

Computer Science 010: Design and Implementation of Solutions to Computational Problems

Assignment 7

This is an assignment that may be done individually or as a pair. If you would like to work in a pair, you are responsible for finding a partner.

Program #1 (95%)

Write a function that, as parameters, is given a filename and a list of words.

Count how many times each word in the list occurs in the specified file. If the file doesn't exist, catch the exception and inform the user that the words occurred 0 times each.

Make sure that you make the case uniform so that upper and lower case words match. Make sure you close any files that you open.

Below right is a sample test run for the function that you are to write called "wordCounter".

Below left is the output you should get if you have correctly written your function. In this case I am counting words with apostrophe's as a separate word. So "he" is not the same as "he's"

```
*****
FrozenScript.txt
  he : 12
  she : 43
  it : 116
  olaf : 21
  anna : 59
*****
InceptionScript.txt
  he : 61
  she : 37
  it : 179
  thoughts : 2
  hallucinating : 1
*****
LesMiserablesScript.txt
  he : 68
  she : 29
  it : 87
  truth : 4
  hear : 15
*****
MaryPoppinsScript.txt
  he : 32
  she : 24
  it : 115
  chim : 59
  sugar : 12
*****
dummy.txt
Could not open the file: dummy.txt
  he : 0
  she : 0
  it : 0
*****

print("*****")
fileName = "FrozenScript.txt"
print(fileName);
wordCounter(fileName,["he","she","it","Olaf","Anna"])

print("*****")
fileName = "InceptionScript.txt"
print(fileName);
wordCounter(fileName,["he","she","it","thoughts","hallucinating"])

print("*****")
fileName = "LesMiserablesScript.txt"
print(fileName);
wordCounter(fileName,["he","she","it","truth","hear"])

print("*****")
fileName = "MaryPoppinsScript.txt"
print(fileName);
wordCounter(fileName,["he","she","it","CHIM","SUGAr"])

print("*****")
fileName = "dummy.txt"
print(fileName);
wordCounter(fileName,["he","she","it"])
```

Challenge Problem #2 (5%)

Write a function that is given a filename as a parameter. Output a list of words that make up more than 1% of all the words in the file along with their count.

If the file doesn't exist, catch the exception and inform the user that the file doesn't exist.

Make sure that you make the case uniform so that upper and lower case words match. Make sure you close any files that you open.

Below left is a sample test program for the function that you are to write called "wordFilter". To the right is the output you should get if you have correctly written your function. In this case I am counting words with apostrophe's as a separate word. So "he" is not the same as "he's"

```
print("*****")
fileName = "FrozenScript.txt"
print(fileName);
wordFilter(fileName)

print("*****")
fileName = "InceptionScript.txt"
print(fileName);
wordFilter(fileName)

print("*****")
fileName = "LesMiserablesScript.txt"
print(fileName);
wordFilter(fileName)

print("*****")
fileName = "MaryPoppinsScript.txt"
print(fileName);
wordFilter(fileName)

print("*****")
fileName = "dummy.txt"
print(fileName);
wordFilter(fileName)
```

```
*****
FrozenScript.txt
  of : 84
  and : 132
  a : 143
  the : 206
  it : 116
  to : 177
  i : 243
  is : 90
  you : 294
  me : 98
  no : 129
*****
InceptionScript.txt
  we : 154
  a : 212
  the : 359
  this : 121
  and : 128
  you : 504
  to : 357
  i : 274
  what : 122
  is : 143
  it : 179
  in : 141
  of : 126
  that : 185
*****
LesMiserablesScript.txt
  in : 158
  the : 495
  you : 337
  and : 238
  to : 252
  my : 147
  i : 310
  me : 165
  a : 267
  is : 155
  of : 187
*****
MaryPoppinsScript.txt
  a : 274
  you : 266
  and : 182
  the : 375
  i : 207
  to : 165
  in : 140
  of : 132
  it : 115
*****
dummy.txt
Could not open the file: dummy.txt
```