### CS 100

### Homework 02

**Due Date:**

**Do** all of the items below and **submit** a text file created with the IDLE editor (or other editor) with the extension *.py* via Canvas. If you run into a problem, post to Canvas describing where you ran into trouble or email your instructor or classroom assistant, or ask your question during recitation hours. If you know the answer to someone’s question on Canvas, post a response. You get course credit for asking and answering questions in Canvas.

* Read Chapter 10 (Lists) in the textbook. You may skip the following sections: “Map, Filter and Reduce”, and “List Arguments”. Read the first two sections of Chapter 12 (Tuples): “Tuples Are Immutable”, and “Tuple Assignment”.
* In the Python editor IDLE, create and save a Python file that is named, if your name is Harry Houdini, for example, *HW2\_HarryHoudini.py* and begins with a comment containing your name, class and section, the posting date and number of the homework assignment. Use either a block comment or one-line comment style. Example:
* """  
  Harry Houdini  
  CS 100 2018S Section 004  
  HW 02, January 24, 2018  
  """
* or
* # Harry Houdini  
  # CS 100 2018S Section 004  
  # HW 02, January 24, 2018

1. This question practices the use of a list method. Assign to the variable grades a list of 10 letter grades from among 'A', 'B', 'C', 'D', and 'F'. For example:

* grades = ['A', 'F', 'C', 'F', 'A', 'B', 'A', 'C', 'A', 'B']
* Write a Python expression that creates a list named frequency, in which the elements are the number of times each of the letters A, B, C, D and F appear in grades. For example, for the above value of grades, the following would be correct output:
* frequency = [4, 2, 2, 0, 2]
* Your expression must give the correct values for ***any*** list of grades, not just the one in your list. Hint: use the list method count.

1. This question practices list membership, list indexes and list slices.
   1. Write a Python statement that creates a list named dog\_breeds that contains the elements 'collie', 'sheepdog', 'Chow', and 'Chihuahua' in the order given.
   2. Write a Python statement that uses list slicing to create a list herding\_dogs that is made up of the first two elements of dog\_breeds.
   3. Write a Python statement that uses list indexing to create a list tiny\_dogs that is made up of the last element of dog\_breeds.
   4. Write a Python statement that tests whether 'Persian' is in the list dog\_breeds and prints either True or False depending on the answer.