Introduction Document for Week5 Hand-in Assignment

This project contains 6 classes:

1. Vehicle class:
   1. This abstract class serves as the blueprint for the Car, Van, and Motorcycle classes.
   2. Contains the following instance variables:
      1. manufacturer and model, which are of data type String.
      2. registrationDate, which is of data type Date.
      3. formatter, which of data type DateFormat. This specifies that the date being inputted to the registration date be in the format ddMMyyyy.
   3. Contains set and get methods for the above instance variables.
   4. Contains the abstract method getTax(), which must be implemented by all classes that inherit from this class.
   5. Contains toString () method, which returns a string representation of all of the above instance variables, as well as the getTax() methods.
2. Car class.
   1. This class serves as the blueprint for the Car object.
   2. Extends the Vehicle class, so it inherits all of its instance variables and methods.
   3. Contains the instance variables not inherited:
      1. engineSize, which is of data type float.
      2. co2Emission, which is of data type int.
   4. The toString() method is overridden and another toString() method is created which returns all of the inherited instance variables, as well as the newly created ones here.
   5. The getTax() method inherited from the Vehicle class is overridden as required.
3. Van class.
   1. This class serves as the blueprint for the Van object.
   2. Extends the Vehicle class, so it inherits all of its instance variables and methods.
   3. Contains the instance variable not inherited:
      1. weight, which is of data type float
   4. The toString() method is overridden and another toString() method is created which returns all of the inherited instance variables, as well as the newly created ones here.
   5. The getTax() method inherited from the Vehicle class is overridden as required.
4. Motorcycle class
   1. This class serves as the blueprint for the Motorcycle object.
   2. Extends the Vehicle class, so it inherits all of its instance variables and methods.
   3. Contains the instance variable not inherited:
      1. engineSize, which is of data type float.
   4. The toString() method is overridden and another toString() method is created which returns all of the inherited instance variables, as well as the newly created ones here.
   5. The getTax() method inherited from the Vehicle class is overridden as required.
5. Assignment5App
   1. This class is the application class for the project, and is used to create instances of the Car, Van, and Motorcycle classes
   2. Extends the JFrame class, so it inherits all of its instance variables and methods.
   3. Contains the instance variables:
      1. JLabels and JTextFields for:
         1. manufacturer
         2. model
         3. day
         4. month
         5. year
         6. weight
         7. engineSize
         8. emission
      2. JButtons for displaying vehicle information and canceling (exiting) the program.
      3. JLabel and JComboBox for components that make up the vehicle selection component (car, van, motorcycle).
         1. The respective icon shows up, depending on what vehicle is selected.
         2. Only textfields that apply to the current vehicle selected are editable. The textfields which do not apply to the current vehicle are not, and are grayed-out.
   4. Contains the private class ButtonHandler, which implements the ActionListener interface.
      1. This private class is used for event handling (what to do when buttons are pressed).
   5. Contains the anonymous inner class itemListener, which uses the itemStateChanged() method for handling JComboBox events.
   6. Contains the private methods:
      1. setInterface(), which sets certain textfields as uneditable, depending on the vehicle type selected.
      2. collectTextFromTextFields(), which collects string data from textfields, depending on vehicle type selected.
      3. isAllInputValid(), which returns true if the input received from the user is valid.
         1. This method is overloaded:
            1. If there are 8 arguments in the method signature, then it validates string data from the relevant fields for a car.
            2. If there are 7 arguments in the method signature, then it validates string data from the relevant fields for a van or motorcycle.
      4. displayInvalidInputMsg(),which informs the user that an invalid input was received if:
         1. Any textfield is empty except for street2JTextField.
         2. House number or phone number contains non-numeric characters.
      5. displayCarInfo(), which instantiates an instance of the Car class, and calls its toString() method to show vehicle info in a dialog box.
      6. displayVanInfo(),(), which instantiates an instance of the Van class, and calls its toString() method to show vehicle info in a dialog box.
      7. displayMotorcycleInfo(),(), which instantiates an instance of the Van class, and calls its toString() method to show vehicle info in a dialog box.
6. Assignment5Driver
   1. This class is used to create an instance of the Assignment5App class.
   2. The size of the JFrame created is specified.
   3. When the JFrame is closed, the program exits.

Screen shots:









