**package** week3src;

**public** **class** Car {

//instance variables

**private** String model;

**private** **int** tankSize;

**private** **double** manfMPG;

**private** Name name;

//constructor

**public** Car(String model, **int** tank, **double** mpg, Name ownerName){

**this**.model = model;

tankSize = tank;

manfMPG = mpg;

name = ownerName;

name.addCar(**this**);

}

//set value of model

**public** **void** setModel(String model) {

**this**.model = model;

}

//Return model

**public** String getModel() {

**return** model;

}

//set value of model

**public** **void** setTankSize(**int** tank) {

tankSize = tank;

}

//Return tankSize

**public** **int** getTankSize() {

**return** tankSize;

}

//estimate distance car can travel

**public** **double** estimateDistance(){

//there are 0.22 gallons per litre

**return** tankSize \* manfMPG \* 0.22;

}

//set the owner name

**public** **void** setOwner(Name ownerName) {

name = ownerName;

}

//Return the ownerName

**public** Name getOwner() {

**return** name;

}

//tankBigger returns weather the fuel consumption is efficient, normal or below average depending upon tankSize

**public** **boolean** tankBigger(**int** size) {

**if** (tankSize > size) {

System.***out***.println("inefficient fuel useage");

}**else** **if** (tankSize < size ) {

System.***out***.println("good fuel consumption");

**return** **true**;

}**else** {

System.***out***.println("average consumer");

}

**return** **false**;

}

}

**package** week3src;

**import** java.util.ArrayList;

**import** java.util.List;

**public** **class** Name {

**private** String firstName;

**private** String middleName;

**private** String surname;

**private** List<Car> carsOwned;

**public** Name(String fname, String mname, String sname) {

**this**.firstName = fname;

middleName = mname;

surname = sname;

carsOwned = **new** ArrayList<Car>();

}

**public** Name (String fullname) {

String[] nameSplit = fullname.split(" ");

**this**.firstName = nameSplit[0];

middleName = nameSplit[1];

surname = nameSplit[2];

}

**public** String getFirstAndLastName() {

**return** firstName + " " + surname;

}

**public** String getLastCommaFirst() {

**return** surname + ", " + firstName;

}

**public** String getFullName() {

**if** (middleName != "") {

**return** firstName + " " + middleName + " " + surname;

}**else** {

**return** firstName + " " + surname;

}

}

**public** **void** addCar(Car car) {

**this**.carsOwned.add(car);

}

**public** **void** removeCar(Car car) {

**this**.carsOwned.remove(car);

}

**public** List<Car> getOwnedCars() {

**return** carsOwned;

}

}

package week3Testsrc;

import static org.junit.jupiter.api.Assertions.\*;

import org.junit.jupiter.api.Test;

import week3src.Car;

import week3src.Name;

class week3Test {

Name me = new Name ("Mike", "", "Lloyd");

Car mycar = new Car ("Ford", 2, 20.2, me);

Car mySecondCar = new Car ("Volvo", 3, 16.7, me);

Car myThirdCar = new Car ("Ferrari", 6, 14.3, me);

@Test

void estimateDistanceTest() {

assertEquals(mycar.estimateDistance(), 2 \* 20.2 \* 0.22);

}

@Test

void tankBiggerTest() {

assertTrue(mycar.tankBigger(30));

}

@Test

void getLastCommaFirstTest() {

assertEquals("Lloyd, Mike", me.getLastCommaFirst());

}

@Test

void thirdCarNameTest() {

assertTrue(me.getOwnedCars().contains(myThirdCar));

}

}

