CS 100
Homework 02

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, *HW02_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 2019F Section 000
HW 02, September 16, 2019
"""
```

or

```
# Harry Houdini
# CS 100 2019F Section 000
# HW 02, September 16, 2019
```

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. Test your code with multiple versions of the grades list, and make sure you still get the correct output. Hint: use the list method `count`.

2. This question practices list membership, list indexes and list slices.
   a. Write a Python statement that creates a list named `dog_breeds` that contains the elements `'collie'`, `'sheepdog'`, `'Chow'`, and `'Chihuahua'` in the order given.
   b. 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`.
   c. 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`.
   d. Write a Python statement that tests whether `'Persian'` is in the list `dog_breeds` and prints either `True` or `False` depending on the answer.