CSE 4256: Homework 4 - Due Sunday, June 6

1) Study the article at the following link:
https://realpython.com/python-dicts/

Next take the quiz at the bottom of the article. You should take it multiple times until you get every question right. Take a snapshot of the certificate you get at the end of the quiz and paste the certificate into a Word document with your name, the class number, and the homework number (i.e. homework 4) at the top of the page.

Coding Problems

1) Write a function that takes a string representing a sentence and returns the most common letter used.

Hint: consider using string.ascii lowercase and string.ascii uppercase to avoid counting spaces and punctuation.

2) Write a function that takes two lists of equal length of strings as arguments and maps them into a dictionary. For example, if the first argument is [”cat”, ”dog”, ”parrot”] and the second argument is [”egg”, ”bacon”, ”toast”], the method should return {’cat’: ’egg’, ’dog’: ’bacon’, ’parrot’: ’toast’}.

3) Modify your solution to homework 1 question 2 so that it takes a number between 1 and 100 as an argument and returns that maximum number of guesses required to guess the number. The method should not print anything and should use the interval halving method. That is, start with a guess of 50 and guess 25 or 75 if your guess is too high or too low respectively. Continue this process until the number is guessed. The method should return the number of guesses it took.

4) Write a method called num_guesses(n) that repeatedly calls the method from question 3 with a loop with the integers from 1 to 100 as arguments. The method should return a dictionary with where the keys are the number of guesses from 1 to 7, and the values are the number of times each key occurs for the interval halving method.

The method should return the following dictionary:

{6: 32, 7: 37, 5: 16, 4: 8, 3: 4, 2: 2, 1: 1}

What to Submit

Package your Python file and Word document into a zip file as you did for

homework 1. Submit the zip file on Carmen.