```python
#OOP Exercise 1: Create a Vehicle class with max_speed and mileage As Data Members
class vehicles:
  def __init__(self,maxspeed,mileage):
    self.maxspeed= maxspeed
    self.mileage= mileage

p1 = vehicles("200 / km" , "15 km/ltr")

print(p1.maxspeed)
print(p1.mileage)
```

```
200 / km
15 km/ltr
```

```python
#OOP Exercise 2: Create a Vehicle class without any variables and method
class Vehicle:
    pass

#OOP Exercise 3: Create a child class Bus that will inherit all of the variables and methods of the Vehicle class
class vehicles:
    def __init__(self, name, maxspeed, mileage):
        self.name=name
        self.maxspeed= maxspeed
        self.mileage= mileage

class Bus(vehicles):
    pass

School_bus = Bus("School Volvo", 180, 12)
car=Bus("Arjun",10,1)

print("Vehicle Name:", School_bus.name, "Speed:", School_bus.maxspeed, "Mileage:", School_bus.mileage)
```

```
Vehicle Name: School Volvo Speed: 180 Mileage: 12
```

```python
#OOP Exercise 4: Define property that should have the same value for every class instance
class Vehicle:
    color = 'white'
    def __init__(self, name, max_speed, mileage):
        self.name = name
        self.max_speed = max_speed
        self.mileage = mileage

class Bus(Vehicle):
    pass
```

```
class Car(Vehicle):
    pass

Bus('ai', 120, 2000)
Bus.color
```

```
'white'
```

```
#OOP Exercise 5: Class Inheritance
class Vehicle:
    def __init__(self, name, mileage, capacity):
        self.name = name
        self.mileage = mileage
        self.capacity = capacity

    def fare(self):
        return self.capacity * 100

class Bus(Vehicle):

    def fare(self):
        fare_car = self.capacity * 100
        total_fare = fare_car + (0.1 *fare_car)
        return total_fare

School_bus = Bus("School Volvo", 12, 50)
print("Total Bus fare is:", School_bus.fare())
```

```
Total Bus fare is: 5500.0
```

```
#OOP Exercise 6: Determine which class a given Bus object belongs to
(Check type of an object)
class Vehicle:
    def __init__(self, name, mileage, capacity):
        self.name = name
        self.mileage = mileage
        self.capacity = capacity

class Bus(Vehicle):
    pass

School_bus = Bus("School Volvo", 12, 50)
print(type(School_bus))
```

```
<class '__main__.Bus'>
```