a message “The Electricscooter having"+vehicleid+"is already been purchased.” to electricscooterpanel as information message

ENDDO

ENDELSE

ENDO

ENDIF

ENDO

ENDIF

ENDDO

Catch(NumberFormatException errror)

DO

DISPLAY a message “Please enter the correct value.” to electricscooterpanel as warning message

ENDO ENDDO

ENDIF

IF(e.getSource() == sellbtn1)

DO Try

DO int vehicleid = Integer.parseInt(text29.getText()); int price = Integer.parseInt(text30.getText();

FOR(Vehicle obj4 : vehiclelist)

DO

IF(obj4 instanceof ElectricScooter)

DO

Downcasting ElectricScooter electric_obj1 to (ElectricScooter) obj4;

IF(electric_obj1.getID() is equal to vehicleid)

DO

DISPLAY a MessageDialog “The vehicleID is Sold with ID"+vehicleid+" price"+price)” to electricscooterpanel as information message

IF(electric_obj1.gethasSold() == true)

DO

DISPLAY a MessageDialog “The Electricscooter is already Sold”to electricscooterpanel as information message

ENDO **ENDIF**

ELSE DO

electric_obj1.sell(price);

DISPLAY a MessageDialog “The Electricscooter is Sold successfully” to electricscooterpanel as information message

ENDO **ENDELSE** **END ENDIF** **ELSE DO**

DISPLAY a MessageDialog “The vehicleID you entered dosen't match.” to electricscooterpanel as information message

ENDDO **ENDELSE**

ENDDO **ENDIF** **ENDDO**

ENDDO catch(NumberFormatException error)

DO

DISPLAY a message “Please enter the crroect value.” To electricscooterpanel as warning message

ENDDO

ENDDO ENDDIF

IF(e.getSource() == clearbtn)

DO

SET an empty text field to text2
SET an empty text field to text3

SET an empty text field to text4

SET an empty text field to text5

SET an empty text field to text6

SET an empty text field to text7

SET an empty text field to text8

SET an empty text field to text9

SET an empty text field to text10

SET an empty text field to text11

SET an empty text field to text12

SET an empty text field to text13

SET an empty text field to text14

ENDDO

ENDIF

IF(e.getSource() == clearbtn1)

DO

SET an empty text field to text15

SET an empty text field to text16

SET an empty text field to text17

SET an empty text field to text18

SET an empty text field to text19

SET an empty text field to text20

SET an empty text field to text21

SET an empty text field to text22

SET an empty text field to text23

SET an empty text field to text24 **SET** an empty text field to text25

SET an empty text field to text26

SET an empty text field to text29

SET an empty text field to text30

ENDDO

ENDIF

IF(e.getSource()==disbtn)
DO
FOR(Vehicle displayauto: vehiclelist)
DO
IF(displayauto instanceof AutoRickShaw)
DO
AutoRickShaw obj1 = (AutoRickShaw) displayauto
obj1.display()
ENDO **ENDIF**

ENNDO

ENDDO **ENDIF**

IF(e.getSource()==disbtn1)

DO

FOR(Vehicle displayauto: vehiclelist)

DO

IF(displayauto instanceof ElectricScooter)

DO

ElectricScooter obj1 = (ElectricScooter) displayauto;

obj1.display();

ENDDO **ENDIF**

ENDDO

ENDDO **ENDIF**

CREATE a main method of GUI class

DO

new TrnasportGUI().GUI()

ENDDO

ENDDO

4 Method Description

4.1 Void GUI()

It is an instance method that contains all the GUI components which are used for the creation of GUI of both AutoRickShaw class and ElectricScooter class. The methods contain one JFrame, two JPanels, thirteen JButtons, thirty-two JLabels, twenty-eight JTextFields and three JComboBox. In this method, the GUI layout is designed with the help of Jcomponents. The frame and panels are set with their appropriate size and position. The labels are set with text fields, combo boxes, and also buttons are placed. All the designing and creation of the frame is done in this GUI() method. The Components are set with size and position. The panels are set with visibility and null layout managers.

4.2 actionPerform(ActionEvent e)

It is a method that is present in the ActionListener interface. This method accepts action events as a parameter. Since the class implements the ActionListener interface, we need to provide the method body of the method in the TransportGUI. This method is all about the functionality of buttons which are added for AutoRickShaw and ElectricScooter, book electricscooter,purchase and sell electriscooter, display and clear the data from the both Autorickshaw and electricscooter. When the buttons are pressed it performs certain actions according to the scenario. The following buttons perform the following functions:

i. Add an Autorickshaw

When this button is pushed, a new object of type AutoRickshaw is created and added to an array list of Vehicle class, using the input values of the

vehicle id, vehicle name, vehicle weight, vehicle color, vehicle speed, engine displacement, torque, fuel tank capacity, and ground clearance.

ii. Book an Autorickshaw

The GUI is filled out with the Vehicle ID, booked date, charge amount, and seat count. The information dialog appears once the booked date, charge amount, and number of seats are entered into the text box along with the valid Vehicle ID. When the book button is pressed, the vehicle ID input value is checked against the already-entered vehicle ID, and if it matches, it is utilized to reserve the right autorickshaw from the list. This is how you reserve an autorickshaw from the autorickshaw class.

iii. Add an ElectricScooter

When this button is pushed, a new object of the type ElectricScooter is created and added to an array list of Vehicle class objects using the input values for the vehicle id, vehicle name, vehicle weight, vehicle color, vehicle speed, and battery capacity.

iv. Purchase an ElectricScooter

The GUI is filled out with the Vehicle ID, brand, price, charging time, mileage, and range. The information dialog for the relevant brand, price, charging time, mileage, and range appears when a valid Vehicle ID is typed into the text box. If a valid Vehicle ID has been supplied, it is used to select the right ElectricScooter from the list when the purchase button is selected and the input value of Vehicle ID is compared to the existing Vehicle ID. Here, the ElectricScooter class's method for purchasing an electric scooter is called.

v. Sell an ElectricScooter

Input of the Vehicle ID into the GUI. Display the information dialog after the valid Vehicle ID and the appropriate price have been typed in the text box. If a valid Vehicle ID has been entered, it is utilized to sell the relevant electric scooter from the array list of Vehicles when the sale button is pushed.

Otherwise, the input value of the Vehicle ID is compared to the existing Vehicle ID. This calls the ElectricScooter class's function for selling electric scooters.

vi. Display

This button performs a certain function when the display button is pressed or clicked. The input values of the text fields are added to Add for Autorickshaw or Electricscooter , and then book Autorickshaw, purchase and sell electricscooter which are stored to the array list of the Vehicle type. The display function works the same for both the AutoRickShaw and ElectricScooter Class. When the display button is pressed or clicked, all the information relating to the particular class is displayed in the terminal.

vii. Clear

When the clear button is pressed all the data from text field cleared for both Autorickshaw and Electricscooter.

viii. Back

When back button is pressed the Autorickshawpanel or electricscooterpanel go back to homepanel.

5 Testing

5.1 Testing 1

Test that the program can be compiled and run using the command prompt.

Test	1
Objective	Test that the program can be compiled and run using the command prompt.
Action	✦ Locate the program in This PC and then open the command prompt. ✦ Enter the command - javac Vehicle.java - javac AutoRickShaw.java - javac ElectricScooter.java - javac TransprotGUI.java - java TransportGUI
Expected result	The program can be compiled and run while using command prompt and GUI should appear.
Actual result	The program can be compiled and run while using command prompt and GUI should appear.
Conclusion	The test was successful.

Table 1: Test of a program compiled and run using command prompt

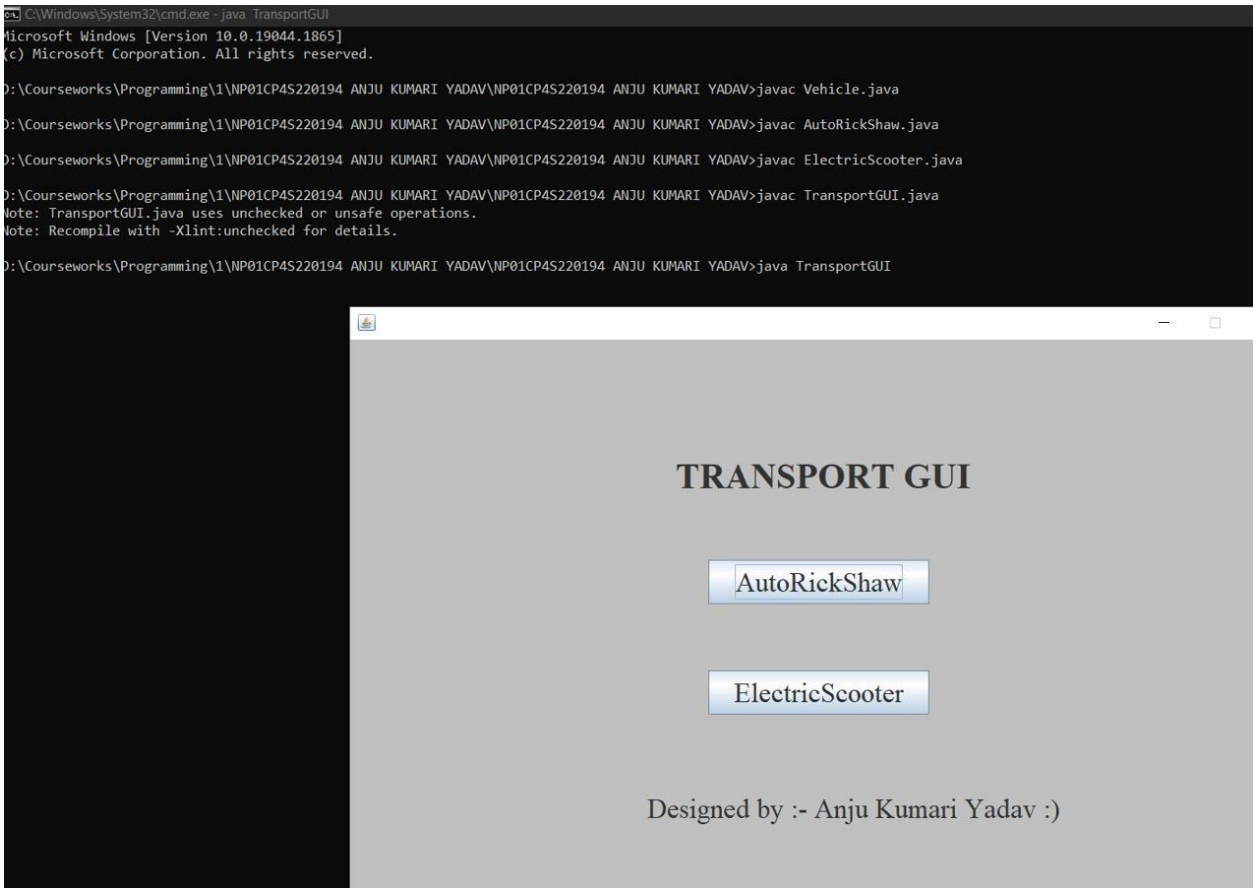

Figure 7: Screenshot of the program running in command prompt

5.2. Testing 2

i. Add the Autorickshaw

Test	2(i)
Objective	To test add the Autorickshaw in the program.
Action	The following values are filled in text filed for add to autorickshaw Int vehicleid = 1 String vehiclename = “Bugatii” String vehicleweight= “1995 kg” Stringvehiclecolor = “Classic Blue” String vehiclespeed =“421 km/hr” Int fueltankcapacity =100 String groundclearance = “125 mm” String torque = “1600 Nm” Int engindisplacement = 7993 Add to Autorickshaw button is clicked.
Expected result	When Add to Autorickshaw button will be clicked, the input values in the respective components will be added Successfully.
Actual result	Add to Autorickshaw was added successfully.
Conclusion	The test was Successful.

Table 2: Add button check in AutorickShaw

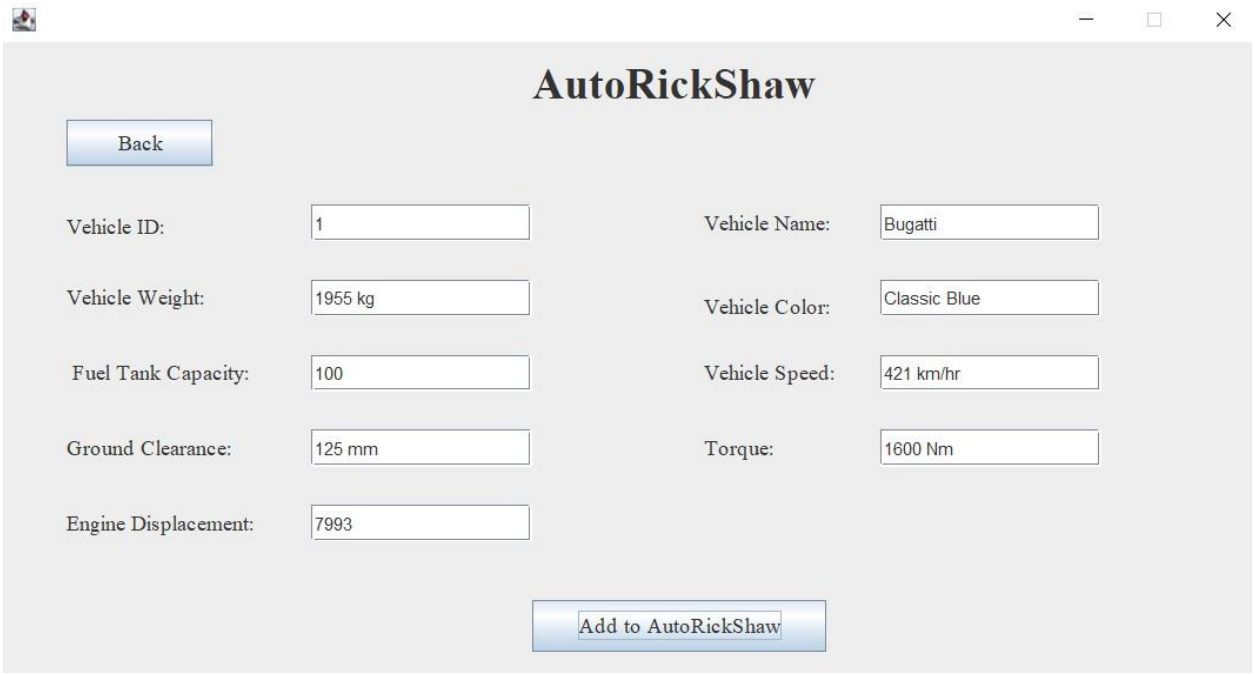

Figure 8: Screenshot while entering values to Add to AutoRickShaw

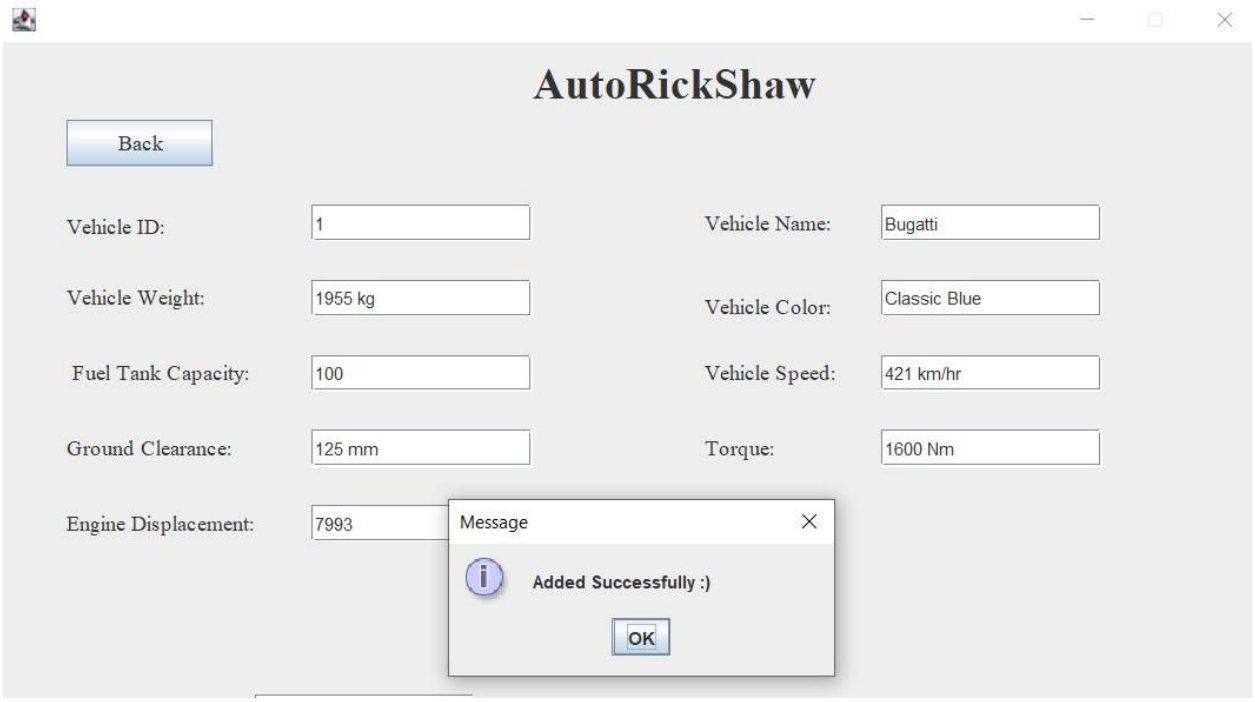

Figure 9: Screenshot of displaying an appropriate message for Add to AutorickShaw

ii. Book the Autorickshaw

Test	2(ii)
Objective	To test book the Autorickshaw in the program.
Action	The following values are filled in text filed for book to autorickshaw Int vehicleid = 1 Int noofseats = 2 Int chargeamount = 1000 String bookeddate = “2020 August 10” Book button is clicked.
Expected result	When book for Autorickshaw button will be clicked, the input values in the respective components will be booked Successfully.
Actual result	The Autorickshaw was booked successfully.
Conclusion	The test was Successful.

Table 3 : Book button check in AutorickShaw

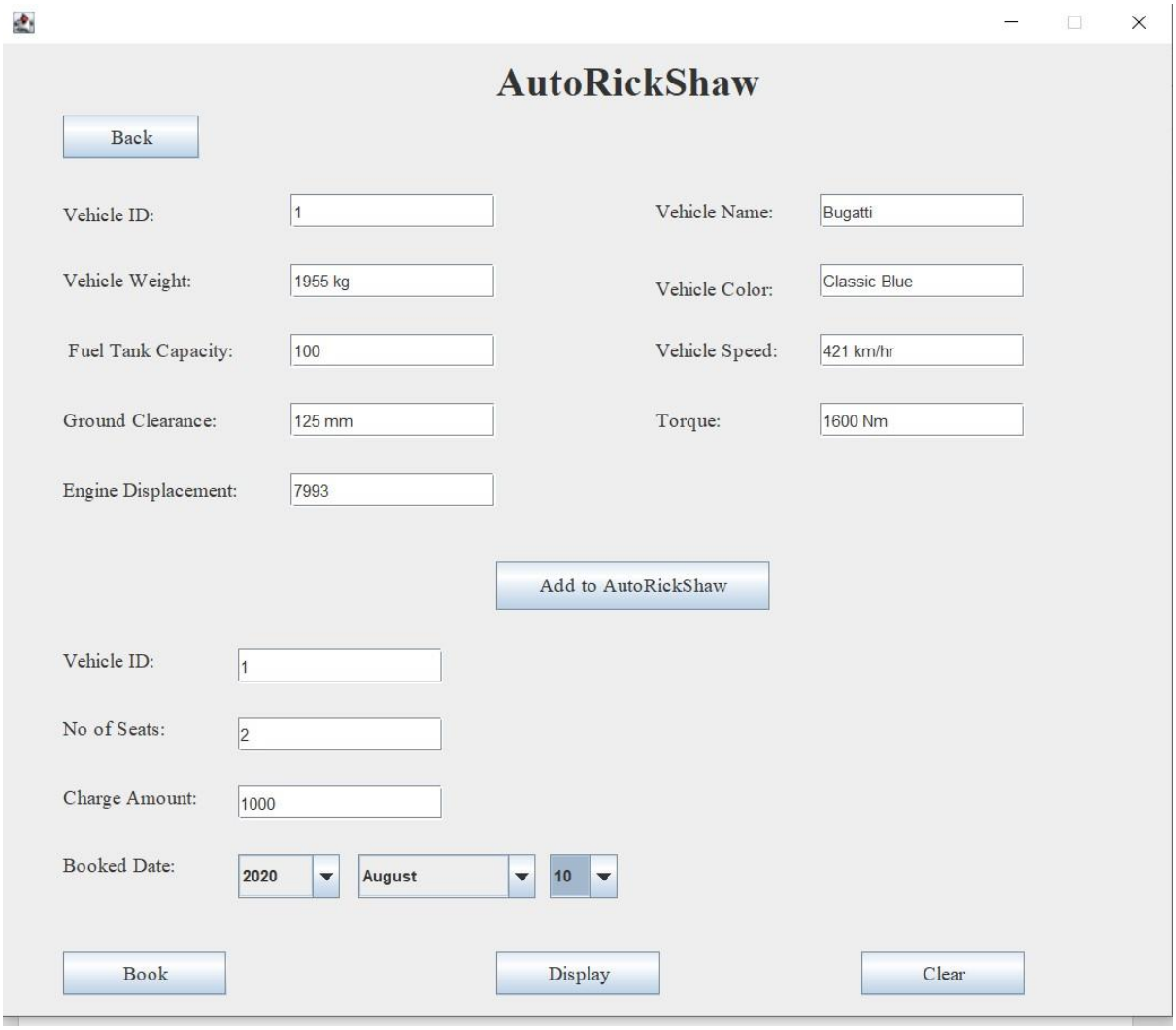

Figure 10: Screenshot while entering values to Book AutoRickShaw

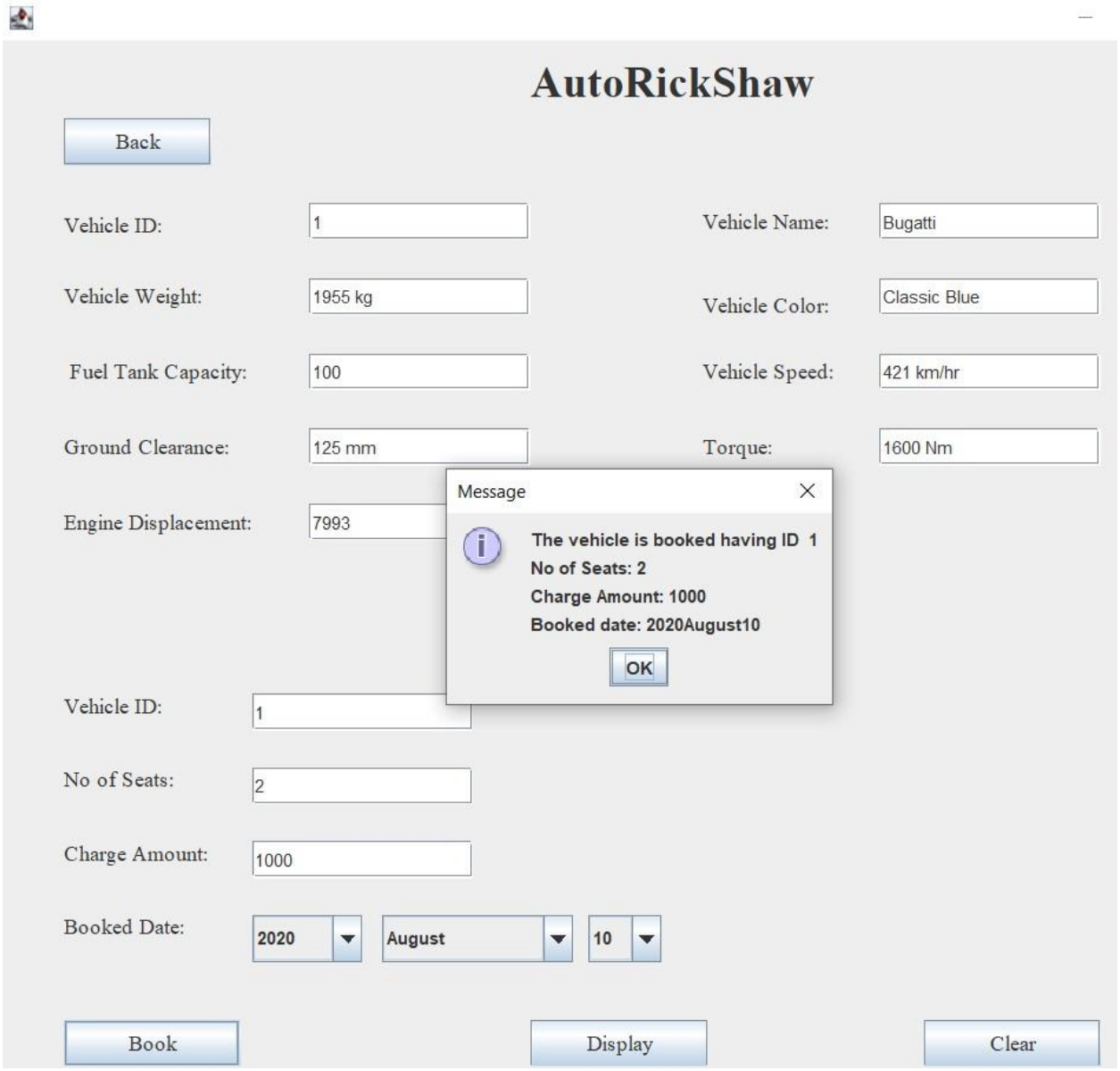

Figure 11: Screenshot of displaying an appropriate message for Book AutorickShaw

iii. Add the Electricscooter

Test	2(iii)
Objective	To test add the ElectricScooter in the program.
Action	The following values are filled in text filed for add to ElectricScooter Int vehicleid = 1 String vehicleweight = “1611 kg” String vehiclename = “Tesla” String vehiclecolor = “Black” String vehiclespeed = “233 km/hr” Int batterycapacity = 255 Add to Electricscooter button is clicked.
Expected result	When Add to Electricscooter button will be clicked, the input values in the respective components will be added Successfully.
Actual result	Electricscooter was added successfully.
Conclusion	The test was Successful.

Table 4: Add button check in ElectricScooter

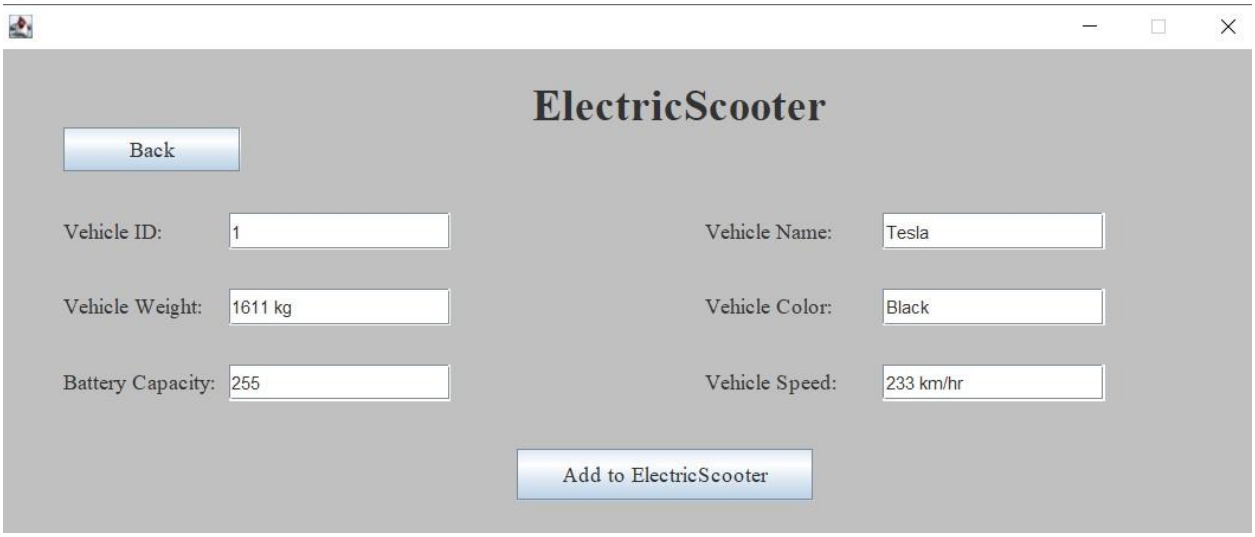

Figure 12: Screenshot while entering values to Add to ElectricScooter

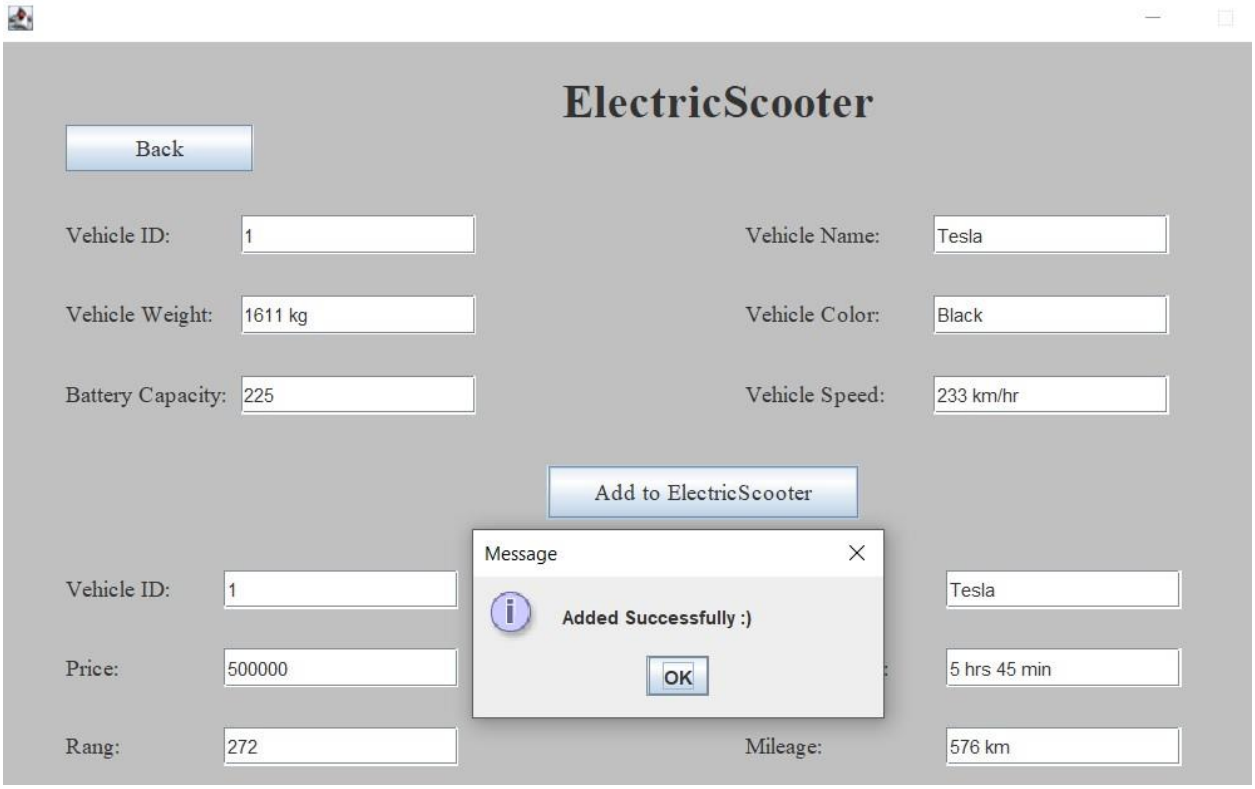

Figure 13: Screenshot of displaying an appropriate message for Add to ElectricScooter

iv. Purchase the Electricscooter

Test	2(iv)
Objective	To test Purchase the Electricscooter in the program.

Action	The following values are filled in text filed for purchase for Electricscooter. Int price = 500000 Int vehicleid= 1 Int range = 272 String brand = “Tesla” String chargingtime = “5 hrs 45 min” String mileage = “576 km” Purchase button is clicked.
Expected result	When Purchase the Electricscooter button will be clicked, the input values in the respective components will be purchased Successfully.
Actual result	Electricscooter was purchased successfully.
Conclusion	The test was Successful.

Table 5: Purchase button check in ElectricScooter

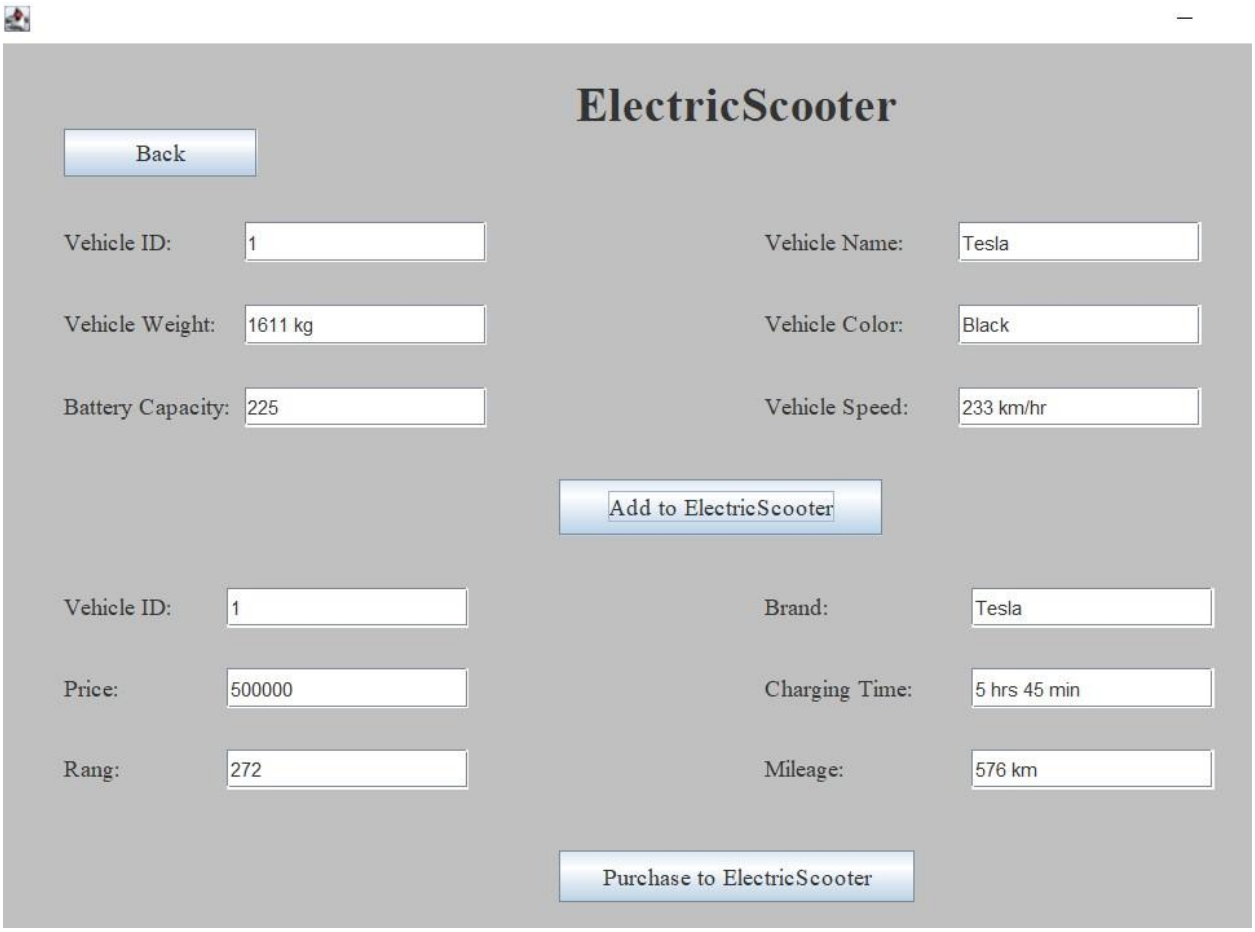

Figure 14: Screenshot while entering values to Purchase to ElectricScooter

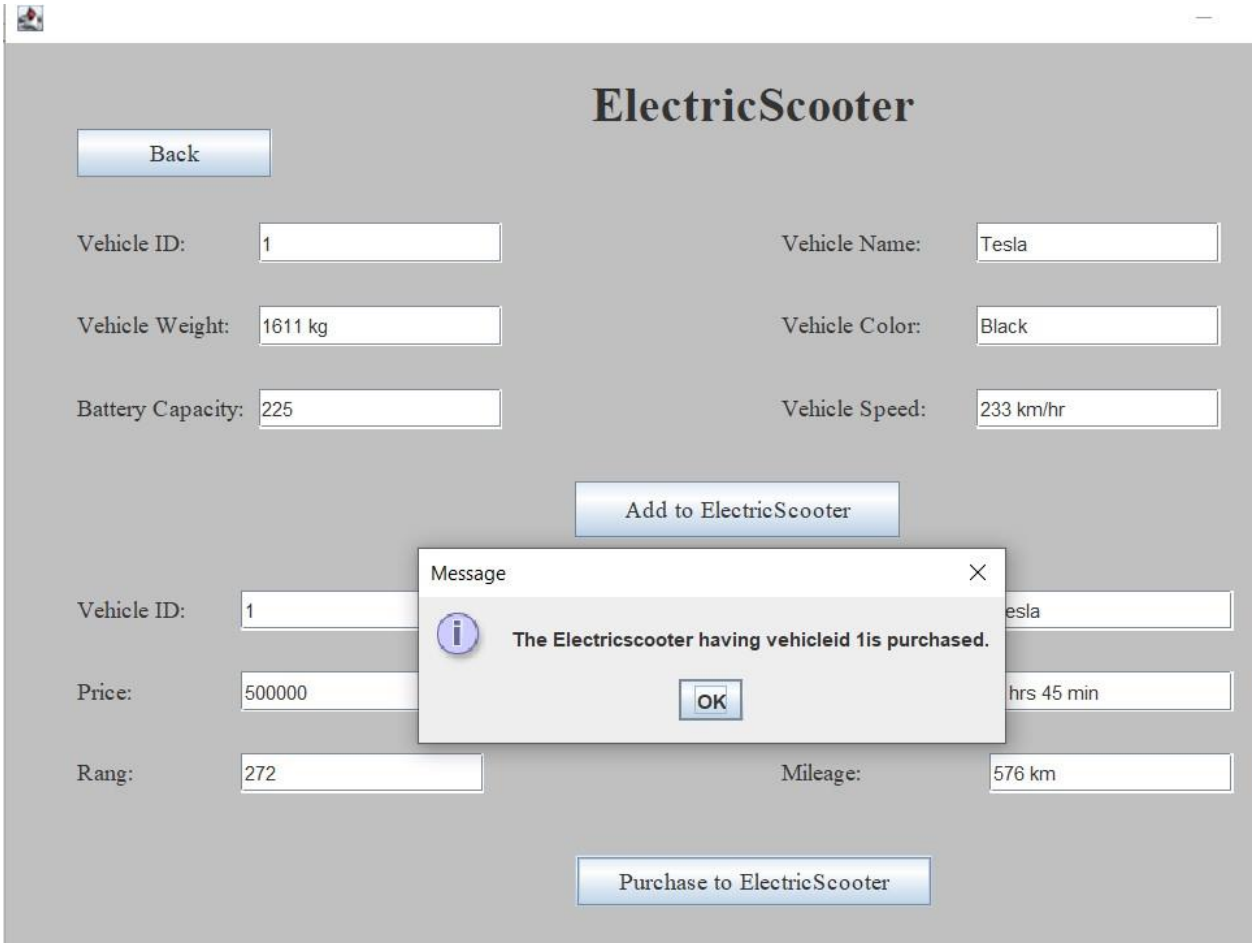

Figure 15: Screenshot of displaying an appropriate message for Purchase to ElectricScooter

v. Sell the Electricscooter

Test	2(v)
Objective	To test sell the Electricscooter in the program.
Action	The following values are filled in text filed for sell for electricScooter Int vehicleid =1 Int price = 600000

	Sell button is clicked.
Expected result	When sell for electricscooter button will be clicked, the input values in the respective components will be sold Successfully.
Actual result	Electricscooter was sold successfully.
Conclusion	The test was Successful.

Table 6: Sell button check in ElectricScooter

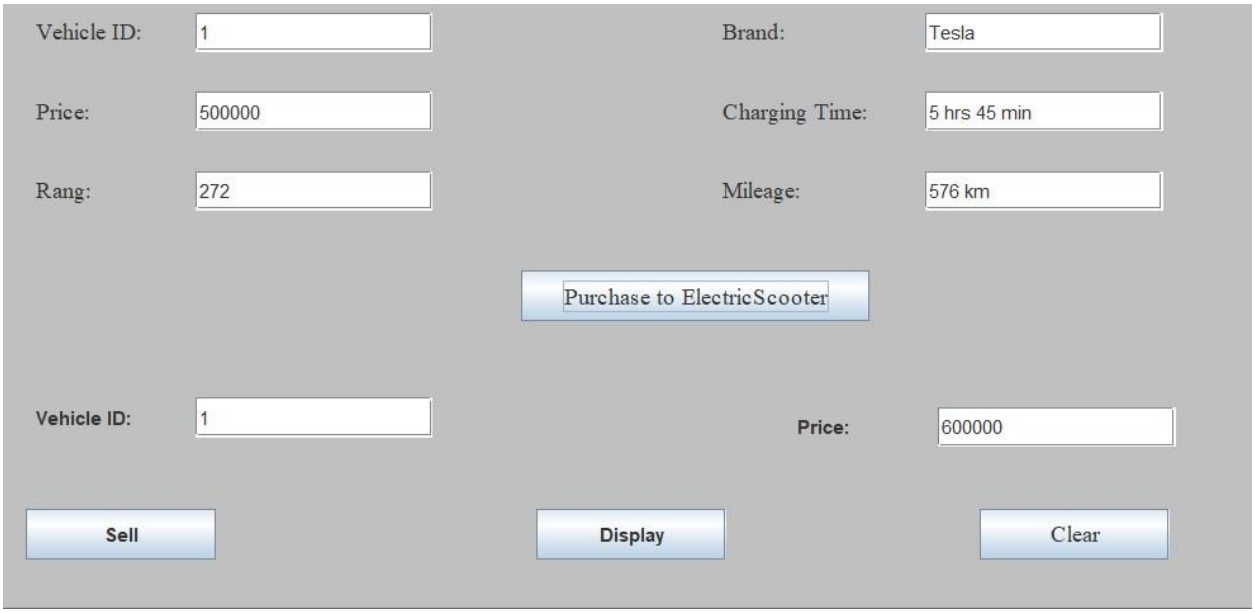

Figure 16: Screenshot while entering values to Sell the ElectricScooter

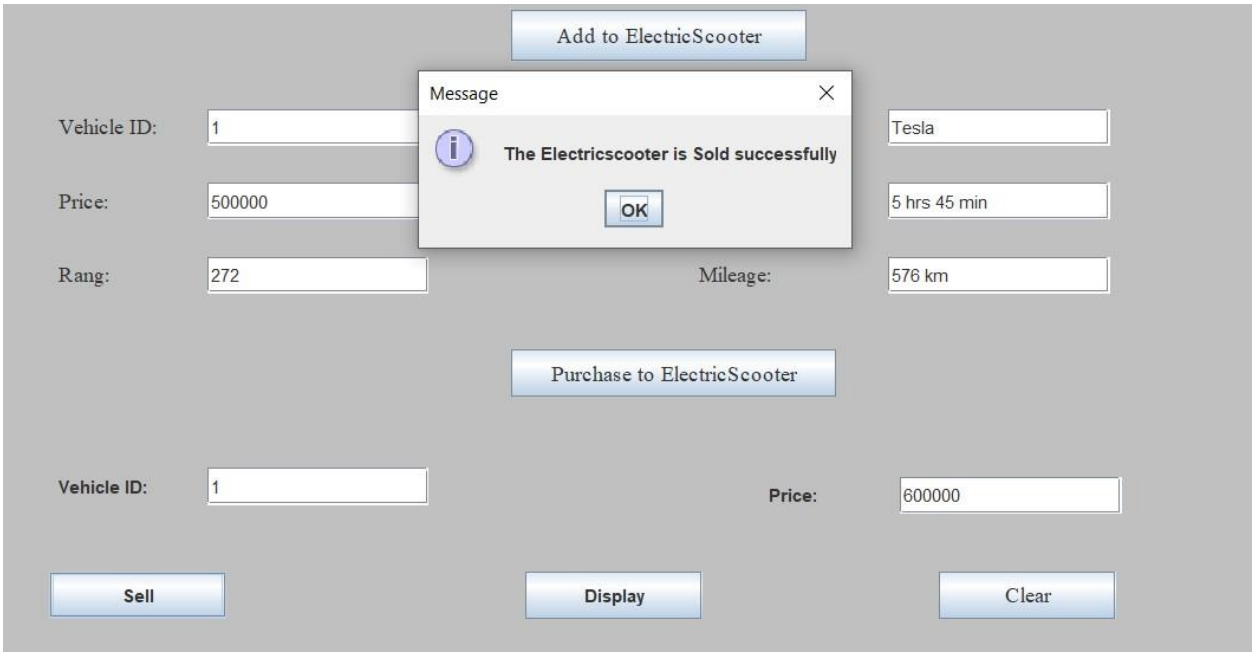

Figure 17: Screenshot of displaying an appropriate message for Sell the ElectricScooter

5.3 Testing 3

i. Try to add invalid vehicleID to purchase ElectricScooter

Test	3(i)
Objective	Test appropriate dialog box should appear when try to add invalid vehicleid
Action	The following values are filled in text filed for purchase for Electricscooter. Int price = 500000 Int vehicleid= 1 Int range = 272 String brand = “Tesla” String chargingtime = “5 hrs 45 min” String mileage = “576 km” Purchase button is clicked.

Expected result	A message Should display that vehicleid didn't match when purchase button is clicked.
Actual result	A message display that vehicle id didn't match.
Conclusion	The test was successful.

Table 7: Checking appropriate dialog box

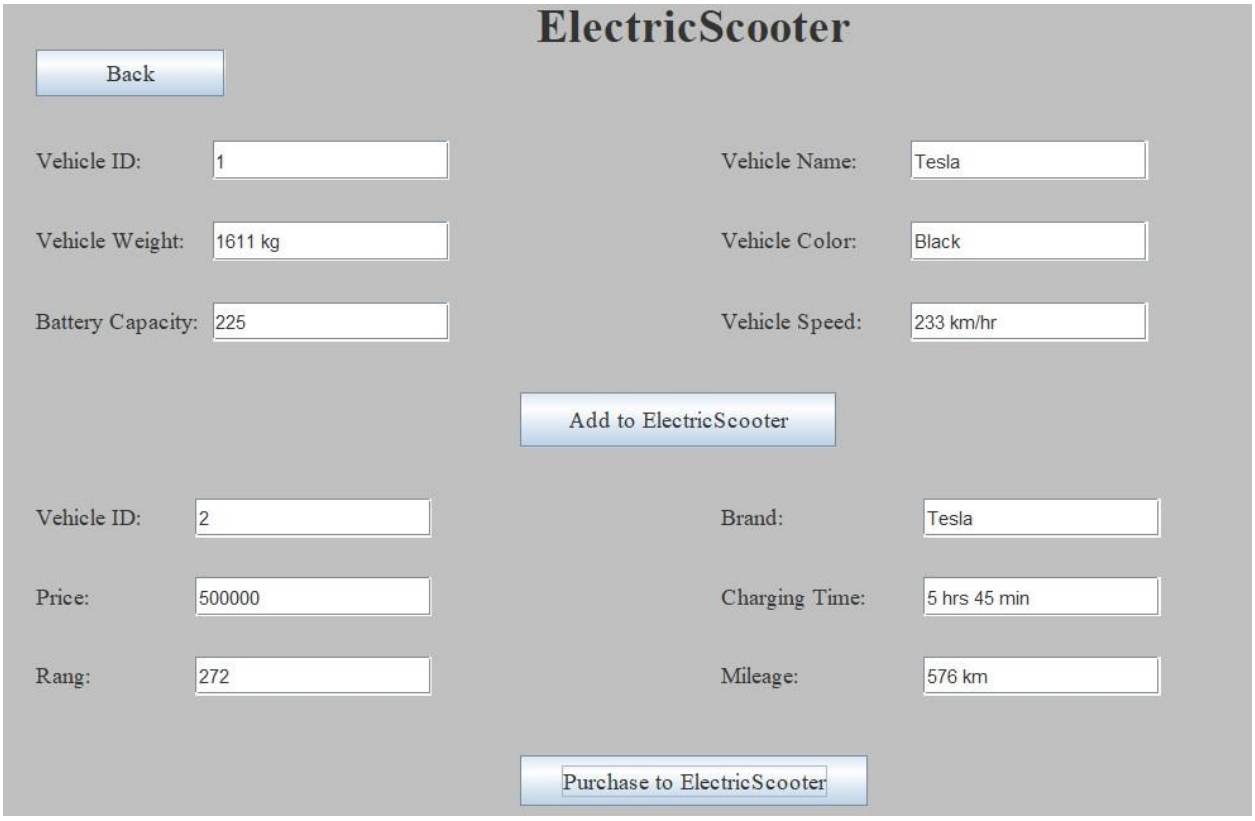

Figure 18: Screenshot of entering Invalid VehicleID to purchase ElectricScooter

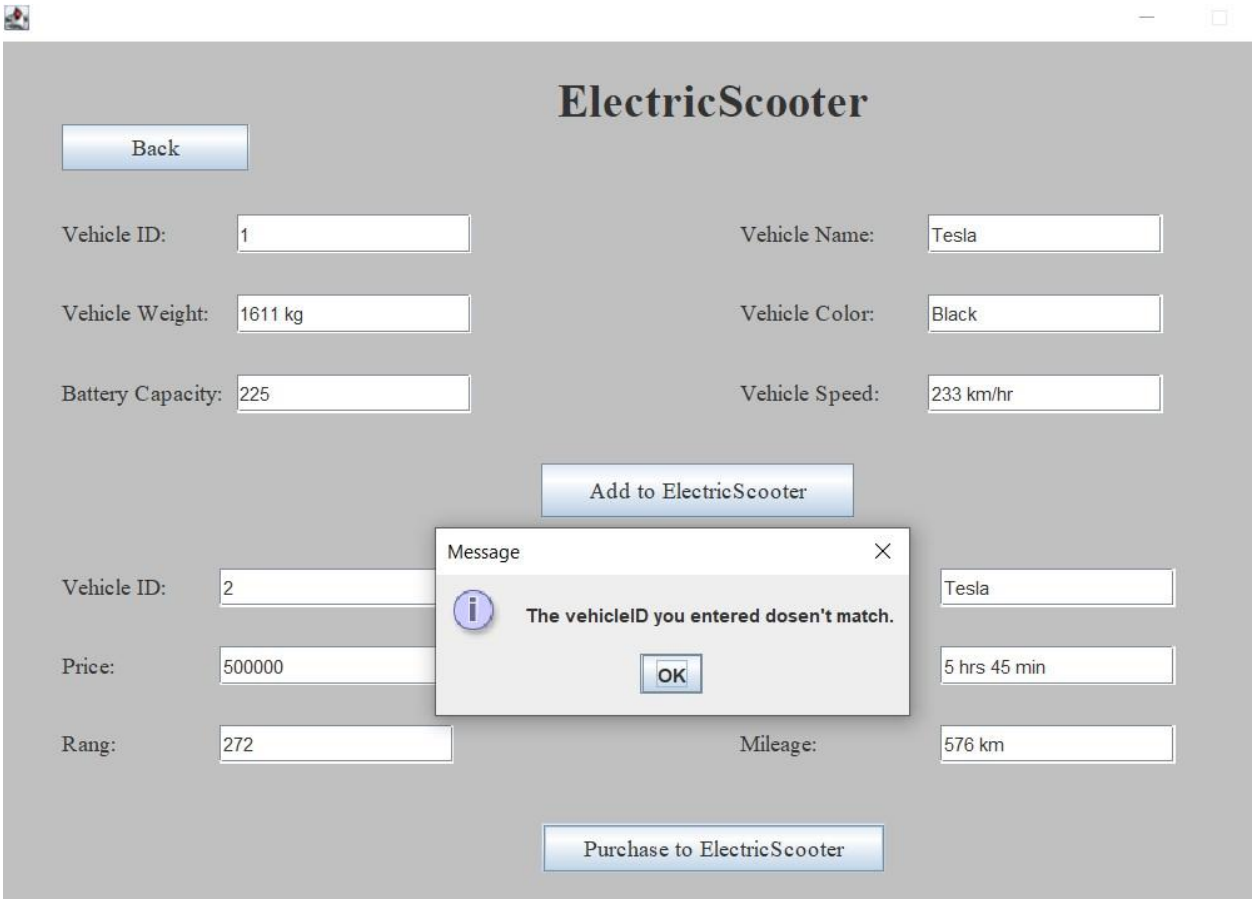

Figure 19: Screenshot of displaying an appropriate message while entering Invalid VehicleID to purchase ElectricScooter

ii. Try to sell Electricscooter with same data

Test	3(ii)
Objective	Test to sell the Electricscooter in the program by entering the same data.
Action	The following values are filled in text filed for sell for electricScooter Int vehicleid =1 Int price = 600000 Sell button is clicked.

Expected result	A message should that electricshould already been sold.
Actual result	A message display that electricscooter is already sold .
Conclusion	The test was Successful.

Table 8: Checking appropriate dialog box

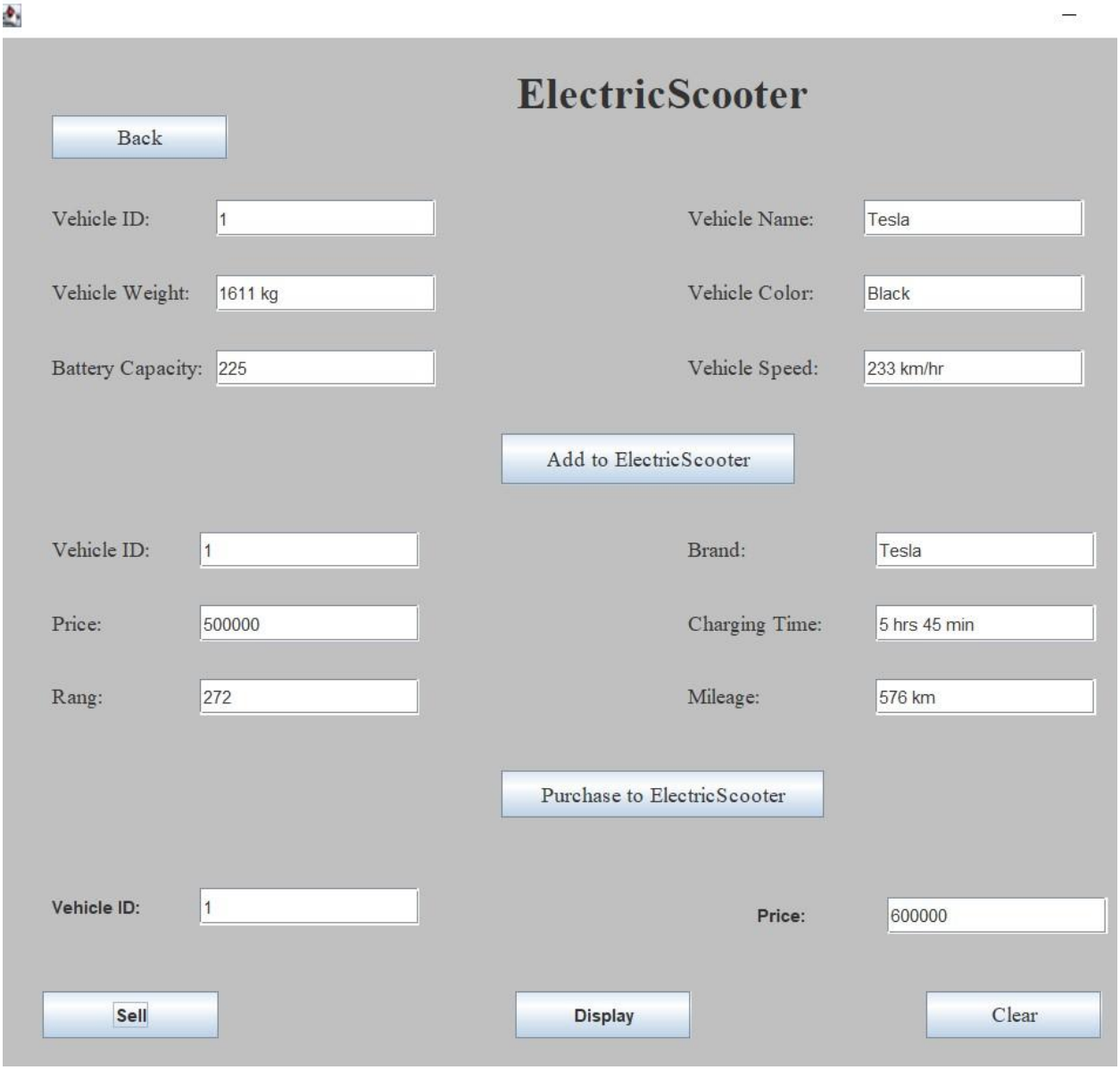

Figure 20:Screenshot of entering the same data to sell ElectricScooter

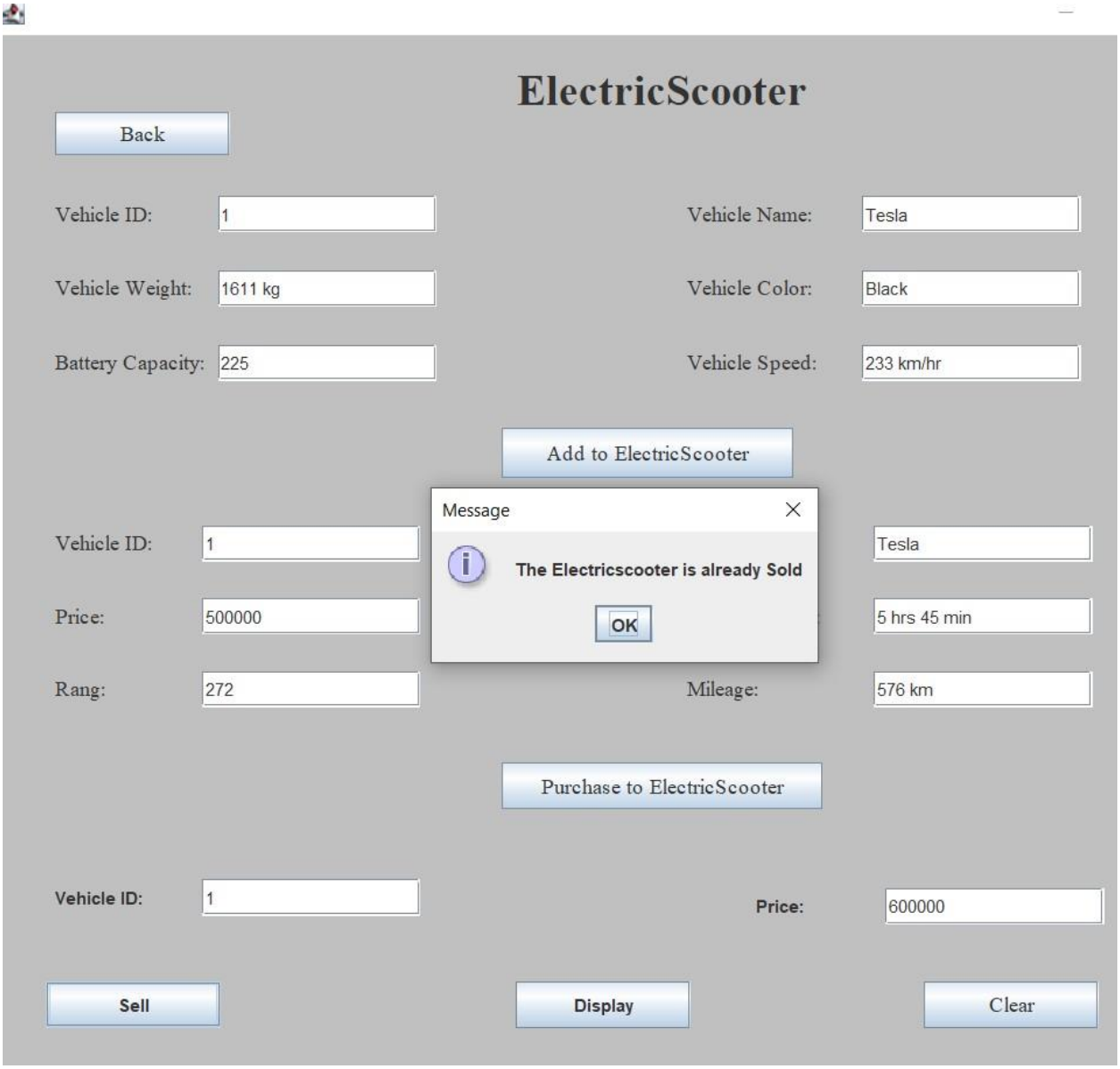

Figure 21: Screenshot of displaying an appropriate message while entering the same data to sell ElectricScooter

iii. Try to book Autorickshaw with invalid vehicleid

Test	3(iii)

Objective	Try to book autorickshaw with invalid vehicleid.
Action	The following values are filled in text filed for book to autorickshaw Int vehicleid = 3 Int noofseats = 3 Int chargeamount = 1000 String bookeddate = “2016 September 08” Book button is clicked.
Expected result	When book for Autorickshaw button will be clicked, the input values in the respective components won’t be booked .
Actual result	Autorickshaw wasn’t booked and message display that entered invalid id.
Conclusion	The test was Successful.

Table 9: Checking appropriate dialog box

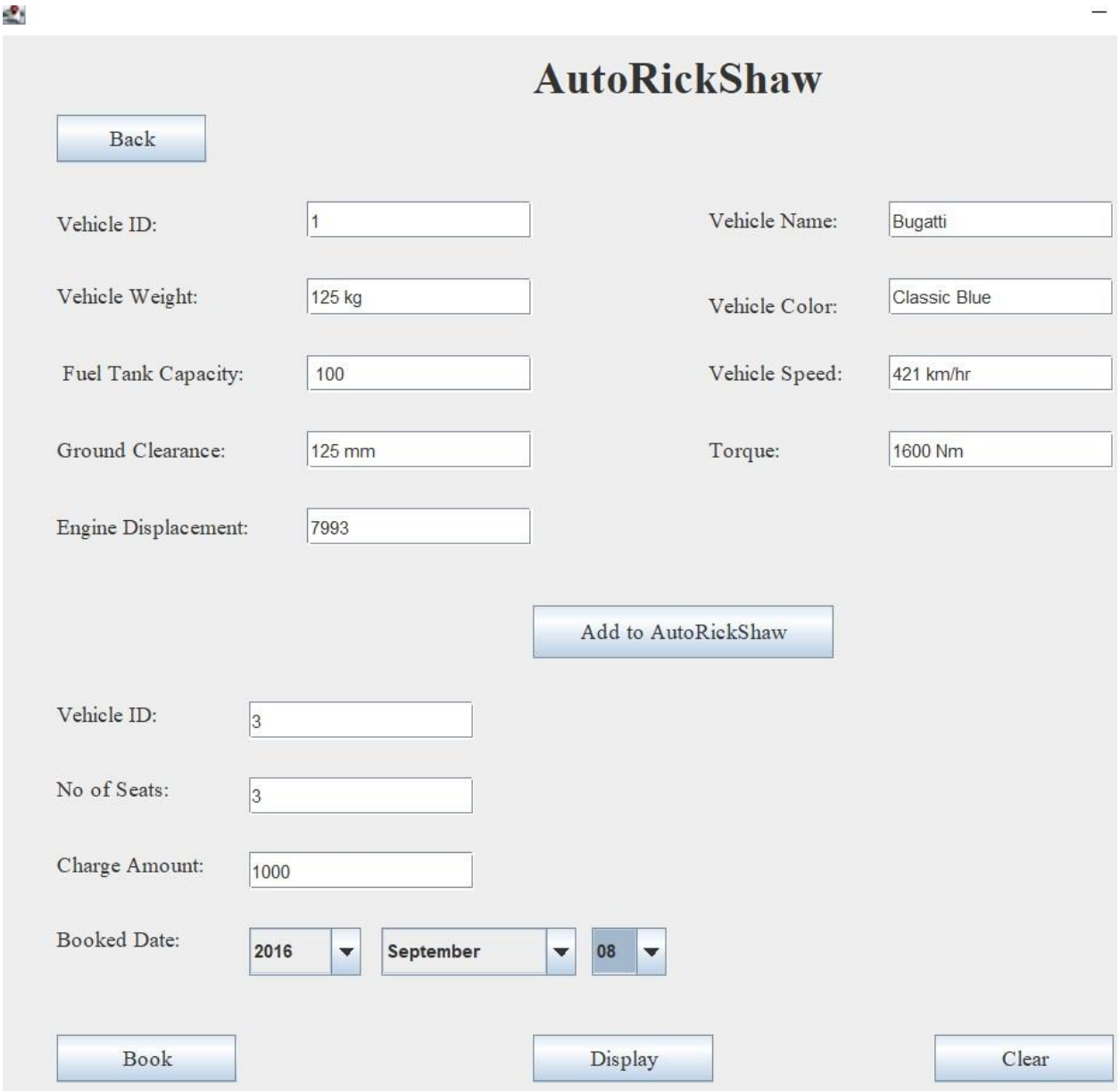

Figure 22: Screenshot of entering the same data to Book AutorickShwa

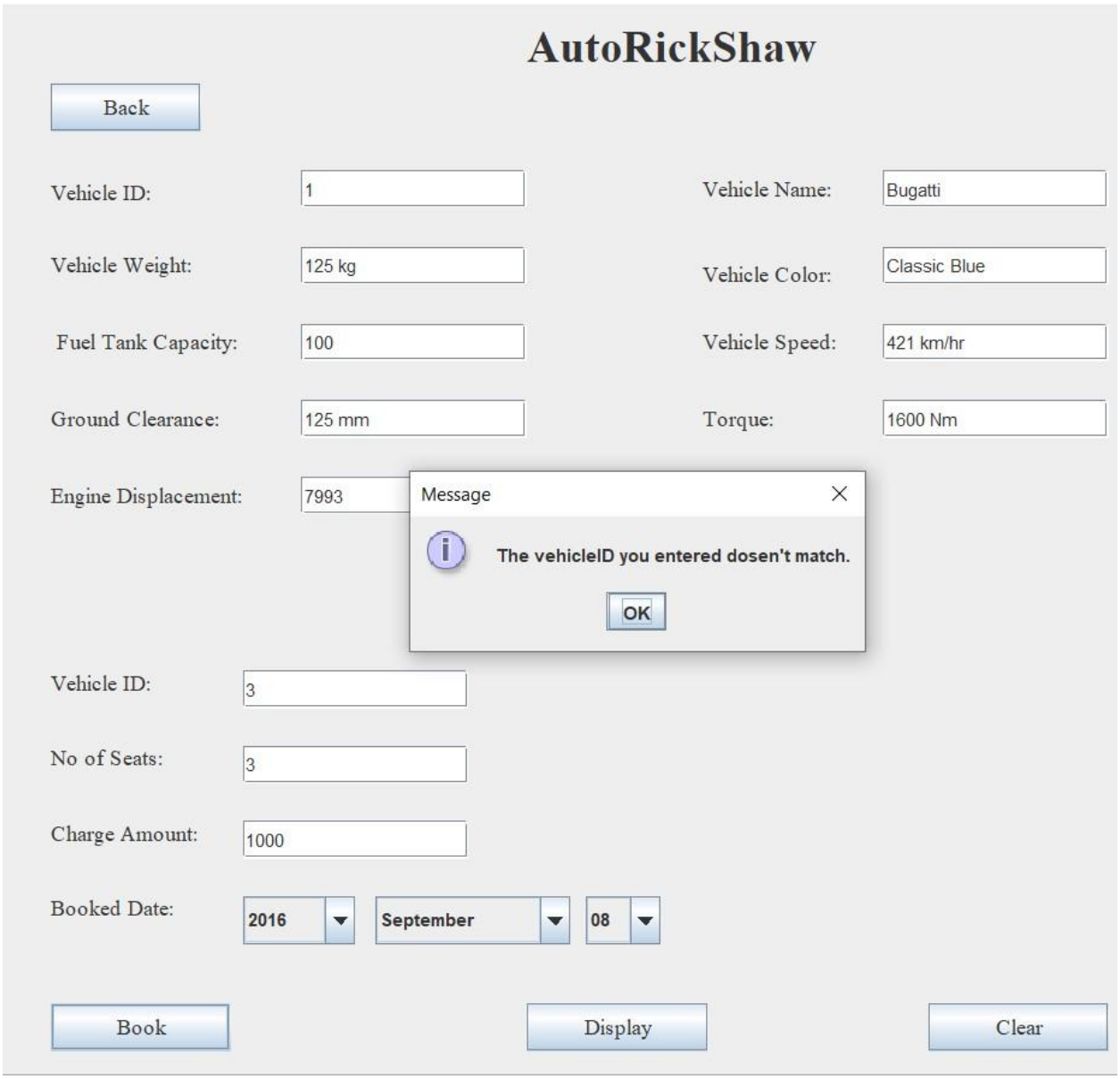

Figure 23: Screenshot of displaying an appropriate message while entering the same data to Book AutorickShaw

6 Error Detection and Correction

a. Syntax Error

A syntax error occurs when a programmer makes a mistake in the syntax of the code while developing it. This problem affects applications while they are running. The compiler quickly detects these problems, and the programmer must correct that to run the program.

i. Syntax Error Detection

The return type of the method was not indicated, which was a syntax error.

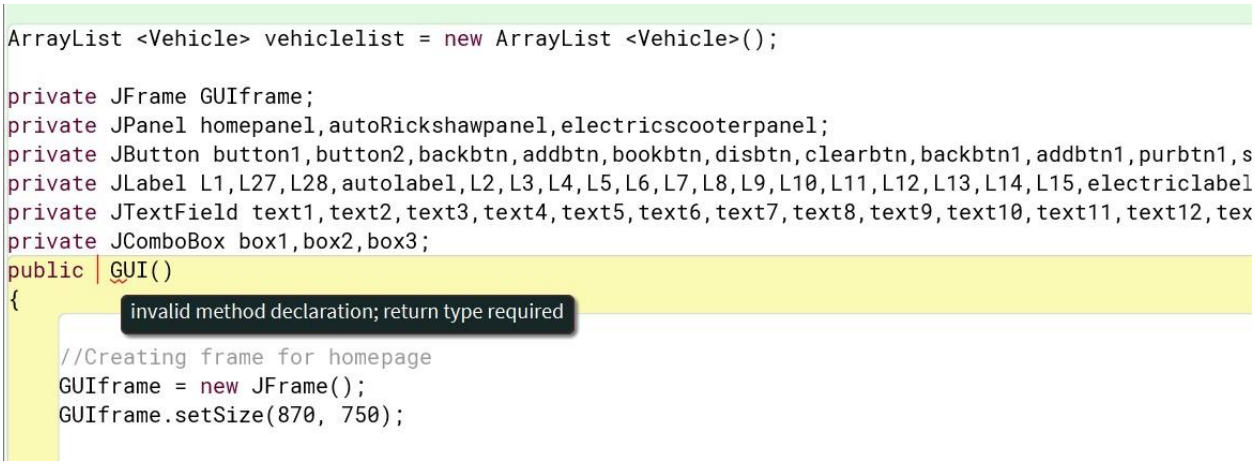

Figure 24: Screenshot when Syntax Error Detected

ii. Syntax Error Correction

The compiler caught the error, which was fixed by mentioning method's appropriate return type

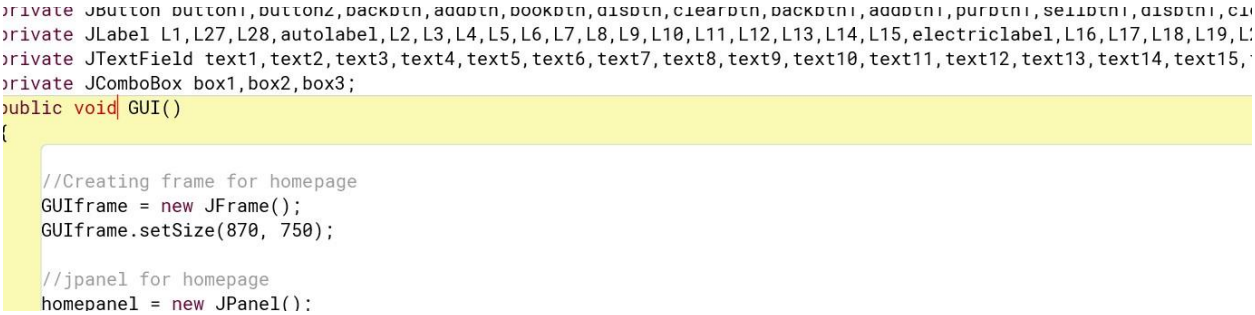

Figure 25: Screenshot when Syntax Error Corrected

b. Semantic Error

When a statement is syntactically correct but does not fulfill the function expected by the compiler as per the user requirement, it is called a semantic mistake. Compilers have improved their ability to detect several types of basic semantic errors in programming.

i. Semantic Error Detection

One variable was not declared but was used, which was a semantic error. This problem was discovered during the compilation of the application.

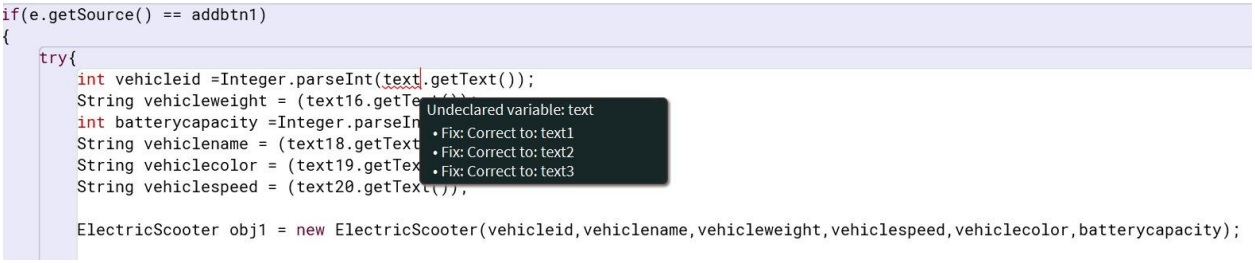

Figure 26: Screenshot when Semantic Error Detected

ii. Semantic Error Correction

This was fixed by declaring the variable with the appropriate data type.

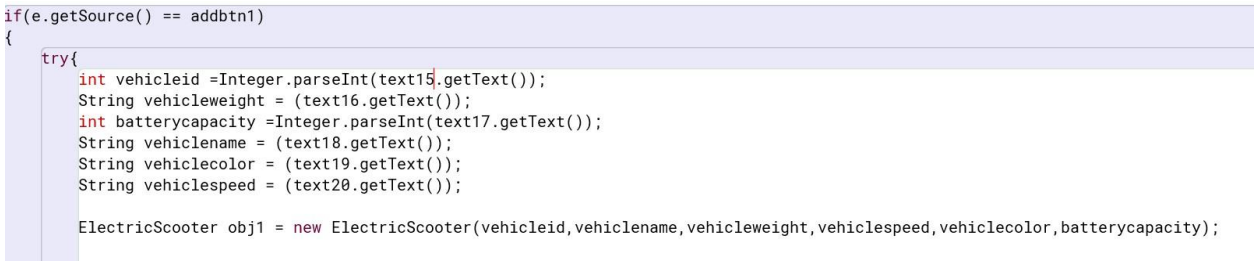

Figure 27: Screenshot when Semantic Error Corrected

c. Logical Error

A logic error occurs when our program compiles and runs but does not produce the desired result. These flaws are undetectable by neither the compiler nor the JVM.

i. Logical Error Detection

The error was found in the printing statement. The variables mileage and range were interchanged. Instead, range and mileage were printed and vice versa.

```
if(e.getSource() == button2)
{
    electricscooterpanel.setVisible(false);
    autoRickshawpanel.setVisible(true);
    homepanel.setVisible(false);
}

else if(e.getSource() == button2)
{
    electricscooterpanel.setVisible(true);
    autoRickshawpanel.setVisible(false);
    homepanel.setVisible(false);
```

Figure 28: Screenshot when Logical Error Detected

ii. Logical Error Correction

This error was corrected by interchanging the variables as shown in the figure below.

```
f(e.getSource() == button1)

   electricscooterpanel.setVisible(false);
   autoRickshawpanel.setVisible(true);
   homepanel.setVisible(false);


lse if(e.getSource() == button2)

   electricscooterpanel.setVisible(true);
```

Figure 29: Screenshot when Logical Error Corrected

7 Conclusion

As a result, Java is an advanced object-oriented programming language. The idea was the creation of James Gosling. Programming was the subject that was most important for us to learn. Java is case-sensitive, thus we encountered a ton of issues everywhere. But gradually, we were able to overcome that obstacle with the help of our lecturers and friends.

The primary goal of the coursework is to add a class to the project that we created for the first portion of the coursework in order to create a graphical user interface for a system that stores information on vehicles, including both autorickshaw and electric scooter classes. This coursework consists of four classes: vehicles, autorickshaws, electric scooters, and transport GUI. The primary class is vehicle, and there are two subclasses under it: autorickshaw and electric scooter. The Vehicle class inherits both subclasses. The following actions were taken: add for autorickshaw and electric scooter, book to autorickshaw, buy and sell to electric scooter, display and clear procedures. The curriculum is formed into a Simple GUI.

We have gained a lot of knowledge from this course work. For the first time, we had to create this kind of coursework, where we had to create a GUI for a vehicle that holds all information, including an autorickshaw, an electric scooter, and a class on transport GUI. Making the GUI required a lengthy and complex procedure. A separate TransportGUI class needed to be created, in which all methods and tasks were to be completed, run, and complied. Event handling, Exception handling, Java GUI mechanism, and ActionListener implementation are the things we learned. Even we experienced a lot of misunderstanding and difficulties when doing our coursework. Even we are unsure about how to begin a course. But we were able to finish the coursework with the aid of the teacher, the lecture and tutorial slides, and friends.

We were able to complete the assignment and turn it in on time after dealing with all the issues that came up while conducting the coursework. Re-watching and going through the slides helped to clarify the even handling and exception handling ideas.
We completed the coursework in this manner, submitting it on time.

8 Appendix

```
import javax.swing.*;
import java.awt.*; import
java.awt.event.*;
import java.util.ArrayList;

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

```
    private JFrame GUIframe;
    private JPanel homepanel,autoRickshawpanel,electricscooterpanel;
    private JButton
button1,button2,backbtn,addbtn,bookbtn,disbtn,clearbtn,backbtn1,addbtn1,purbtn1,s
ellbtn1,disbtn1,clearbtn1;
    private JLabel
L1,L27,L28,autolabel,L2,L3,L4,L5,L6,L7,L8,L9,L10,L11,L12,L13,L14,L15,electriclabe
l,L16,L17,L18,L19,L20,L21,L22,L23,L24,L25,L26,L29,L30;
    private JTextField
text1,text2,text3,text4,text5,text6,text7,text8,text9,text10,text11,text12,text13,text14,t
ext15,text16,text17,text18,text19,text20,text21,text22,text23,text24,text25,text26,text
29,text30;
    private JComboBox box1,box2,box3;
    public void GUI()
    {


        GUIframe = new JFrame();
        GUIframe.setSize(870, 750);


        homepanel = new JPanel();
        homepanel.setBackground(Color.LIGHT_GRAY);
        homepanel.setBounds(0,0,870,750);


        L1 = new JLabel("TRANSPORT GUI");
        L1.setBounds(295,100,300,50);
        Font f1 = new Font("Times New Roman",Font.BOLD,32);
L1.setFont(f1);

        L27 = new JLabel("Designed by :- Anju Kumari Yadav :) ");
        L27.setBounds(270,400,390,50);
        Font f27 = new Font("Times New Roman",Font.PLAIN,25);
        L27.setFont(f27); homepanel.add(L27);

        L28 = new JLabel("Version :- 6.6.6.6");
        L28.setBounds(325,500,390,50);
        Font f28 = new Font("Times New Roman",Font.PLAIN,25);
        L28.setFont(f28);
        homepanel.add(L28);

        button1 = new JButton("AutoRickShaw");
button1.setBounds(325, 200, 200,40);
        Font ff = new Font("Times New Roman",Font.PLAIN,25);
button1.setFont(ff);
```

```
        button2 = new JButton("ElectricScooter");
button2.setBounds(325, 300, 200, 40);
        Font fg = new Font("Times New Roman",Font.PLAIN,25);
button2.setFont(fg);


        autoRickshawpanel = new JPanel();
autoRickshawpanel.setBounds(0,0,870,750);
        homepanel.setBackground(Color.LIGHT_GRAY);

        autolabel = new JLabel("AutoRickShaw");
autolabel.setBounds(361,12,250,34);
        Font auto = new Font("Times New Roman",Font.BOLD,30);
        autolabel.setFont(auto);

        L2 = new JLabel("Vehicle ID:");
        L2.setBounds(44,111,100,30);
        Font f2 = new Font("Times New Roman",Font.PLAIN,15);
        L2.setFont(f2);

        L3 = new JLabel("Vehicle Name:");
        L3.setBounds(478,111,125,25);
        Font f3 = new Font("Times New Roman",Font.PLAIN,15);
        L3.setFont(f3);

        L4 = new JLabel("Vehicle Weight:");
        L4.setBounds(44,162,150,25);
        Font f4 = new Font("Times New Roman",Font.PLAIN,15);
        L4.setFont(f4);

        L5 = new JLabel("Vehicle Color:");
        L5.setBounds(478,168,150,25);
        Font f5 = new Font("Times New Roman",Font.PLAIN,15);
        L5.setFont(f5);

        L6 = new JLabel(" Fuel Tank Capacity:");
        L6.setBounds(44,213,150,25);
        Font f6 = new Font("Times New Roman",Font.PLAIN,15);
        L6.setFont(f6);

        L7 = new JLabel("Vehicle Speed:");
        L7.setBounds(478,213,108,25);
        Font f7 = new Font("Times New Roman",Font.PLAIN,15);
        L7.setFont(f7);

        L8 = new JLabel("Ground Clearance:");
```

```
L8.setBounds(44,264,146,25);
Font f8 = new Font("Times New Roman",Font.PLAIN,15);
L8.setFont(f8);

L9 = new JLabel("Torque:");
L9.setBounds(478,264,56,25);
Font f9 = new Font("Times New Roman",Font.PLAIN,15);
L9.setFont(f9);

L10 = new JLabel("Engine Displacement:");
L10.setBounds(44,315,160,25);
Font f10 = new Font("Times New Roman",Font.PLAIN,15);
L10.setFont(f10);

text2 = new JTextField();
text2.setBounds(211,111,150,25);

text3 = new JTextField();
text3.setBounds(598,111,150,25);

text4 = new JTextField();
text4.setBounds(211,162,150,25);

text5 = new JTextField();
text5.setBounds(598,162,150,25);

text6 = new JTextField();
text6.setBounds(211,213,150,25);

text7 = new JTextField();
text7.setBounds(598,213,150,25);

text8 = new JTextField();
text8.setBounds(211,264,150,25);

text9 = new JTextField();
text9.setBounds(598,264,150,25);

text10 = new JTextField();
text10.setBounds(211,315,150,25);

L11 = new JLabel("Vehicle ID:");
L11.setBounds(44,440,83,25);
Font f11 = new Font("Times New Roman",Font.PLAIN,15); L11.setFont(f11);

L12 = new JLabel("No of Seats:");
L12.setBounds(44,490,87,25);
```

```
        Font f12 = new Font("Times New Roman",Font.PLAIN,15);
        L12.setFont(f12);

        L13 = new JLabel("Charge Amount:");
        L13.setBounds(44,540,121,25);
        Font f13 = new Font("Times New Roman",Font.PLAIN,15);
L13.setFont(f13);

        L14 = new JLabel("Booked Date:");
        L14.setBounds(44,590,105,25);
        Font f14 = new Font("Times New Roman",Font.PLAIN,15);
L14.setFont(f14);

        String[] month =
{"January","February","March","April","May","June","August","September","October","
November","December"};
        String[] day =
{"01","02","03","04","05","06","07","08","09","10","11","12","13","14","15","16","17","15
","19","20","21","22","23","24","25","26","27","28","29","30","31"};
        String[] year
={"1995","1996","1997","1998","1999","2000","2001","2002","2003","2004","2005","2
006","2007","2008","2009","2010","2011","2012","2013","2014","2015","2016","2017"
,"2015","2019","2020","2021","2022"};
box1 = new JComboBox(year);
        box1.setBounds(172,594,75,32);

        box2 = new JComboBox(month);
        box2.setBounds(260,594,130,32);

        box3 = new JComboBox(day);
        box3.setBounds(400,594,50,32);

        text11 = new JTextField();
text11.setBounds(172,444,150,25);

        text12 = new JTextField();
text12.setBounds(172,494,150,25);

        text13 = new JTextField();
text13.setBounds(172,544,150,25);

        text14 = new JTextField();
        text14.setBounds(172,594,150,25);

        backbtn  = new JButton("Back");
        backbtn.setBounds(44,53,100,32);
```

```
        Font fb = new Font("Times New Roman",Font.PLAIN,15);
backbtn.setFont(fb);

        addbtn = new JButton("Add to AutoRickShaw");
addbtn.setBounds(361,380,200,35);
        Font fa = new Font("Times New Roman",Font.PLAIN,15);
addbtn.setFont(fa);

        bookbtn = new JButton("Book");
bookbtn.setBounds(44,665,120,32);
        Font fB = new Font("Times New Roman",Font.PLAIN,15);
bookbtn.setFont(fB);

        clearbtn = new JButton("Clear");
clearbtn.setBounds(628,665,120,32);
        Font fc = new Font("Times New Roman",Font.PLAIN,15);
clearbtn.setFont(fc);

        disbtn = new JButton("Display");
        Font fd = new Font("Times New Roman",Font.PLAIN,15);
disbtn.setFont(fd);
        disbtn.setBounds(361,665,120,32);

        electricscooterpanel = new JPanel();
electricscooterpanel.setBounds(0,0,870,750);
electricscooterpanel.setBackground(Color.LIGHT_GRAY);

        electriclabel = new JLabel("ElectricScooter");
electriclabel.setBounds(361,20,250,36);
        Font electric = new Font("Times New Roman",Font.BOLD,30);
electriclabel.setFont(electric);

        L15 = new JLabel("Vehicle ID:");
        L15.setBounds(44,111,83,25);
        Font f15 = new Font("Times New Roman",Font.PLAIN,15);
        L15.setFont(f15);

        L16 = new JLabel("Vehicle Weight:");
        L16.setBounds(44,162,115,25);
        Font f16 = new Font("Times New Roman",Font.PLAIN,15);
        L16.setFont(f16);

        L17 = new JLabel("Battery Capacity:");
        L17.setBounds(44,213,142,25);
        Font f17 = new Font("Times New Roman",Font.PLAIN,15); L17.setFont(f17);

        L18 = new JLabel("Vehicle Name:");
```

```
L18.setBounds(478,111,105,25);
Font f18 = new Font("Times New Roman",Font.PLAIN,15);
L18.setFont(f18);

L19 = new JLabel("Vehicle Color:");
L19.setBounds(478,162,105,25);
Font f19 = new Font("Times New Roman",Font.PLAIN,15);
L19.setFont(f19);

L20 = new JLabel("Vehicle Speed:");
L20.setBounds(478,213,108,25);
Font f20 = new Font("Times New Roman",Font.PLAIN,15);
L20.setFont(f20);

text15 = new JTextField();
text15.setBounds(156,111,150,25);

text16 = new JTextField();
text16.setBounds(156,162,150,25);

text17 = new JTextField();
text17.setBounds(156,213,150,25);

text18 = new JTextField();
text18.setBounds(598,111,150,25);

text19 = new JTextField();
text19.setBounds(598,162,150,25);

text20 = new JTextField();
text20.setBounds(598,213,150,25);

L21 = new JLabel("Vehicle ID:");
L21.setBounds(44,337,83,25);
Font f21 = new Font("Times New Roman",Font.PLAIN,15);
L21.setFont(f21);

L22 = new JLabel("Price:");
L22.setBounds(44,387,42,25);
Font f22 = new Font("Times New Roman",Font.PLAIN,15);
L22.setFont(f22);

L23 = new JLabel("Rang:");
L23.setBounds(44,437,51,25);
Font f23 = new Font("Times New Roman",Font.PLAIN,15);
L23.setFont(f23);
```

```
L24 = new JLabel("Brand:");
L24.setBounds(478,337,50,25);
Font f24 = new Font("Times New Roman",Font.PLAIN,15); L24.setFont(f24);

L25 = new JLabel("Charging Time:");
L25.setBounds(478,387,114,25);
Font f25 = new Font("Times New Roman",Font.PLAIN,15);
L25.setFont(f25);

L26 = new JLabel("Mileage:");
L26.setBounds(478,437,64,25);
Font f26 = new Font("Times New Roman",Font.PLAIN,15);
L26.setFont(f26);

text21 = new JTextField();
text21.setBounds(145,337,150,25);

text22 = new JTextField();
text22.setBounds(145,387,150,25);

text23 = new JTextField();
text23.setBounds(145,437,150,25);

text24 = new JTextField();
text24.setBounds(606,337,150,25);

text25 = new JTextField();
text25.setBounds(606,387,150,25);

text26 = new JTextField();
text26.setBounds(606,437,150,25);

L29 = new JLabel("Vehicle ID:");
L29.setBounds(44,580,64,25);
Font f29 = new Font("Times New Roman",Font.PLAIN,15);
L26.setFont(f29);

L30 = new JLabel("Price:");
L30.setBounds(525,586,64,25);
Font f30 = new Font("Times New Roman",Font.PLAIN,15);
L26.setFont(f30);

text29 = new JTextField();
text29.setBounds(145,580,150,25);

text30 = new JTextField();
text30.setBounds(614,586,150,25);
```

```
        backbtn1  = new JButton("Back");
        backbtn1.setBounds(44,53,120,30);
        Font fb1 = new Font("Times New Roman",Font.PLAIN,15); backbtn1.setFont(fb1);
        addbtn1 = new JButton("Add to ElectricScooter");
        addbtn1.setBounds(351,270,200,35);
        Font fa1 = new Font("Times New Roman",Font.PLAIN,15);
        addbtn1.setFont(fa1);

        purbtn1 = new JButton("Purchase to ElectricScooter");
        purbtn1.setBounds(351,500,220,32);
        Font fp1 = new Font("Times New Roman",Font.PLAIN,15);
purbtn1.setFont(fp1);

        sellbtn1 =  new JButton("Sell");
sellbtn1.setBounds(38,650,120,32);
        Font fs1 = new Font("Times New Roman",Font.PLAIN,15);
purbtn1.setFont(fs1);

        clearbtn1 = new JButton("Clear");
clearbtn1.setBounds(640,650,120,32);
        Font fc1 = new Font("Times New Roman",Font.PLAIN,15);
        clearbtn1.setFont(fc1);

        disbtn1 = new JButton("Display");
disbtn1.setBounds(360,650,120,32);
        Font fd1 = new Font("Times New Roman",Font.PLAIN,15);
disbtn.setFont(fd1);



        GUIframe.add(homepanel);
        GUIframe.add(autoRickshawpanel);
        GUIframe.add(electricscooterpanel);

        homepanel.add(L1);
homepanel.add(button1);
homepanel.add(button2);
autoRickshawpanel.add(autolabel);
autoRickshawpanel.add(L2);
autoRickshawpanel.add(L3);
autoRickshawpanel.add(L4);
autoRickshawpanel.add(L5);
autoRickshawpanel.add(L6);
autoRickshawpanel.add(L7);
autoRickshawpanel.add(L8);
autoRickshawpanel.add(L9);
        autoRickshawpanel.add(L10);
```

```
        autoRickshawpanel.add(L11);
autoRickshawpanel.add(L12);         autoRickshawpanel.add(L13);
autoRickshawpanel.add(L14);

        autoRickshawpanel.add(text2); autoRickshawpanel.add(text3);
autoRickshawpanel.add(text4); autoRickshawpanel.add(text5);
autoRickshawpanel.add(text6);         autoRickshawpanel.add(text7);
autoRickshawpanel.add(text8);         autoRickshawpanel.add(text9);
        autoRickshawpanel.add(text10);

        autoRickshawpanel.add(text11);
autoRickshawpanel.add(text12);         autoRickshawpanel.add(text13);


        autoRickshawpanel.add(box1);
autoRickshawpanel.add(box2);         autoRickshawpanel.add(box3);


        autoRickshawpanel.add(backbtn);
autoRickshawpanel.add(addbtn);
autoRickshawpanel.add(bookbtn);
autoRickshawpanel.add(clearbtn);
        autoRickshawpanel.add(disbtn);

        electricscooterpanel.add(electriclabel);
electricscooterpanel.add(L15);         electricscooterpanel.add(L16);
electricscooterpanel.add(L17);         electricscooterpanel.add(L18);
electricscooterpanel.add(L19);         electricscooterpanel.add(L20);

        electricscooterpanel.add(L21);
electricscooterpanel.add(L22);         electricscooterpanel.add(L23);
electricscooterpanel.add(L24);         electricscooterpanel.add(L25);
electricscooterpanel.add(L26);         electricscooterpanel.add(L29);
electricscooterpanel.add(L30);


        electricscooterpanel.add(text15);
electricscooterpanel.add(text16); electricscooterpanel.add(text17);
electricscooterpanel.add(text18);         electricscooterpanel.add(text19);
electricscooterpanel.add(text20); electricscooterpanel.add(text21);
electricscooterpanel.add(text22); electricscooterpanel.add(text23);
electricscooterpanel.add(text24);         electricscooterpanel.add(text25);
electricscooterpanel.add(text26);         electricscooterpanel.add(text29);
electricscooterpanel.add(text30);
```

```
        electricscooterpanel.add(backbtn1);
electricscooterpanel.add(addbtn1);
electricscooterpanel.add(purbtn1);
electricscooterpanel.add(sellbtn1);         electricscooterpanel.add(disbtn1);
        electricscooterpanel.add(clearbtn1);


        button1.addActionListener(this);
button2.addActionListener(this);

        backbtn.addActionListener(this);
addbtn.addActionListener(this);
bookbtn.addActionListener(this);         disbtn.addActionListener(this);
        clearbtn.addActionListener(this);

        backbtn1.addActionListener(this);
addbtn1.addActionListener(this);
purbtn1.addActionListener(this);
sellbtn1.addActionListener(this);
disbtn1.addActionListener(this);
        clearbtn1.addActionListener(this);



        homepanel.setLayout(null);
homepanel.setVisible(true);
autoRickshawpanel.setLayout(null);
autoRickshawpanel.setVisible(false);
electricscooterpanel.setLayout(null);
        electricscooterpanel.setVisible(false);

        GUIframe.setLayout(null);
        GUIframe.setVisible(true);
        GUIframe.setLocationRelativeTo(null);//centered the GUI Frame on the Screen
GUIframe.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);//Exit the
application and it avoids running program in background
        GUIframe.setResizable(false);

    }
    public void actionPerformed(ActionEvent e)
    {

        if(e.getSource() == backbtn)
        {
            electricscooterpanel.setVisible(false);
autoRickshawpanel.setVisible(false);             homepanel.setVisible(true);
        }
```

```
        if(e.getSource() == button1)
        {
            electricscooterpanel.setVisible(false);
autoRickshawpanel.setVisible(true);            homepanel.setVisible(false);
        }

        else if(e.getSource() == button2)
        {
            electricscooterpanel.setVisible(true);
autoRickshawpanel.setVisible(false);            homepanel.setVisible(false);
        }

        if(e.getSource() == backbtn1)
        {
            electricscooterpanel.setVisible(false);
autoRickshawpanel.setVisible(false);            homepanel.setVisible(true);

        }


        if(e.getSource()==addbtn){
            try{
                int vehicleid=Integer.parseInt(text2.getText());
                String vehiclename=(text3.getText());
                String vehicleweight=(text4.getText());
String vehiclecolor=(text5.getText());
                int fueltankcapacity=Integer.parseInt(text6.getText());
                String vehiclespeed=(text7.getText());
                String groundclearance=(text8.getText());
                String torque=(text9.getText());
                int enginedisplacement=Integer.parseInt(text10.getText());

                AutoRickShaw                obj                =                new
AutoRickShaw(vehicleid,vehiclename,vehicleweight,vehiclecolor,vehiclespeed,engin
edisplacement,
                        torque,fueltankcapacity,groundclearance);
                vehiclelist.add(obj);

                JOptionPane.showMessageDialog(autoRickshawpanel,"Added Successfully
:)");
            }catch(NumberFormatException error){

                JOptionPane.showMessageDialog(autoRickshawpanel,"Plz check the form fill
up format!");
            }
        }
```

```
        if(e.getSource() == addbtn1)
        {
try{
            int vehicleid =Integer.parseInt(text15.getText());
String vehicleweight = (text16.getText());
            int batterycapacity =Integer.parseInt(text17.getText());
            String vehiclename = (text18.getText());
            String vehiclecolor = (text19.getText());
            String vehiclespeed = (text20.getText());

            ElectricScooter obj1 = new
ElectricScooter(vehicleid,vehiclename,vehicleweight,vehiclespeed,vehiclecolor,batte
rycapacity);

            vehiclelist.add(obj1);

            JOptionPane.showMessageDialog(electricscooterpanel,"Added Successfully
:)");
          }catch(NumberFormatException error){
            JOptionPane.showMessageDialog(electricscooterpanel,"Please fill the
form properly!");
          }
        }

        if(e.getSource() == bookbtn)
        {
try{
            String year =box1.getSelectedItem().toString();
            String month = box2.getSelectedItem().toString();
            String day = box3.getSelectedItem().toString();
String bookeddate = year+month+day;             int vehicleid =
Integer.parseInt(text11.getText());             int noofseats =
Integer.parseInt(text12.getText());             int chargeamount =
Integer.parseInt(text13.getText());


            for(Vehicle obj2 : vehiclelist)
            {
              if(obj2 instanceof AutoRickShaw)//converting bookmethod to autorickshaw:
              {
                AutoRickShaw auto_obj = (AutoRickShaw) obj2;
                if(auto_obj.getID() == vehicleid)//return the value of vehicle id from
vehicle class
                {
                  JOptionPane.showMessageDialog(autoRickshawpanel,"The
```

```
vehicle is booked having ID"+" "+vehicleid+"\n"+"No of Seats:"+"
"+noofseats+"\n"+"Charge Amount:"+" "+chargeamount+"\n"+"Booked date:"+"
"+bookeddate);

                    if(auto_obj.getisBooked() == true)
                    {
                        JOptionPane.showMessageDialog(autoRickshawpanel,"The
Autorickshaw having vehicleID is already booked.");
break;

                    }

                    else if(auto_obj.getisBooked() == false)
                    {
                        auto_obj.Book(bookeddate, chargeamount, noofseats);
                        //new
                        //System.out.println("bookeddate:
"+bookeddate+"\nchargeamount"+chargeamount+"\nnoofseats"+noofseats);
                        //new
                        JOptionPane.showMessageDialog(autoRickshawpanel,"The
AutoRickShaw having vehicleID is" +vehicleid+ "is booked");
break;
                    }

                }else{
                    JOptionPane.showMessageDialog(autoRickshawpanel,"The vehicleID
you entered dosen't match.");
                }

            }
        }

        }catch(NumberFormatException error)
        {
            JOptionPane.showMessageDialog(autoRickshawpanel,"Please enter the
correct value.");
        }
    }

    if(e.getSource() == purbtn1)
    {
try{
int
vehicleid =
Integer.pa
rseInt(text
21.getText
());
```

```
int price =
Integer.pa
rseInt(text
22.getText
());
int range =
Integer.pa
rseInt(text
23.getText
());
            String brand = text24.getText();
            String chargingtime = text25.getText();
            String mileage = text26.getText();

            for(Vehicle obj3 : vehiclelist)
            {

                if(obj3 instanceof ElectricScooter)
                {
                    ElectricScooter electric_obj = (ElectricScooter) obj3;
if(electric_obj.getID() == vehicleid)
                    {
                        JOptionPane.showMessageDialog(electricscooterpanel,"The vehicleID
is valid with range"+range+",brand"+brand+",price"+price+",charging
time"+chargingtime+",mileage"+mileage);

                        if(electric_obj.gethaspurchased() == false)
                        {
                            electric_obj.Purchase(brand, range, price, chargingtime, mileage);
                            JOptionPane.showMessageDialog(electricscooterpanel,"The
Electricscooter having vehicleid "+vehicleid+"is purchased.");
                        }else{
                            JOptionPane.showMessageDialog(electricscooterpanel,"The
Electricscooter having vehicleid "+vehicleid+"is already been purchased.");
                        }
                    }else{
                        JOptionPane.showMessageDialog(electricscooterpanel,"The vehicleID
you entered dosen't match.");
                    }

                }
            }
        }catch(NumberFormatException error)
        {
            JOptionPane.showMessageDialog(electricscooterpanel,"Please enter the
correct value.");
        }
```

```
        }

        if(e.getSource() == sellbtn1)
        {
try{
            int vehicleid = Integer.parseInt(text29.getText());
int price = Integer.parseInt(text30.getText());
for(Vehicle obj4 : vehiclelist)
            {
                if(obj4 instanceof ElectricScooter)
                {
                    ElectricScooter electric_obj1 = (ElectricScooter) obj4;
if(electric_obj1.getID() == vehicleid)
                    {
                        JOptionPane.showMessageDialog(electricscooterpanel,"The vehicleID
is Sold with vehicleID"+vehicleid+" price"+price);

                        if(electric_obj1.gethasSold() == true)
                        {

                            JOptionPane.showMessageDialog(electricscooterpanel,"The
Electricscooter is already Sold");
                        }else{
                            electric_obj1.sell(price);
                            JOptionPane.showMessageDialog(electricscooterpanel,"The
Electricscooter is Sold successfully");

                        }
                    }else{
                        JOptionPane.showMessageDialog(electricscooterpanel,"The vehicleID
you entered dosen't match.");
                    }

                }
            }
          }catch(NumberFormatException error)
          {
              JOptionPane.showMessageDialog(electricscooterpanel,"Please enter the
crroect value.");
          }

        }

        if(e.getSource() == clearbtn)
        {
            text2.setText("");
text3.setText("");            text4.setText("");
```

```
text5.setText("");            text6.setText("");
text7.setText("");            text8.setText("");
text9.setText("");
text10.setText("");
text11.setText("");
text12.setText("");
text13.setText("");
text14.setText("");        }
       if(e.getSource() == clearbtn1)
       {
          text15.setText("");
text16.setText("");            text17.setText("");
text18.setText("");            text19.setText("");
text20.setText("");            text21.setText("");
text22.setText("");            text23.setText("");
text24.setText("");            text25.setText("");
text26.setText("");            text29.setText("");
text30.setText("");
       }

       //display for autorickshaw
if(e.getSource()==disbtn){            for(Vehicle
displayauto: vehiclelist){              if(displayauto
instanceof AutoRickShaw){
                AutoRickShaw obj1 = (AutoRickShaw) displayauto;
obj1.display();
             }
          }
       }

       //display for electic scooter
if(e.getSource()==disbtn1){            for(Vehicle
displayauto: vehiclelist){             if(displayauto
instanceof ElectricScooter){
                ElectricScooter obj1 = (ElectricScooter) displayauto;
obj1.display();
             }
          }

       }
   }

   public static void main(String[] args)
   {
      new TransportGUI().GUI();
   }
}
```