

Programming Assignment 4 – Chapter 9

Instructions

a.

Implement a class `Car` with the following properties. A car has a certain fuel efficiency (measured in miles/gallon) and a certain amount of fuel in the gas tank. The efficiency is specified in the constructor, and the initial fuel level is 0. Supply a method `drive` that simulates driving the car for a certain distance, reducing the fuel level in the gas tank, and methods `getGasLevel`, to return the current fuel level, and `addGas`, to tank up. Sample usage:

```
myHybrid = Car(50) # 50 miles per gallon
myHybrid.addGas(20) # Tank 20 gallons
myHybrid.drive(100) # Drive 100 miles
print(myHybrid.getGasLevel()) # Print fuel remaining
```

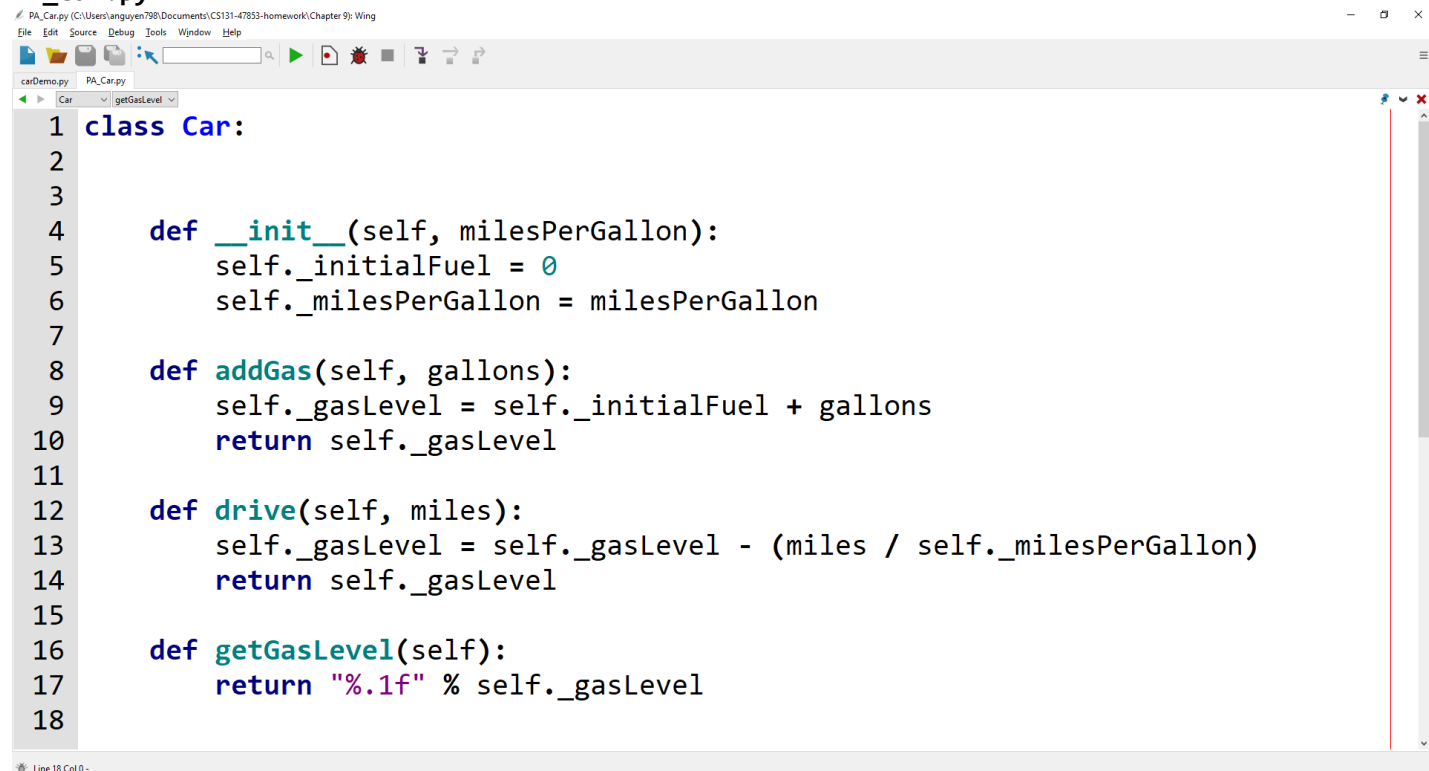
Sample Output

18.0

>>>

Code

PA_Car.py



```
1 class Car:
2
3
4     def __init__(self, milesPerGallon):
5         self._initialFuel = 0
6         self._milesPerGallon = milesPerGallon
7
8     def addGas(self, gallons):
9         self._gasLevel = self._initialFuel + gallons
10        return self._gasLevel
11
12    def drive(self, miles):
13        self._gasLevel = self._gasLevel - (miles / self._milesPerGallon)
14        return self._gasLevel
15
16    def getGasLevel(self):
17        return "%.1f" % self._gasLevel
18
```

carDemo.py (import PA_Car.py Car class)

```
carDemo.py (C:\Users\anguyen798\Documents\CS131-47853-homework\Chapter 9\ Wing
File Edit Source Debug Tools Window Help
carDemo.py PA_Car.py
(bottom)
1 from PA_Car import Car
2
3 def main() :
4
5     myHybrid = Car(50) # 50 miles per gallon
6     myHybrid.addGas(20) # Tank 20 gallons
7     myHybrid.drive(100) # Drive 100 miles
8     print(myHybrid.getGasLevel()) # Print fuel remaining
9
10
11 main()
12
```

Line 12 Col 0 -

Output

Python Shell: Wing

```
Python Shell
Commands execute without debug. Use arrow keys for history.
Python 3.9.7 (default, Sep 16 2021, 16:59:28) [MSC v.1916 64 bit (AMD64)]
Type "help", "copyright", "credits" or "license" for more information.
>>> [evaluate carDemo.py]
18.0
```

Lab 9 – Written Code

PA_Car.py

```
class Car:
```

```
    def __init__(self, milesPerGallon):
        self._initialFuel = 0
        self._milesPerGallon = milesPerGallon

    def addGas(self, gallons):
        self._gasLevel = self._initialFuel + gallons
        return self._gasLevel

    def drive(self, miles):
        self._gasLevel = self._gasLevel - (miles / self._milesPerGallon)
        return self._gasLevel

    def getGasLevel(self):
        return "%.1f" % self._gasLevel
```

carDemo.py

```
from PA_Car import Car
```

```
def main() :
```

```
    myHybrid = Car(50) # 50 miles per gallon
    myHybrid.addGas(20) # Tank 20 gallons
    myHybrid.drive(100) # Drive 100 miles
    print(myHybrid.getGasLevel()) # Print fuel remaining
```

```
main()
```