

# EE2510 - Lab 4: You're out of the will

1 week total

## **Goals:**

1. Creating and using classes and objects
2. Class inheritance

## **Assignment Description:**

### **Overview:**

Create a set of classes of vehicles

### **Interface:**

A test program is available on the website. Your classes must create the proper output.

### **Structural requirements:**

You must use the UML described classes

Additional functions may be needed or desired

**NO** global variables

## **Grading:**

Functionality

Structure

Comments – readability

Documentation

Cleanliness (beauty) of the code

On-time

## **Deliverables:**

All code (except test code)

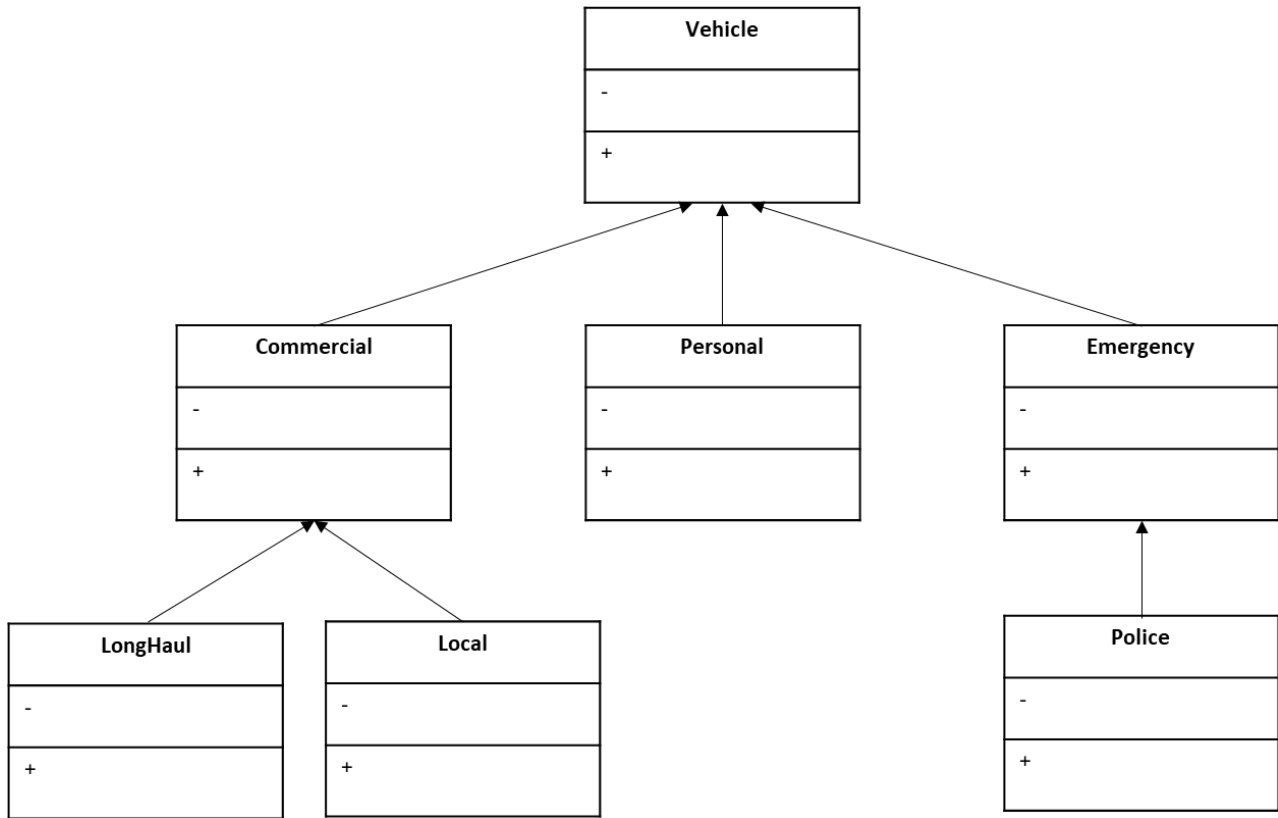
Eclipse “project explorer” capture showing all files in the project

Screen capture of program run

Hardcopy – no need to put into a PowerPoint or pdf, just print/label/staple

**Due: 5:00 pm 1 day after week 8 lab – in the box outside my office**

# Introduction to Object Oriented Programming



```

class Vehicle {
    - plate_no : int
    - num_wheels : int
    - speed : int
    - max_speed : int
    - location : vector<int>

    + Vehicle()
    + Vehicle(pnum : int, nwheels : int, maxsp : int)
    + Vehicle(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>)

    + setVehicle(pnum : int, nwheels : int, maxsp : int) : void
    + setVehicle(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>): void

    + setPlate(pnum : int) : void
    + setNumWheels(nwheels : int) : void
    + setMaxSpeed(maxsp : int) : void
    + setSpeed(spd : int) : void
    + setLocation(loc : vector<int>) : void

    + getPlate(void) : int
    + getNumWheels(void) : int
    + getMaxSpeed(void) : int
    + getSpeed(void) : int
    + getLocation(void) : vector<int>
}
    
```

## Introduction to Object Oriented Programming

<b>Commercial</b>
- co_name: string
+ Commercial() + Commercial(pnum : int, nwheels : int, maxsp : int) + Commercial(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, name : string)  + setCommercial(pnum : int, nwheels : int, maxsp : int) : void + setCommercial(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, name : string) : void  + setCoName(name : string) : void + getCoName(void) : string

<b>Personal</b>
- num_passengers: int
+ Personal() + Personal(pnum : int, nwheels : int, maxsp : int) + Personal(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, num : int)  + setPersonal(pnum : int, nwheels : int, maxsp : int) : void + setPersonal(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, num : int) : void  + setNumPass(num : int) : void + getNumPass(void) : int

<b>Emergency</b>
- siren_on: string
+ Emergency() + Emergency(pnum : int, nwheels : int, maxsp : int) + Emergency(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, siren : string)  + setEmergency(pnum : int, nwheels : int, maxsp : int) : void + setEmergency(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, siren : string) : void  + setSiren(siren : string) : void + getSiren(void) : string

## Introduction to Object Oriented Programming

<b>Police</b>
- on_duty: bool
+ Police() + Police(od : bool) + Police(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, siren : string, od : bool)  + setPolice(od : bool) : void + setPolice(pnum : int, nwheels : int, maxsp : int) : void + setPolice(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, siren : string, od : bool) : void  + setOnDuty(od : bool) : void + getOnDuty(void) : bool

<b>Local</b>
- warehouse: string - delivery: string - on_board: bool
+ Local() + Local(ware : string, deliv : string, ob : bool) + Local(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, name : string, ware : string, deliv : string, ob : bool)  + setLocal(ware : string, deliv : string, ob : bool) : void + setLocal(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, name : string, ware : string, deliv : string, ob : bool) : void  + setWarehouse(ware : string) : void + setDelivery(deliv : string) : void + setOnBoard(ob : bool) : void  + getWarehouse(void) : string + getDelivery(void) : string + getOnBoard(void) : bool

<b>LongHaul</b>
- src_long_lat: vector<double> - dst_long_lat: vector<double> - tar_weight: int
+ LongHaul() + LongHaul(vector<src : double>, dst : vector<double>, w : int) + LongHaul(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, name : string, src : vector<double>, dst : vector<double>, w : int)  + setLongHaul(src : vector<double>, dst : vector<double>, w : int) : void + setLongHaul(pnum : int, nwheels : int, maxsp : int, spd : int, loc : vector<int>, name : string, src : vector<double>, dst : vector<double>, w : int) : void  + setSrc(src : vector<double>) : void + setDst(dst : vector<double>) : void + setTarWeight(w : int) : void  + getSrc(void) : vector<double> + getDst(void) : vector<double> + getTarWeight(void) : int