Week 2: Assignment

Re-submit Assignment

Due Sunday by 11:59pm **Points** 100 **Submitting** a file upload

Instructions

Part of this weeks content covered function review and function docstrings. Please create the function as described below and please include function docstrings for each function.

Please make a python file called week_2_homework.py and put the answers to the problems below in it. All the problems below ask you to write functions. Put ***only*** the functions in the file "week_2_homework.py" do not put any testing code in that file. To test your functions, create another file called week_2_homework_test.py. In this file you can import that functions from your homework file as follows:

```
import week_2_homework as w2h

# then we can test the functions like so:

result = w2h.my_function()
print(result)
```

Please write the following functions. ***Make sure you name the functions exactly as typed below.***

Problem 1

Write a function called **count_uppercase_letters.** The function will take one argument which will be string. It will return the number of uppercase letters in a string. The function signature will be **count_uppercase_letters(my_string).**

Hint 1: You can loop through the letters in the string just like it is a list of characters. For example, run the following code to observer this behavior:

```
for letter in 'The Quick Brown Fox':
      print(letter)
```

Hint 2: You can check if a letter is a capital or not by using the **.istitle()** method. For example:

```
print('T'.istitle())

print('t'.istitle())
```

You can test the code with the following code:

```
result = count_uppercase_letters('The Quick Brown Fox')
print(result) #  result should have the value 4.
```

Problem 2

Write a function called **interleave_lists.** This function will two take arguments, both lists. It will interleave the items in the list (see the example below). The function signature will be **interleave_lists(list_1, list_2).**

You can test the function with the code below

```
list_1 = [1, 2, 3, 4]
list_2 = ['a', 'b', 'c', 'd']
result = interleave_lists(list_1, list_2)
print(result)

# result should be [1, 'a', 2, 'b', 3, 'c', 4, 'd']
```

Problem 3

Write a function called cylinder_stats. This function will take in two arguments, the radius and the height of a cylinder (specifically a "solid right circular cylinder"). It will return two results, the area and the volume of the cylinder. The function signature will be cylinder_stats(radius, height).

The formulas for the surface area and the volume of a cylinder are:

Surface Area = $2\pi r(h + r)$

Volume = $\pi(r^2)h$

You can test the function with the following code:

```
surface_area, volume = cylinder_stats(5, 10)
print(surface_area, volume)
# the values of surface_area and volume should be 471.238898038 and
785.398163397 respectively
```

Submission

Submit the file with the functions, week_2_homework.py. Each problem is worth 30 points, and you get 10 points for turning something in (that is completely blank). Click on the blue button in the top right corner to submit your assignment.

Click Next (below) to progress through the course.