

Lab Exercises Chapter 9 Solutions

Declare a new class called Vehicle without any attributes and methods

```
class Vehicle :
```

Add some attributes to the Vehicle class such as Name, Speed, Mileage

```
class Vehicle :  
    def __init__(self, name, speed, mileage):  
        self.name = name  
        self.speed = speed  
        self.mileage = mileage
```

Add a method to the Vehicle class to return the vehicle name

```
class Vehicle :  
    def __init__(self, name, speed, mileage):  
        self.name = name  
        self.speed = speed  
        self.mileage = mileage  
    def getName(self):  
        return self.name
```

Create a child class called Car that will inherit all the variables and methods of the Vehicle class

```
class Car (Vehicle):  
    def __init__ (self, name, speed, mileage):  
        super().__init__(name, speed, mileage)
```

Create a child class called Taxi

```
class Taxi (Vehicle):  
    def __init__ (self, name, speed, mileage):  
        super().__init__(name, speed, mileage)
```

Add a method to the Taxi class to collect the fare. For example, fare is calculated by mileage * 0.20

```
class Taxi (Vehicle):  
    def __init__ (self, name, speed, mileage):  
        super().__init__(name, speed, mileage)  
    def getFare(fare):  
        self.fare = mileage * 0.20
```

Let's test it...

Get the data from the user and assign to variables rn and mil

```
rn = input("Enter route name: ")
mil = int(input("Enter Mileage: "))
```

Create object then pass data we captured from the user (name, speed, mileage)

```
route = Taxi(rn, 0, mil)
```

Call object method to calculate fare, pass the mileage captured from user to the getFare() method

```
route.getFare(mil)
```

Print results

Use the getName() method to get return the name. We can just reference the attribute using the dot notation (route.mileage, and route.fare)

```
print("\n\nRoute name is %s" % (route.getName()))
print("Mileage is %d" % (route.mileage))
print("The fare is $%f" % (route.fare))
```

When we run the program, we get this output

```
Enter route name: test route
Enter Mileage: 12
```

```
Route name is test route
```

```
Mileage is 12
```

```
The fare is $2.400000
```

(12 x 0.2 = 2.4)