

Writing Files Practice

1. Write a python program that reads in a text file and prints all the lines back out with a dash in front.

Example program run:

```
> python3 read_file.py
```

```
dataIn = open('file.txt')
for line in dataIn:
    print("-", line.rstrip())
dataIn.close()
```

Input File contents:

```
hello
goodbye
1234
```

Outputs:

```
-hello
-goodbye
-1234
```

2. Write a python program that asks the user for the name of a file, and then repeatedly asks the user to enter a number, entering the number '0' when finished. Output each of these numbers to the file on a separate line.

Example program run:

```
> python3 write_numbers.py
```

```
User inputs:  filename = input("Please enter a filename")
out.txt      fileOut = open(filename, "w") # or can append (a)
25           prompt = "Please enter a number ('0' when finished)"
34           response = eval(input(prompt))
14           while response != 0:
0             print(response, file=fileOut)
              response = eval(input(prompt))
              fileOut.close()
```

Output file out.txt created with the following contents:

```
25
34
14
```

3. Write a python program that reads 3 files called test1.txt, test2.txt, and test3.txt, counts the number of lines in each file, and prints out the number of lines to a file counts.txt.

Example program run:

```
> python3 read3_files.py
```

text1.txt:	text2.txt:	text3.txt:
Hello	Goodbye	End of semester
how are you?	Number 5	approaches!
Good.	Nice knowing you	
See you later.		

Output file counts.txt created with the following contents:

```
text1.txt : 4
text2.txt : 3
text3.txt : 2
```

Hint: How to be DRY & not copy/paste the code 3 times? There are 2 approaches:

- a. Create a function with the filename as a parameter & call it 3 times
 - b. Create a list of the file names and loop over the file names
4. Create a program similar to above that counts the number of **words** in the files as well. After printing out information about each file, this program should also print the total number of lines & words in all 3 files. You can use the string split function to split a line of input into a list of words by splitting the line on spaces.

Example program run:

```
> python3 read3_files2.py
```

text1.txt:	text2.txt:	text3.txt:
Hello	Goodbye	End of semester
how are you?	Number 5	approaches!
Good.	Nice knowing you	
See you later.		

Output file counts.txt created with the following contents:

```
text1.txt : 4 lines, 8 words
text2.txt : 3 lines, 6 words
text3.txt : 2 lines, 4 words
TOTAL: 9 lines, 18 words
```

3. with a list & a function!

```
def count_lines(filename):
    total = 0
    for line in open(filename):
        total += 1
    return filename + " : " + str(total)

list = ["text1.txt", "text2.txt", "text3.txt"]
out = open("counts.txt", "w")
for file in list:
    print(count_lines(file), file=out)
out.close()
```

4. list is slightly simpler here
can also make a function, but need to return
a list/tuple with the number of lines & words

```
list = ["text1.txt", "text2.txt", "text3.txt"]
out = open("counts.txt", "w")
tot_lines = 0
tot_words = 0
for file in list:
    lines = 0
    words = 0
    for line in open(file):
        lines += 1
        words += len(line.split(" "))
    tot_lines += lines
    tot_words += words
    print(file, ":", lines, "lines,", words, "words", file=out)

print("TOTAL:", tot_lines, "lines,", tot_words, "words", file=out)
out.close()
```