IF100 – Fall 2017
Homework 2
Due November 1st 2017 Wednesday 23:55 (Sharp Deadline)

Introduction

The aim of this homework is to practice on if statements. The use of if statement is due to the nature of the problem; that is, you cannot finish this homework without using the if statements.

Description

In this homework, you will write a Python program that computes and displays the information for a company which rents vehicles to its customers. Specifically, your program will compute and display the amount of the money charged for a particular customer, for that customer's vehicle rental. The bill will be based on the vehicle segment, number of rental days, and gear and fuel types.

Your program will start with displaying a welcome message that explains what it is about. Then, the user will first input his/her name. After that, four other prompts will be received consecutively, mentioning the name of the user. The first one is the vehicle segment, which can be *Economic*, *Comfort*, *Prestige*, *Premium* or *Luxury*. The second one is the number of days the vehicle is rented, which should be a non-zero positive integer. The other two are the type of the gear, which can either be *Automatic* or *Manual*; and the type of the fuel, which can either be *Petrol* or *Diesel*. After the user enters all the inputs, an input check should be performed by your program for each of the vehicle segment, number of rental days, gear and fuel types. If all the inputs are correctly entered, then your program will calculate the amount of money to be billed. This value will be computed via the formula given below, and by using the charge information provided in the below-given table. At the end, your program will display the amount of the money charged to the user, by referring to the name of the user. Whenever an input is determined to be erroneous, your program should display an appropriate error message, not taking into consideration the latter inputs by means of being erroneous or not.

charged money = (number of rental days) ×
(charge of segment + charge of gear type + charge of fuel type)

FEATURE		CHARGE (TL)
Vehicle Segment	Economic	250
	Comfort	400
	Prestige	600
	Premium	750
	Luxury	1150
Gear Type	Automatic	150
	Manual	50
Fuel Type	Petrol	100
	Diesel	200

Please see "Sample Runs" section in order to understand the flow of the program, the inputs and the outputs in a better way.

Input and Output

The inputs of the program and their order are explained above. It is extremely important to follow this order since we automatically process your programs and altered orders cause too much trouble. ***Thus your work won't be graded unless the order is entirely correct***. Please see "Sample Runs" section for some examples.

There are five inputs to your program, in the order given below:

1. Name of the user (of type string)
2. Segment of the vehicle (of type string)
3. Number of rental days (of type integer)
4. Gear type (of type string)
5. Fuel type (of type string)

Your program should perform input check for its inputs as listed below. Additionally, the string-typed inputs are to be considered as ***case-sensitive***.

- Vehicle segment must be *Economic*, *Comfort*, *Prestige*, *Premium* or *Luxury*.
- Number of rental days must be a non-zero positive integer.
- Gear type must either be *Automatic* or *Manual*.
- Fuel type must either be *Petrol* or *Diesel*.

If the user enters an erroneous input, then your program should display an appropriate error message and it should not take into consideration the latter inputs. If there are more than one input check errors, then your program should follow the input order and ***display only the first invalid input***.

There is only one output of your program, the amount of money charged to the user. This output should be of format:

"*name*, *charged money* TL is charged for your vehicle rental."

Sample Runs

Below, we provide some sample runs of the program that you will develop. The *italic* and **bold** phrases are inputs taken from the user. The introductory line (This program bla bla bla...) is intentionally left incomplete. You are expected to use your imagination and creativity there to introduce your program. You may also change the prompts of the inputs, but you have to display the required information in the same order as here.

Sample Run 1 (*All inputs are valid***)**

```
This program bla bla bla...

Please enter your name: Duygu
Duygu, please enter the segment of the vehicle: Economic
Duygu, please enter the number of rental days: 10
Duygu, please enter the gear type: Automatic
Duygu, please enter the fuel type: Petrol

Duygu, 5000 TL is charged for your vehicle rental.
```

Sample Run 2 (*All inputs are valid***)**

```
This program bla bla bla...

Please enter your name: İnanç
İnanç, please enter the segment of the vehicle: Premium
İnanç, please enter the number of rental days: 5
İnanç, please enter the gear type: Manual
İnanç, please enter the fuel type: Diesel

İnanç, 5000 TL is charged for your vehicle rental.
```

Sample Run 3 (*All inputs are valid***)**

```
This program bla bla bla...

Please enter your name: Hüsnü
Hüsnü, please enter the segment of the vehicle: Luxury
Hüsnü, please enter the number of rental days: 7
Hüsnü, please enter the gear type: Automatic
Hüsnü, please enter the fuel type: Diesel

Hüsnü, 10500 TL is charged for your vehicle rental.
```

Sample Run 4 (*Invalid vehicle segment***)**

```
This program bla bla bla…

Please enter your name: Ali
Ali, please enter the segment of the vehicle: prestige
Ali, please enter the number of rental days: 2
Ali, please enter the gear type: Manual
Ali, please enter the fuel type: Petrol

Incorrect vehicle segment!
```

Sample Run 5 (*Invalid vehicle segment***)**

```
This program bla bla bla…

Please enter your name: Ayşe
Ayşe, please enter the segment of the vehicle: Van
Ayşe, please enter the number of rental days: 0
Ayşe, please enter the gear type: Manual
Ayşe, please enter the fuel type: Diesel

Incorrect vehicle segment!
```

Sample Run 6 (*Invalid rental days***)**

```
This program bla bla bla…

Please enter your name: Barış
Barış, please enter the segment of the vehicle: Comfort
Barış, please enter the number of rental days: 0
Barış, please enter the gear type: Manual
Barış, please enter the fuel type: diesel

Incorrect number of rental days!
```

Sample Run 7 (*Invalid gear type***)**

```
This program bla bla bla…

Please enter your name: Ada
Ada, please enter the segment of the vehicle: Premium
Ada, please enter the number of rental days: 12
Ada, please enter the gear type: manual
Ada, please enter the fuel type: diesel

Incorrect gear type!
```

Sample Run 8 (*Invalid fuel type***)**

```
This program bla bla bla…

Please enter your name: Pascal
Pascal, please enter the segment of the vehicle: Luxury
Pascal, please enter the number of rental days: 12
Pascal, please enter the gear type: Automatic
Pascal, please enter the fuel type: Diesell

Incorrect fuel type!
```

Sample Run 9 (*Invalid fuel type***)**

```
This program bla bla bla…

Please enter your name: Volkan
Volkan, please enter the segment of the vehicle: Economic
Volkan, please enter the number of rental days: 1
Volkan, please enter the gear type: Manual
Volkan, please enter the fuel type: diesel

Incorrect fuel type!
```

How to get help?

You may ask questions to TAs, LAs or instructors. Information regarding the office hours of the TAs, LAs and the instructors are available at the SUCourse.

What and where to submit?

You should prepare (or at least test) your program using Python 3.6.x. We will use IDLE with Python 3.6.x while testing your homework.

It'd be a good idea to write your name and lastname in the program (as a comment line of course).

Submission guidelines are below. Some parts of the grading process are automatic. Students are expected to strictly follow these guidelines in order to have a smooth grading process. If you do not follow these guidelines, depending on the severity of the problem created during the grading process, *20 or more penalty points* are to be deducted from your grade.

- Name your *py* file that contains your program as follows:

  "username_HWnumber.py"

  For example: if your SuCourse username is "inancarin", then the name of the *py* file should be: *inancarin_hw2.py*

- Please make sure that this file is the latest version of your homework program.

You may visit the office hours if you have any questions regarding submissions.

General Homework Rules

- Successful submission is one of the requirements of the homework. If, for some reason, you cannot successfully submit your homework and we cannot grade it, your grade will be 0.
- There is NO late submission. You need to submit your homework before the deadline. Please be careful that SUCourse time and your computer time may have a 1-2 minutes differences. You need to take this time difference into consideration.
- Do NOT submit your homework via email or in hardcopy! SUCourse is the only way that you can submit your homework.
- If your code does not work because of a syntax error, then we cannot grade it; and thus, your grade will be 0.
- Having a correct program is necessary, but not sufficient to get the full grade. Comments, meaningful and understandable identifier names, and informative prompts will also affect your grade.
- Please do submit your **own** work only (even if it is not working correctly). It is really easy to find out "similar" programs!
- Plagiarism will not be tolerated. Please check our plagiarism policy given in syllabus of the course.

Good luck!
Duygu Karaoğlan Altop, İnanç Arın, Hüsnü Yenigün