Goals

By the end of this assignment, you should have had
• practice solving problems using Python
• practice using Python built-in functions
• practice using Python strings, print/input, and for loops

Getting Started

Open a new Editor window and save it as cis122project1-1.py. You should use ONLY Python code that has been covered in textbook readings and class lecture/lab to solve the given problems. Some hints are given at the bottom of this project specification.

Problems

(0) Tip Calculator

Write Python code that will calculate tips for a restaurant bill total. The code will ask the user to enter the total amount of the bill, and then return suggestions for tips at 15%, 18%, and 20% of the total bill. The code should then print each suggestion with an appropriate label and a '$' in front of the suggested amount. For example,

Please enter total bill: 10
Suggested tip at 15% is $1.5.
Suggested tip at 18% is $1.8.
Suggested tip at 20% is $2.0.

Please enter total bill: 15.75
Suggested tip at 15% is $2.36.
Suggested tip at 18% is $2.83.
Suggested tip at 20% is $3.15.

(1) Fancy Name Display

Ever wanted to see your name in stars? For this problem, you're going to write Python code to display your name (and any other information you might wish to include). The code should prompt the user for their name, and then display their name prominently. At a minimum, the Python code should display the name surrounded by * characters. However, you are encouraged to make your display as fancy as you want. A sample name display function might produce the following:

Please enter your name: Luna

************
*   Luna   *
************
(2) Monograms-R-Us

The local bath and body store has decided to add an instant monogram feature (for a low, low price) for customers purchasing bath towels.

Write Python code that asks a user for three inputs: their first name, middle initial, and last name, and prints a string of three initials in "monogram order" (first, last, middle)\(^2\). For example,

Please enter your first name: University
Please enter your middle initial: O
Please enter your last name: Ducks
UDO

(3) Double-Len

Write Python code to determine the number of characters in a string input by a user\(^3\). Print the result with an appropriate label. Then print the result returned by Python built-in function \texttt{len} for the same string. For example,

Please input string to check: testing 1 2 3
Length of input string: 13
Python length for input string: 13

Finishing & submitting your work

When you have completed all of the problems, use the Save command from the IDLE File menu to save the Editor window as a file with the name \texttt{cis122project1-1.py}.

Submit your file via Canvas. You may re-submit your project up until the project deadline (i.e., as long as the submission link is available). Only the final submission will be graded.

Note: as per CIS 122 class policy (see Syllabus), \textit{it is not possible to submit a project after the deadline}. Projects that are not submitted by the deadline will receive a default grade of zero. Two project grades will be dropped at the end of the term, to provide the flexibility you need for busy weeks, individual technical difficulties, misunderstandings, etc. \textit{You do not need to contact the CIS 122 instructional staff about this; it will happen automatically.}

Even if you do not submit a project, you should complete the project and check your work against the posted solution.

Grading Rubric

8 points possible (2 pts. per problem):  

1: Python program written using good style: a comment with the project identification, author, credits, and short description at the top of the program file; comments for each individual problem; code is easy to read, e.g., includes good use of white space. 

1: Code correctly implements the project specification.
HINTS:

(0) Use Python `round` function.

(1) Remember that the ‘*’ operator works for strings.

(2) Think about the Python index operator.

(3) You will need to use the Python sequential operator `for`.