

## Files & Dictionaries

### *Evaluation*

Your Python solution shall be evaluated and graded. The instructor will be looking at the following:

- Does the code adhere to separation of concerns, design for reuse, and design only what is needed?
- Does each function, with the exception of `main()`, have comments for purpose, assumptions, inputs, and post-conditions?
- Does the code produce the correct results?
- No test cases need to be documented for this lab!

### *Description*

Please work individually on this lab, but feel free to collaborate/discuss the lab with other students. Follow the steps below to complete this assignment.

1. Create a Python source code file that solves the following problem statement.
  - a. Create a `main()` function that will call the functions to perform the processing described in step 1.b.
  - b. Open the `MA_01.txt` file **only once(!)** to compute and display the following information.
    - i. The total number of characters in this text file.
      - Count every character whether it is a letter, digit, punctuation, or whitespace.
    - ii. The total number of text lines in this text file.
      - A text line will end with a newline ('\n') character. Note: The last text line in a file will never end with a newline character.
    - iii. The total number of lowercase letters in this text file.
    - iv. The total number of uppercase letters in this text file.
    - v. The total number of each letter in this text file.
      - Lowercase and uppercase letters will be counted together for each letter of the alphabet.
      - Hint: use a dictionary to keep track of the letter frequencies.
    - vi. **Testing:** The next page shows you the numbers that should be generated by your solution.

### **What to Submit for this Assignment**

- Use Canvas to submit your one Python source code file.

Total number of characters: 876  
Total number of text lines: 30  
Total number of lowercase letters: 666  
Total number of UPPERcase letters: 26  
Letter Count

-----	-----
a	52
b	9
r	42
v	16
e	90
n	38
d	19
s	46
t	68
l	39
i	53
g	9
u	19
h	38
w	27
c	19
o	54
m	15
x	1
f	16
y	11
p	10
k	1

For testing purposes, total of all frequency counts: 692