FIU
Knight Foundation School of Computing and Information Sciences

COP 3337: Computer Programming II
Assignment – I: Defining Classes
Due Date & Time: Sunday August 28, 2022, 11:59 pm
Instructor: Ahmad Waqas, PhD

Instructions:

- Zip the complete project and submit the .zip file.
- The general rubrics are given below:

Description	Max. Marks
Coding style Use the best practices for writing the code. The code is well organized and very easy to follow.	20%
Logic Student has used the effective programming logic for solution and demonstrates the appropriate concept in respective task.	60%
Results The program is error-free and generates the expected results as per the specifications.	20%

Task:

Define a class called `Vehicle` that will be used to check the amount of fuel left in a vehicle after traveling a certain distance. The class should have the instance variable `tankSize` to store the initial size of the tank and `efficiency` to store initial efficiency of the vehicle. Set to zero the variable `fuelInTank` that is used to store the initial amount of fuel in a tank. Include accessor methods that returns `tankSize`, `efficiency` and `fuelInTank`. Include an accessor method `availableTankCapacity` that calculates how much fuel can be filled depending on the fuel existing in the tank and the tank's capacity.

Include a mutator method `addPetrol` to add petrol in the tank. This method receives number of gallons to add in the tank and checks the tank's capacity before adding the petrol. If the available tank's capacity is less than the amount of gallon received to fill in the tank, this will print an error message and adds the petrol otherwise.

Also, include a method `driveTo` that returns what distance can be traveled with the available fuel and provided efficiency.

Use your class with a test program. You should decide which variables should be public, if any. Also, define if any other method(s) are needed.

A sample output of the program is given below:

```
Enter tank size of your car:
17
Enter the efficiency of the car:
21.5
Fuel In Tank = 0.0
Total Capacity of Tank = 17.0
Fuel Efficiency = 21.5
Available Capacity of Tank = 17.0
How much gallons of Petrol to add:
16.5
Adding 16.5 gallons fuel to the tank.
Fuel In Tank = 16.5 gallons
You can travel 354.75 miles with available fuel.
```

Sample Output