

Program Description

This program calculates car efficiency.
Detail is included in the header of the script

Program Source Code

Welcome lab2.py × lab1_new.py

lab2.py > ...

```
1  #-----
2  # Program Name: lab2.py
3  # Program Description:
4  #     See Below
5  #
6  #
7  #
8  # @Author: Sheng Lim
9  # @Date: 6/25/2023
10 #
11 #-----
12 # INPUT
13 #-----
14 # The program asked the user to enter below:
15 #
16 # 1. Car gas tank's capacity in gallons.
17 # 2. Gas mileage per gallon (MPG)
18 # 3. Gas price per gallon.
19 #
20 #-----
21 # FORMULAS
22 #-----
23 # There are 2 formulas we can use:
24 #
25 # 1. Cost of driving 100 miles =100/Mileage x Price
26 #
27 # For example, if the car runs 20 miles per gallon, each gallon costs $5.
28 # That means, $5 can go 20 miles. Then $25 can go 100 miles.
29 #
30 # Let's verify with the formula:
31 # To run 100 miles, the cost is  $100/20 \times 5 = \$25$ 
32 #
33 # 2. Distance=Capacity x Gas Mileage
34 #
35 # if the tank capacity is 10 gallons. Each gallon can go 20 miles.
36 # The distance =  $10 \times 20 = 200$  miles.
37 #
38 #-----
39 # OUTPUT
40 #-----
41 #The program will print out below:
42 #
43 # 1. Cost for driving 100 miles.
44 # 2. Distance of full tank can go.
45 # 3. Tell how efficient the car is, based on below conditions:
46 #     1. MPG less than 30, "Not efficient".
```

```
Welcome  lab2.py  X  lab1_new.py
lab2.py > ...
47  # 2. MPG between 30 and 40, "Average".
48  # 3. MPG between 40 and 50, "Efficient".
49  # 4. MPG greater than 50, "Very Efficient".
50  #-----
51  from datetime import datetime
52
53  name="Sheng Lim"
54  lab_name="Lab 2 - Car Mileage"
55  current_time=datetime.now()
56  current_time_in_request_format=current_time.strftime("%b-%d-%Y %a (%I:%M:%S%p)")
57
58
59  print("{:16}".format("Name"),":", "CNET-142", name)
60  print ("{:16}".format("Lab"), ":", lab_name)
61  print("{:16}".format("Current Time"), ":", current_time_in_request_format)
62
63
64  # Obtain User Inputs
65  gas_tank_capacity = float(input("Enter the capacity of the car's gas tank (in gallons):"))
66  mpg= float(input("Enter car's miles per gallon:"))
67  gas_price_per_gallon= float(input("Enter price per gallon:"))
68
69  cost_per_100_miles = round(100/mpg*gas_price_per_gallon,2)
70
71  distance_per_full_tank= round(gas_tank_capacity*mpg, 2)
72
73  # Calculate the car's efficiency
74  if mpg < 30:
75  |   efficiency = 'It\'s not fuel efficient car.'
76  elif mpg < 40:
77  |   efficiency = 'It\'s average fuel efficient car.'
78  elif mpg < 50:
79  |   efficiency = 'It\'s fuel efficient car.'
80  else:
81  |   efficiency = 'It\'s very fuel efficient car'
82
83
84  # Print the result
85  print("Cost for driving 100 miles is $", cost_per_100_miles)
86  print("Distance on a tank of gas is", distance_per_full_tank)
87  print("Your car MPG is", mpg, efficiency)
88
```

Test Case #1

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL 1: Python
Mac-mini:lab2 fiber$ /Applications/Xcode.app/Contents/Developer/usr/bin/python3 /Users/fiber/Documents/CNET-142-04/lab2/lab2.py
Name      : CNET-142 Sheng Lim
Lab       : Lab 2 - Car Mileage
Current Time : Jun-25-2023 Sun (09:55:07PM)
Enter the capacity of the car's gas tank (in gallons):18.5
Enter car's miles per gallon:33
Enter price per gallon:3.89
Cost for driving 100 miles is $ 11.79
Distance on a tank of gas is 610.5
Your car MPG is 33.0 It's average fuel efficient car.
Mac-mini:lab2 fiber$
```

Test Case #2

```
Name      : CNET-142 Sheng Lim
Lab       : Lab 2 - Car Mileage
Current Time : Jun-25-2023 Sun (09:56:51PM)
Enter the capacity of the car's gas tank (in gallons):18.5
Enter car's miles per gallon:45
Enter price per gallon:3.89
Cost for driving 100 miles is $ 8.64
Distance on a tank of gas is 832.5
Your car MPG is 45.0 It's fuel efficient car.
Mac-mini:lab2 fiber$
```

Test Case #3

```
Name      : CNET-142 Sheng Lim
Lab       : Lab 2 - Car Mileage
Current Time : Jun-25-2023 Sun (09:57:50PM)
Enter the capacity of the car's gas tank (in gallons):18.5
Enter car's miles per gallon:60
Enter price per gallon:3.89
Cost for driving 100 miles is $ 6.48
Distance on a tank of gas is 1110.0
Your car MPG is 60.0 It's very fuel efficient car
Mac-mini:lab2 fiber$
```