420-LCU-05 Programming in Python - Assignment 1

February 1, 2021

Due Date: Feb 12, 2021 at 23:59

Here are some general requirements that will apply to all of assignments in this course:

1. **Identification section** Do this for *every* Python file in every assignment in this course. This section must be either in a comment, with a '#' preceding each line, or enclosed within triple quotes (''). The grader and I need this section for the *accurate processing of your assignment*. Assignments missing this may lose up to 5% of the total mark.

```
"""
Your Name
420-LCU Computer Programming, Section #
Friday Feb 12, 2021
S. Hilal, instructor
Assignment 1
"""
```

2. Always include additional comments with your code. You do not need to explain every line of your program, but consider using comments for the following situations:
   - A brief explanation of a particular variable's purpose, included on the first line where the variable is defined.
   - A note mentioning any website or person you may have consulted with to help with the assignment.
   - A comment describing any constant value that appears in your code.
3. Submit you assignment in one .py file.
4. Be sure to respect carefully all instructions specified in the assignment.
5. Late assignments are accepted up to 1 week from deadline. But late penalty will be applied.

Assignment Description[1]

Your have a cell phone and after a month of use, you are trying to decide which price plan is the best for your usage pattern. There are 4 plan options available A, B, C, or D.

- All plans have the same base price of $10 per month that should be added to the plan costs indicated below.
- Free minutes are for day time only. Evening and week-end minutes are always at a cost.
- each plan has different costs for daytime minutes, evening minutes and weekend minutes.

Plan	**Costs**		
	Daytime	Evening	Weekend
A	100 free minutes, then 15¢/minute	20¢/minute	25¢/minute
B	200 free minutes, then 20¢/minute	25¢/minute	30¢/minute
C	250 free minutes, then 30¢/minute	35¢/minute	40¢/minute
D	$39 for unlimited minutes.	unlimited	unlimited

Program Menu

Your program will display a simple menu that will ask the user whether s/he wants to evaluate a given cellphone plan or exit the program. Your program continues until the user requests to exit the program.
Your program must display the following Menu:
Welcome to My Cellphone Calculator
1. Evaluate a plan
2. Exit
Enter your selected option :

[1] Adapted from the Canadian Computer Competition, 2005.

Description of Menu Options

1. The program asks the user to input the number of **each type of minutes from current or anticipated usage**. The input will be in the order of daytime minutes, evening minutes and weekend minutes. The program outputs the price for each plan according to the entered usage pattern in the format shown below. The program also determines the cheapest plan and prints an appropriate message. The program returns to main menu after completing the option for one plan.
2. Exit the program.

Example 1

```
Number of daytime minutes? 254
Number of evening minutes? 10
Number of weekend minutes? 60
Plan A costs $50.10
Plan B costs $41.30
Plan C costs $38.70
Plan D costs $49.0
choose Plan C.
```

Example 2

```
Number of daytime minutes? 162
Number of evening minutes? 71
Number of weekend minutes? 71
Plan A costs $51.25
Plan B costs $49.05
Plan C costs $63.25
Plan D costs $49.0
Choose Plan D.
```

Example 3

```
Number of daytime minutes? 260
Number of evening minutes? 20
Number of weekend minutes? 70
Plan A costs $55.5
Plan B costs $48.0
Plan C costs $48.0
Plan D costs $49.0
Choose Plan B or C.
```

Defining constant Variables

Define `constant variables` for the constant values used to represent *each calling plan*. This will make your program more self-explanatory and also easier to modify if values change in the future. For example, to define the first calling plan, your code should contain the following block:

```
BASE_PRICE = 10 # Base price for all plans in dollars.
A_FREE = 100   # Plan_A Number of free daytime minutes per month.
A_DAYTIME = 15 # Plan_A Cost of additional daytime minutes, in cents.
A_EVENING = 20 # Plan_A Cost of evening minutes, in cents.
A_WEEKEND = 25 # Plan_A Cost of weekend minutes, in cents.
```

Some hints for your program:

- To determine the best plan, you will need several `if` statements or you may use any other tools as seen in class.
- Test the given examples and follow the example output as closely as possible.