Polymorphism

The Unit 5 takes is to write a Python program with polymorphism that is usable within the summative assessment for the driverless car. The code has been developed to return the dual carriageway speed limit for different types of vehicles.

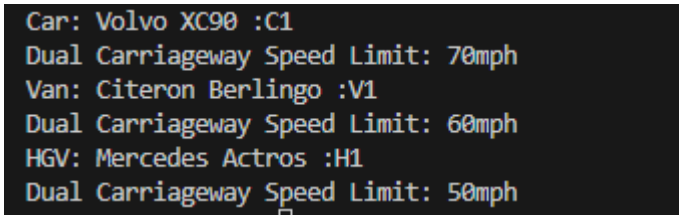
The vehicles included are:

Type	Reg	Make	Model	Speed Limit
Car	C1	Volvo	XC90	70mph
Van	V1	Citroen	Berlingo	60mph
HGV	H1	Mercedes	Actros	50mph

The method used for each class was dual_carriageway_speedlimit which returns the relevant speed limit for each class of vehicle.

Output

The script returns the following output, correctly:



The code for the script can be found in appendix 1.

Appendix 1 – Code

```
class Vehicle:
    """Represents a vehicle"""

    def __init__(self,  reg, make, model):
        self.cat= type(self)
        self.reg = reg
        self.make = make
        self.model = model


    def __str__(self):
        """Displays the properties of a vehicle"""

        #defines the category of the vehicle by determining the component
class
        if isinstance(self, Car):
            category = 'Car'
        elif isinstance(self, Van):
            category= 'Van'
        else:
            category='HGV'

        vehicle_details= category+': ' + self.make +' ' + self.model + ' :' +
self.reg

        return vehicle_details




class Car(Vehicle):
    """represent a car"""

    def dual_carriageway_speedlimit(self):
        """returns the speed limit on a dual carrige way"""
        return ('70mph')

class Van(Vehicle):
    """represent a van"""
    def dual_carriageway_speedlimit(self):
        """returns the speed limit on a dual carrige way"""
        return ('60mph')

class HGV(Vehicle):
    """represent a HGV"""
```

```
    def dual_carriageway_speedlimit(self):
        """returns the speed limit on a dual carrige way"""
        return ('50mph')



#Main
van=Van('V1', 'Citroen', 'Berlingo')
car=Car('C1', 'Volvo','XC90')
truck=HGV('H1', 'Mercedes', 'Actros' )

for vehicle in (car,van,truck):

    print (vehicle)
    print ('Dual Carriageway Speed Limit: ' +
vehicle.dual_carriageway_speedlimit())
```