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Section: S02   ASSIGNMENT: FILES

I)   Write the pseudocode and program for the following:

1. Tillu is a story writer. He writes a story in a text file and saves his script as "danger.txt." He wants to know the words that he frequently uses. Write functions to do the following.

a. remove Articles (a, an, the) and Prepositions (in, on, at, ….)

b. find top 10 frequent words he is using in his writings

c. write these frequent words in a separate file "freq.txt".

d. input the file names in the command line

i.   **Aim**
            To find out the frequent words in a text apart from articles and
     prepositions

ii.   Pseudo code

```
import sys
    file = open (sys.argv[1], 'r')
    doc = file.read()

    articlesPrepositions = [=articles and prepositions in a list]

    wordDoc = list(filter (lambda a: a not in articlesPrepositions,
                            (doc.lower().split())))

    frequency = dict.fromkeys (wordDoc, 0)

    for i in wordDoc:
        if i in frequency:
            frequency[i]+=1

    words = sorted ([(v,k) for k,v in frequency.items()])
            frequentWordsUsed = open('frequent#WordsUsed.txt',
                                     'a')

for i in words[-1:-10:-1]:
    frequentWordsUsed.write(i[1] +"\n").
```

iii. Code

Program:

Output:

```
s7@Host:~/College $ python3 'Frequent words using command line.py' danger.txt
s7@Host:~/College $ []
```

FrequentWordsUsed.txt :

```
your
will
and
which
this
dog
you
treat
sit.
```

danger.txt :

```
This one is probably the simplest and most famous dog trick .
However, as simple as this command is, it is also one of the most important!
After learning this, your dog will sit on command,
which will be of constant use to you in everyday life.
for example, when you are waiting at a traffic light.
Hold a treat above your dog's head and slowly move your hand further up.
Your dog will follow the treat with his nose, which will automatically make him sit.
Reward this by giving him the treat.
Over time,
introduce a hand and word signal and increase the distractions under which your four legged friend must sit.
```

2. Consider a text file "homework.txt" consisting of 10 sentences related toPython programming . Write functions to do the following

a. find the number of vowels, consonants, length of longest word.

b. write these details in "info.txt" in the following format number of vowels: count number of consonants: count longest word: length

c. input the file names in the command line

i. **Aim**

To find the number of specified characters in a given document

ii.   Pseudocode

```
import sys

file = open (sys.argv[1] , 'r')
doc = file.read()

vowels = ['a','e','i','o','u']

for i in doc:
    if i in vowels:
        vc += 1
    elif i.isalpha() and i not in vowels
        cc += 1

longestWord = list(map(lambda a : len(a), (doc.split())))
              index(max(list(map(lambda a : len(a),
                      (doc.split())))))

word = doc.split()[longestWord]
info = open ('info.txt' , 'w')
info.write (f "no. of vowels {vc}")
      "      (f "no. of consonants {cc}")
      "      (f " longestWord : {word}").
```

iii. Code

Program:

```python
import sys

file = open(sys.argv[1], 'r')
doc = file.read()

vowels = ['a','i','o','u','e']

vc, cc =0,0

for i in doc:
    if i in vowels:
        vc+=1
    elif i.isalpha() and i not in vowels:
        cc+=1

longestWord = list(map(lambda a:len(a),(doc.split()))).index(max(list(map(lambda a:len(a) , (doc.split())))))
word = doc.split()[longestWord]
info = open('info.txt' , 'w')

info.write(f"number of vowels :{vc} \n")
info.write(f"number of consonants :{cc} \n")
info.write(f"Longest word :{word} \n")
```

Output:

```
s7@Host:~/College $ python3 'vowels in a Document.py' homework.txt
s7@Host:~/College $ []
```

homework.txt:

```
The most basic building-block of any programming language is the concept of a variable
It a name and place in memory that we reserve for a value.
In Python we use this syntax to create a variable and assign a value to this variable.
We have several basic data types and built-in data structures that we can work with in our programs.
Each one has its own particular applications.
Integers are numbers without decimals.
Floats are numbers with decimals.
You can detect them visually by locating the decimal point.
Complex numbers have a real part and an imaginary part denoted with j.
Strings contain a sequence of characters and they are usually used to represent text in the code.
We can use indices to access the characters of a string in our Python program.
An index is an integer that represents a specific position in the string.
They are associated to the character at that position.
```

info.txt:

```
number of vowels :275
number of consonants :445
Longest word :building-block
```

II)   Learning Outcome

● To be able to apply computational thinking to devise solutions using Filesand learn to pass the values as arguments through the command line.
● to be able to code Python programs by defining the functions to handle the Files