Assignment 3: Functions I

30 Points scaled to 20 Points

Introduction

In this assignment, you will create functions to perform defined tasks then test your results on example data. No data files are required to complete this assignment.

Objectives

- *Create functions*
- *Define function parameters*
- *Use control flow and/or loops within functions*

Deliverables

- *Jupyter Notebook (Python) or R Markdown file (R) with all code embedded. Files can be rendered to HTML webpages if your instructor requires this. Include the task text using Markdown.*

Tasks

Task 1: Create a function that will accept two words and concatenate them to a single string with a space between the two words. Test the function on two string variables. (5 Points)

Task 2: Edit your function so that it will accept two or more words, concatenate them with spaces, and return the new, single string. You will need to use *args if you are working in Python. (5 Points)

Task 3: Create a function that will calculate the length of the hypotenuse of a triangle if given the length of the other two sides (i.e., Pythagorean Theorem). The function should accept two arguments, the length of the two leg sides, and return a single value: the hypotenuse length. In Python, you can use functions from the math module. This can be accomplished with base functions in R. (5 Points)

Task 4: Write a function that will convert a Celsius temperature measurement to Fahrenheit or a Fahrenheit measurement to Celsius. It should accept the temperature and the unit of measurement as a string and return the new temperature. Use the unit variable to define the conditions. (5 Points)

Task 5: Expand your function above so that you can convert Fahrenheit, Celsius, or Kelvin to any of the two other scales. It should accept the temperature, the current units, and the desired

units and return the new temperature. Use the unit variables to define the conditions. (10 Points)