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 cis122project1-2.py. You should use ONLY Python code that has been covered in textbook readings and class lecture/lab to solve the problem.

Problems

(Problems 0 to 2 are adapted from codingbat.com: [http://codingbat.com/python](http://codingbat.com/python))

(0) Given a string, write Python code where, for every character in the original string, there are two characters in a result string. Print the appropriately labeled result string. For example,

Please enter some text: Ducks
Double string: DDuuccckkss

(1) Write Python code that asks a user to enter a string, and then reverses the first and last letters of the string, and prints the resulting string. For example,

Please enter some text: University of Oregon
Letter reverse string: nniversity of OregoU

(2) Given a string name, e.g. 'CIS 122', return a greeting of the form Hello, CIS 122! For example,

Please enter a name: CIS 122
Hello, CIS 122!

(3) Stamps for Sale

Write Python code to simulate the operations of a vending machine for stamps. The vending machine accepts any combination and number of US bills (not coins), and returns as many USPS first class postage stamps ($0.49 cents per stamp) as possible. Change is returned as penny stamps.

Your program should ask a user to enter the dollar amount they plan to spend on stamps at the vending machine, and then give the user (i.e., print a message indicating) the correct number of first class and penny stamps1.
For example,

Please give dollar amount for stamps: 8
First class stamps: 16
Penny stamps: 16

**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 cis122project1-2.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), *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. *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.

1*Hints for Problem (3):*

You may want to multiply stamp cost and spending amounts by 100 (to get integers).

Explore the integer division (\(/\)) and modulo (remainder) (\(\%\)) operators.
(Challenge - Oxford word challenge)
An anagram, says the Concise Oxford Dictionary, is 'a word or phrase formed by transposing the letters of another word or phrase'. Can you transpose these words or phrases to make new words or phrases?

a) Set up a variable to have the value of the original word.

b) Answer the riddle.

c) Use string operators and the original word to construct the answer string. (Extra challenge: use as few operations as possible.)

Example: Rearrange lemon to make something else to eat.

a) original = ‘lemon’

b) Answer: melon

c) print(original[2] + original[1] + original[0] + original[3:])

1. Rearrange the letters of the word eat to make something to drink.
2. Rearrange brush to make a kind of bush.
3. Rearrange rail to make a dishonest person.
4. Rearrange skate to make a poet.
5. Rearrange wand to make a time of day.
6. Rearrange Alice to make another woman's name.
7. Rearrange Dorothea to make another woman's name.
8. Rearrange supersonic to get part of an orchestra.
9. Rearrange hormone to get the name of a bird.
10. Rearrange spectrum to make some eatables.
11. Which food might you make out of stale lamb?
12. What do you have to be if you want to listen?

(Send me an email if you want me to give you the answers to the riddles.)