Reflection log : Vehicles
Credit name : Object oriented programing 2

```
package Vehicles;

public abstract class vehiclez {

    private double cargosize;
    private double tirenum;
    private double fueleconcity;
    private double fueleconhwy;
    private double seatingcapacity;


    public vehiclez (double cs, double tn, double fec, double feh, double sc)
    {

        cargosize = cs;
        tirenum = tn;
        fueleconcity = fec;
        fueleconhwy = feh;
        seatingcapacity = sc;

    }
```

I began by setting up the variables for vehicles, then made its method

```
public String toString()
{
    String vehiclezzstuff;

    vehiclezzstuff = "Cargosize is" + cargosize
            + " \n and tire number is " + tirenum
            + " \n and the fuel economy for city is " + fueleconcity
            + " \n and fuel economy for highways is " + fueleconhwy
            + " \n and seating capacity is " + seatingcapacity;


    return vehiclezzstuff;
}
```

After I set up the toString for it

```
//obtainers
public Double getcargosize()
{
    return(cargosize);
}

public Double gettirenum()
{
    return(tirenum);
}

public Double getfueleconC()
{
    return(fueleconcity);
}

public Double getfueleconH()
{
    return(fueleconhwy);
}

public Double getseatingcapa()
{
    return(seatingcapacity);
}
```

Then I set up my get methods to obtain the variables

```
//set thingies

public Double setcargosize(Double E)
{
    cargosize = E;
    return(cargosize);
}

public Double settirenum(Double j)
{
    tirenum = j;
    return(tirenum);
}

public Double setfueleconC(Double k)
{
    fueleconcity = k;
    return(fueleconcity);
}

public Double setfueleconH(Double l)
{
    fueleconhwy = l;
    return(fueleconhwy);
}

public Double setseatingcapa(Double a)
{
    seatingcapacity = a;
    return(seatingcapacity);
}
```

And I made my set methods

```java
package Vehicles;

public class car extends vehiclez{

    private boolean trunksenser;

    public car(double cs, double tn, double fec, double feh, double sc, boolean ts) {
        super(cs, tn, fec, feh, sc);

        trunksenser = ts;
    }

    public Boolean gettrunksenser()
    {
        return(trunksenser);
    }

    public Boolean settrunksenser(boolean ahhhhh)
    {
        trunksenser = ahhhhh;
        return(trunksenser);
    }

    public String toString()
    {
        String minivanns;

        minivanns = super.toString()
                + "\n if it has a trunksenser " + trunksenser;

        return minivanns;
    }


}
```

I then made the car class, and equipped it to check if the vehicles had a trunk senser, then made its toString method.

```java
package Vehicles;

public class minivan extends vehiclez{

    private boolean sunroof;
    private boolean backseatent;

    public minivan(double cs, double tn, double fec, double feh, double sc, boolean sr, boolean bse) {
        super(cs, tn, fec, feh, sc);
        sunroof = sr;
        backseatent = bse;

    }

    //obtainers

    public Boolean getsunroof()
    {
        return(sunroof);
    }

    public Boolean getBSE()
    {
        return(backseatent);
    }



    public Boolean setBSE(boolean bs)
    {
        backseatent = bs;
        return(backseatent);
    }

    public Boolean setsunroof(boolean sfr)
    {
        sunroof = sfr;
        return(sunroof);
    }
public Boolean setBSE(boolean bs)
{
    backseatent = bs;
    return(backseatent);
}

public Boolean setsunroof(boolean sfr)
{
    sunroof = sfr;
    return(sunroof);
}


public String toString()
{
    String minivanns;

    minivanns = super.toString()
            + "\n if it has a sunroof " + sunroof
            + "\n and if it has back seat entertainment " + backseatent;

    return minivanns;
}
```

I then made the minivan class, and equipped it to check if the vehicles had backseat entertainment, and if it had a sunroof, then made its toString method.

```java
package Vehicles;

public class truck extends vehiclez{

    private double backbed;

    public truck(double cs, double tn, double fec, double feh, double sc, double  b) {
        super(cs, tn, fec, feh, sc);
        backbed = b;

    }

    public Double getBBS()
    {
        return(backbed);
    }

    public Double setBBS(double bsb)
    {
        backbed=bsb;
        return(backbed);

    }


    public String toString()
    {
        return(super.toString()
                + "\n the size of the bed is " + backbed);
    }

}
```

Finally I made the truck class and equipped it with the methods

```java
public static void main(String[] args) {
    // TODO Auto-generated method stub

    double cargosize =11;
    double tirenum = 13;
    double fueleconcity = 14;
    double fueleconhwy = 15;
    double seatingcapacity = 16;
    boolean sunroof =false;
    boolean backseatent =true;
    boolean trunksenser = false ;
    double backbed = 8;

    car carr = new car(4,4,1,2,5,true);
    truck trunnnk = new truck(2,7,5,4,9,3);
    minivan mini = new minivan(2,7,5,4,9,true,false);

    System.out.println(carr);
    System.out.println(" ");
    System.out.println(trunnnk);
    System.out.println(" ");
    System.out.println(mini);
    System.out.println(" ");




    car usercar = new car(0, 0, 0, 0, 0, false);
    usercar.settrunksenser(trunksenser);
    usercar.settirenum(tirenum);
    usercar.setcargosize(cargosize);
    usercar.setfueleconC(fueleconcity);
    usercar.setfueleconH(fueleconhwy);
    usercar.setseatingcapa(seatingcapacity);
    System.out.println(usercar);
    System.out.println(" ");
```

```
truck usertruck = new truck(0, 0, 0, 0, 0,0);
usertruck.settirenum(tirenum);
usertruck.setcargosize(cargosize);
usertruck.setfueleconC(fueleconcity);
usertruck.setfueleconH(fueleconhwy);
usertruck.setseatingcapa(seatingcapacity);
usertruck.setBBS(backbed);
System.out.println(usertruck);
System.out.println(" ");

minivan usermini = new minivan(0, 0, 0, 0, 0, false, false);
usermini.setBSE(backseatent);
usermini.setsunroof(sunroof);
usermini.settirenum(tirenum);
usermini.setcargosize(cargosize);
usermini.setfueleconC(fueleconcity);
usermini.setfueleconH(fueleconhwy);
usermini.setseatingcapa(seatingcapacity);
System.out.println(usermini);
System.out.println(" ");



System.out.println("this is usercar cargo size " + usercar.getcargosize());
System.out.println(" ");
System.out.println("this is usercar fuel economy city " + usercar.getfueleconC());
System.out.println(" ");
System.out.println("this is usercar fuel economy highway " + usercar.getfueleconH());
System.out.println(" ");
System.out.println("this is usercar cargo seating capacity " + usercar.getseatingcapa());
System.out.println(" ");
System.out.println("this is usercar tirenumber " + usercar.gettirenum());
System.out.println(" ");
System.out.println("this is usercar if it has trucksenser " + usercar.gettrunksenser());
System.out.println(" ");
System.out.println("this is usermini if back seat entertainment " + usermini.getBSE());
System.out.println(" ");
System.out.println("this is usermini if sunroof " + usermini.getsunroof());
System.out.println(" ");
System.out.println("this is usertruck bedsize " + usertruck.getBBS());
```

Last of all I tested each of the classes for their checks along with the gets and sets