Credit Name: Chapter 8
Assignment Name: Vehicle Mastery

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Reflection log

Firstly I implemented the variables and constructor that was mentioned within the provided assignment.

```
abstract class Vehicle {
    private double fuelEconomyCity;
    private double fuelEconomyHwy;
    private int seatingCapacity;
    private double cargoVolume;

    public Vehicle(double fuelC, double fuelH, int seatC, double cargoV) {
       fuelEconomyCity = fuelC;
       fuelEconomyHwy = fuelH;
       seatingCapacity =  seatC;
       cargoVolume = cargoV;
    }
```

I then created the modifier and accessor methods for the given variables

```
public double getfuelEconomyCity() {
    return fuelEconomyCity;
}
public void setfuelEconomyCity(double fuelC)
{
    fuelEconomyCity = fuelC;
}

public double getfuelEconomyHwy() {
    return fuelEconomyHwy;
}
public void setfuelEconomyHwy(double fuelH)
{
    fuelEconomyHwy = fuelH;
}

public int getseatingCapacity() {
    return seatingCapacity;
}
public void setseatingCapacity(int seatC)
{
    seatingCapacity = seatC;
}

public double getcargoVolume() {
    return cargoVolume;
}

public void setcargoVolume(double cargoV)
{
    cargoVolume = cargoV;
}
```

And finally in the vehicle class I implemented vehicle type and the vehicle toString method for testing later.

```
    public abstract String vehicleType();


    public String toString() {
        String veh =
                "Fuel economy city " + fuelEconomyCity +
                "\nFuel economy hwy " + fuelEconomyHwy +
                "\nSeating Capacity " + seatingCapacity +
                "\nCargo Volume " + cargoVolume;
        return veh;
    }
}
```

The for each vehicle class I mirrored and returned the needed information like you see below

Implement trunkSize as a variable

```
    class Car extends Vehicle {
        private double trunkSize;

        public Car(double fuelC, double fuelH, int seatC, double cargoV, d
            super(fuelC, fuelH, seatC, cargoV);
            trunkSize = trunkS;
        }

        public double getTrunkSize() {
            return trunkSize;
        }

        public void setTrunkSize(double trunkS) {
            trunkSize = trunkS;
        }


        @Override
        public String vehicleType() {
            return "Car";
        }
        public String toString()
        {
            return(super.toString() + "\nTrunk Size: " + trunkSize);
        }
```

Implement slidingDoors as a variable

```java
package Masteries.Vehicle;


class Minivan extends Vehicle {
    private boolean slidingDoors;

    public Minivan(double fuelC, double fuelH, int seatC, double cargoV, boolean sD) {
        super(fuelC, fuelH, seatC, cargoV);
       slidingDoors =  sD;
    }

    public boolean hasSlidingDoors() {
        return slidingDoors;
    }

    @Override
    public String vehicleType() {
        return "Minivan";
    }
    public String toString()
    {
        return(super.toString() + "\nHas sliding doors: " + slidingDoors);
    }
}
```

Implement bedLength as a Variable

```java
package Masteries.Vehicle;

class Truck extends Vehicle {
    private double bedLength;

    public Truck(double fuelC, double fuelH, int seatC, double cargoV, double bedL) {
        super(fuelC, fuelH, seatC, cargoV);
        bedLength = bedL;
    }

    public double getBedLength() {
        return bedLength;
    }
    public void setBedLength(double bedL) {
        bedLength = bedL;
    }

    @Override
    public String vehicleType() {
        return "Truck";
    }

    public String toString()
    {
        return(super.toString() + "\nBed Length: " + bedLength);
    }
```

And to finish it off I used the Car class to test my program and to do this assigned random values for each variable for testing purposes. And finally printed the data for each vehicle type.

```
package Masteries.Vehicle;

    public class VehicleTest {
        public static void main(String[] args) {

            Car car = new Car(25, 35, 5, 15, 12);
            Truck truck = new Truck(15, 20, 3, 50, 8);
            Minivan minivan = new Minivan(20, 28, 7, 30, true);

                System.out.println(car.vehicleType());
                System.out.println(car.getfuelEconomyCity());
                System.out.println(car.getfuelEconomyHwy());
                System.out.println(car.getseatingCapacity());
                System.out.println(car.getcargoVolume());



                System.out.println();

                System.out.println(car);
                System.out.println(truck);
                System.out.println(minivan);
            }
        }
```