Practical – 4 : OOP Concepts

1. Create a Vehicle class without any variables and methods

2. Create a Vehicle class with max_speed and mileage instance attributes

3. Create a child class Bus that will inherit all of the variables and methods of the Vehicle class

4.Create a Bus class that inherits from the Vehicle class. Give the capacity argument of Bus.seating_capacity() a default value of 50.

5.Define property that should have the same value for every class instance

6. Create a Bus child class that inherits from the Vehicle class. The default fare charge of any vehicle is seating capacity * 100. If Vehicle is Bus instance, we need to add an extra 10% on full fare as a maintenance charge. So total fare for bus instance will become the final amount = total fare + 10% of the total fare.

7. Determine which class a given Bus object belongs to (Check type of an object)

8. Determine if School_bus is also an instance of the Vehicle class.

Code:

```
class Vehicle:
    pass


class Vehicle:
def __init__(self, max_speed, mileage):
self.max_speed = max_speed
self.mileage = mileage


modelX = Vehicle(240, 18)
print(modelX.max_speed, modelX.mileage)


class Vehicle:

def __init__(self, name, max_speed, mileage):
        self.name = name
self.max_speed = max_speed
self.mileage = mileage


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

```
defseating_capacity(self, capacity):
        return f"The seating capacity of a {self.name} is {capacity}
passengers"


class Vehicle:

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


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):
    pass


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


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)


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)
```

Output :

```
240 18
Total Bus fare is: 5000

Executed in: 0.031 sec(s)
Memory: 4284 kilobyte(s)
```