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Enrollment number - 21162101012

Branch - CBA Batch - 41

FP Practical 7

Institute of Computer Technology
B. Tech Computer Science and Engineering

Sub: (2CSE403) FUNCTIONAL PROGRAMMING

Practical 7

1. A book reviewer needs to analyse the book chapter wise. He wants to ease his work through the review machine. The machine needs to count the number of characters, words, and lines of the given chapter. A whitespace character separates words. The program should prompt the user to enter a filename.

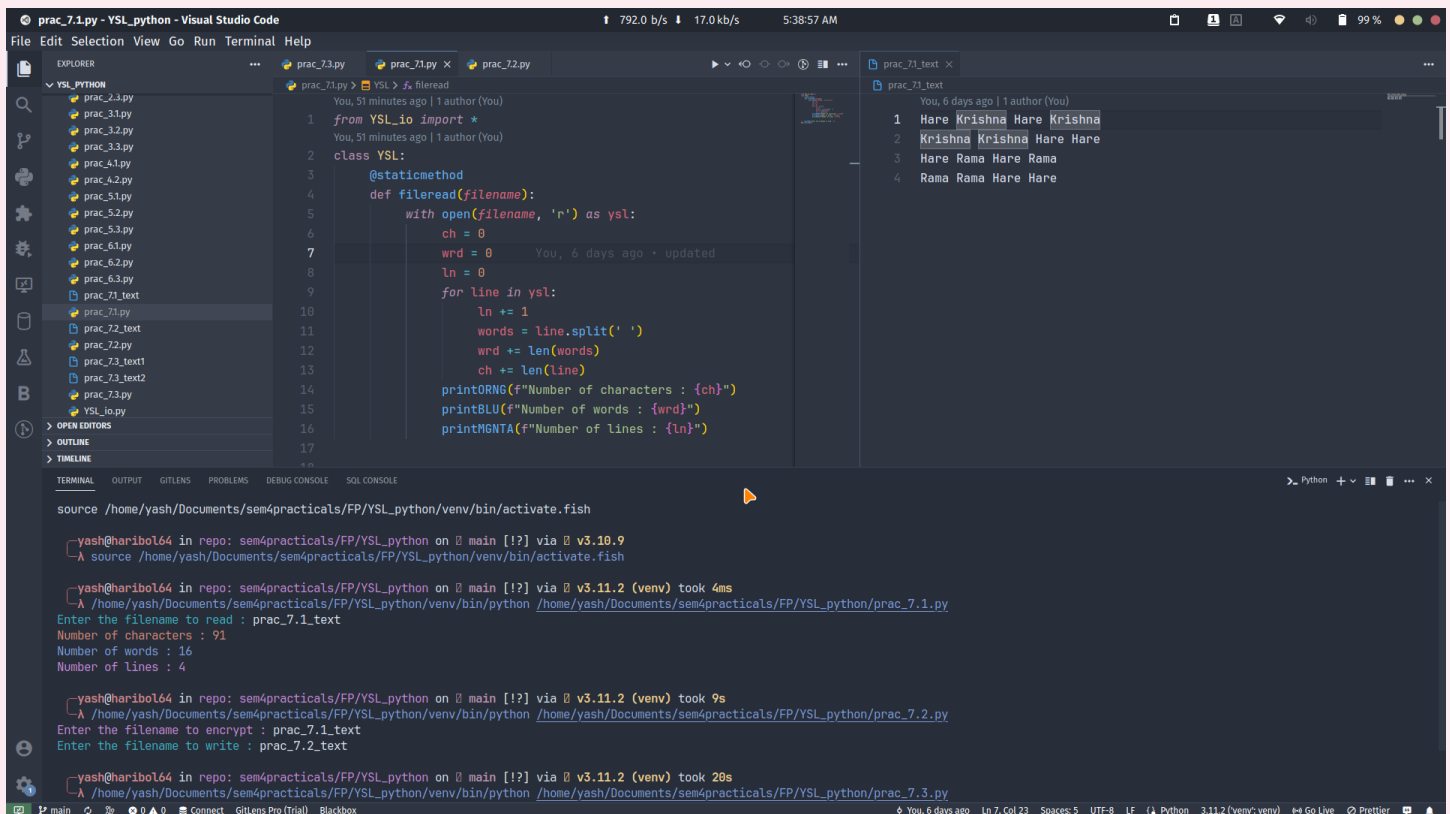
Code:

```
from YSL_io import *  
  
class YSL:  
    @staticmethod  
    def fileread(filename):  
        with open(filename, 'r') as ysl:  
            ch = 0  
            wrd = 0  
            ln = 0  
            for line in ysl:  
                ln += 1  
                words = line.split(' ')  
                wrd += len(words)  
                ch += len(line)
```

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```
printORNG(f"Number of characters : {ch}")  
  
printBLU(f"Number of words : {wrd}")  
  
printMGNTA(f"Number of lines : {ln}")  
  
f = inputGRN("Enter the filename to read : ")  
YSL.fileread(f)
```

Output :



```
source /home/yash/Documents/sem4practicals/FP/YSL_python/venv/bin/activate.fish  
  
-yash@haribol64 in repo: sem4practicals/FP/YSL_python on main [!?] via v3.10.9  
-A source /home/yash/Documents/sem4practicals/FP/YSL_python/venv/bin/activate.fish  
  
-yash@haribol64 in repo: sem4practicals/FP/YSL_python on main [!?] via v3.11.2 (venv) took 4ms  
-A /home/yash/Documents/sem4practicals/FP/YSL_python/venv/bin/python /home/yash/Documents/sem4practicals/FP/YSL_python/prac_7.1.py  
Enter the filename to read : prac_7.1_text  
Number of characters : 91  
Number of words : 16  
Number of lines : 4  
  
-yash@haribol64 in repo: sem4practicals/FP/YSL_python on main [!?] via v3.11.2 (venv) took 9s  
-A /home/yash/Documents/sem4practicals/FP/YSL_python/venv/bin/python /home/yash/Documents/sem4practicals/FP/YSL_python/prac_7.2.py  
Enter the filename to encrypt : prac_7.1_text  
Enter the filename to write : prac_7.2_text  
  
-yash@haribol64 in repo: sem4practicals/FP/YSL_python on main [!?] via v3.11.2 (venv) took 20s  
-A /home/yash/Documents/sem4practicals/FP/YSL_python/venv/bin/python /home/yash/Documents/sem4practicals/FP/YSL_python/prac_7.3.py
```

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2. For some security reasons an employee has to secure his documents. He has encoded the file by adding 5 to every byte in the file. Write a program that prompts the user to enter an input filename and an output filename and saves the encrypted version of the input file to the output file. Also, for backup point, he needs the original document on his side; but he is always going to communicate using the encoded format to the client. The client will be provided the private key (i.e. the decoded output) for his use. Write a program to decode an encrypted file and save the unencrypted version of the input file to the output.

Code:

```
from YSL_io import *

class YSL:

    @staticmethod
    def encrypt(txt, shift: int, out):
        ncrptd = ""
        with open(txt, 'r') as ysl:
            for char in ysl.read():
                if char.isalpha():
                    if char.isupper():
                        ncrptd += chr((ord(char) + shift - 65) % 26 +
65)

                    else:
                        ncrptd += chr((ord(char) + shift - 97) % 26 +
97)

                else:
                    ncrptd += char
```

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```
with open(out, 'w') as output:

    output.write(ncrptd)

@staticmethod

def decrypt(txt, shift, out):

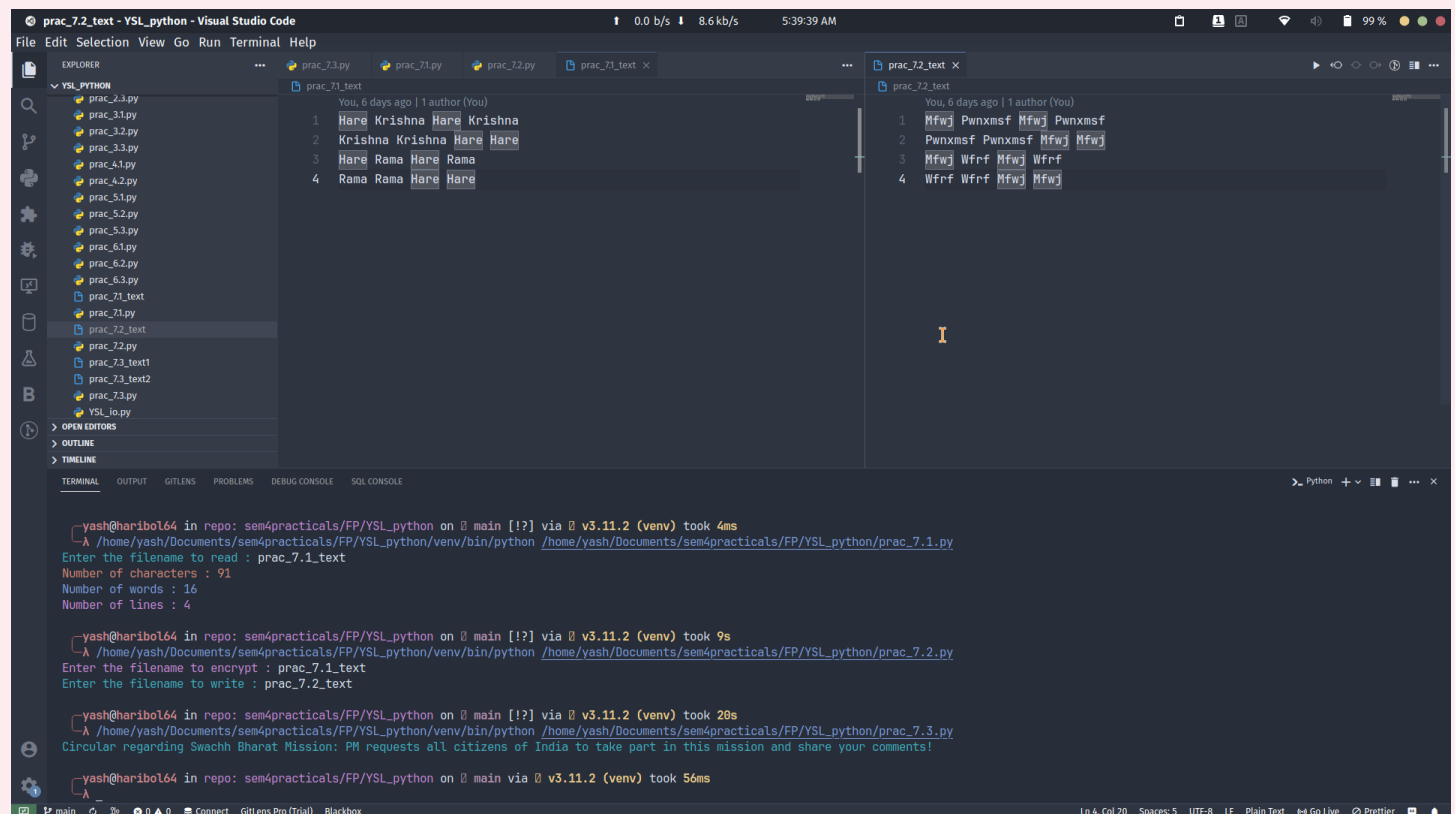
    YSL.encrypt(txt, -shift, out)

file_in = inputMGNTA("Enter the filename to encrypt : ")

file_out = inputGRN("Enter the filename to write : ")

YSL.encrypt(file_in, 5, file_out)
```

Output :



```
pract_72_text - YSL_python - Visual Studio Code
File Edit Selection View Go Run Terminal Help

EXPLORER
  YSL_python
    prac_2-3.py
    prac_31.py
    prac_32.py
    prac_33.py
    prac_41.py
    prac_42.py
    prac_51.py
    prac_52.py
    prac_53.py
    prac_61.py
    prac_62.py
    prac_63.py
    prac_71_text
    prac_71.py
    prac_72_text
    prac_72.py
    prac_73_text1
    prac_73_text2
    prac_73.py
    YSL_io.py
  OPEN EDITORS
  OUTLINE
  TIMELINE

TERMINAL
  yash@haribol64 in repo: sem4practicals/FP/YSL_python on main [!?] via v3.11.2 (venv) took 4ms
  A /home/yash/Documents/sem4practicals/FP/YSL_python/venv/bin/python /home/yash/Documents/sem4practicals/FP/YSL_python/prac_7.1.py
  Enter the filename to read : prac_7.1_text
  Number of characters : 91
  Number of words : 16
  Number of lines : 4

  yash@haribol64 in repo: sem4practicals/FP/YSL_python on main [!?] via v3.11.2 (venv) took 9s
  A /home/yash/Documents/sem4practicals/FP/YSL_python/venv/bin/python /home/yash/Documents/sem4practicals/FP/YSL_python/prac_7.2.py
  Enter the filename to encrypt : prac_7.1_text
  Enter the filename to write : prac_7.2_text

  yash@haribol64 in repo: sem4practicals/FP/YSL_python on main [!?] via v3.11.2 (venv) took 20s
  A /home/yash/Documents/sem4practicals/FP/YSL_python/venv/bin/python /home/yash/Documents/sem4practicals/FP/YSL_python/prac_7.3.py
  Circular regarding Swachh Bharat Mission: PM requests all citizens of India to take part in this mission and share your comments!

  yash@haribol64 in repo: sem4practicals/FP/YSL_python on main via v3.11.2 (venv) took 56ms
  A _
```

pract_71_text

```
You, 6 days ago | 1 author (You)
1 Hare Krishna Hare Krishna
2 Krishna Krishna Hare Hare
3 Hare Rama Hare Rama
4 Rama Rama Hare Hare
```

pract_72_text

```
You, 6 days ago | 1 author (You)
1 Hfwj Pwnxmsf Hfwj Pwnxmsf
2 Pwnxmsf Pwnxmsf Hfwj Hfwj
3 Hfwj Wfrf Hfwj Wfrf
4 Wfrf Wfrf Hfwj Hfwj
```

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3. PM Narendra Modi has generated one circular regarding Swachh Bharat Mission and posted it on to his twitter account. His Followers has to read that circular and share their suggestions through their tweeted comments. Help PM by providing help in: a) Generating the circular in text file. b) Reading that circular and printing it. c) As a follower, write suggestion below circular and generate new document appending new comments w.r.t original tweet stating the no of suggestions generated for a point in circular.

Code :

```
from YSL_io import *

circular = "Circular regarding Swachh Bharat Mission: PM requests all
citizens of India to take part in this mission and share your comments!"

with open("prac_7.3_text1", "w") as f:
    f.write(circular)

with open("prac_7.3_text1", "r") as f:
    circular = f.read()
    printGRN(circular)

cmnts = [
    "We want government to arrange for more dustbins in rural areas",
    "More public toilets should be made",
    "Penalties on spitting or throwing waste here and there should be
increased"
]
```

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```
circular_2 = ''

for line in circular.split("\n"):

    circular_2 += f"{line}\n"

circular_2 += f"\n{len(cmnts)} Public Suggestions : \n\n"

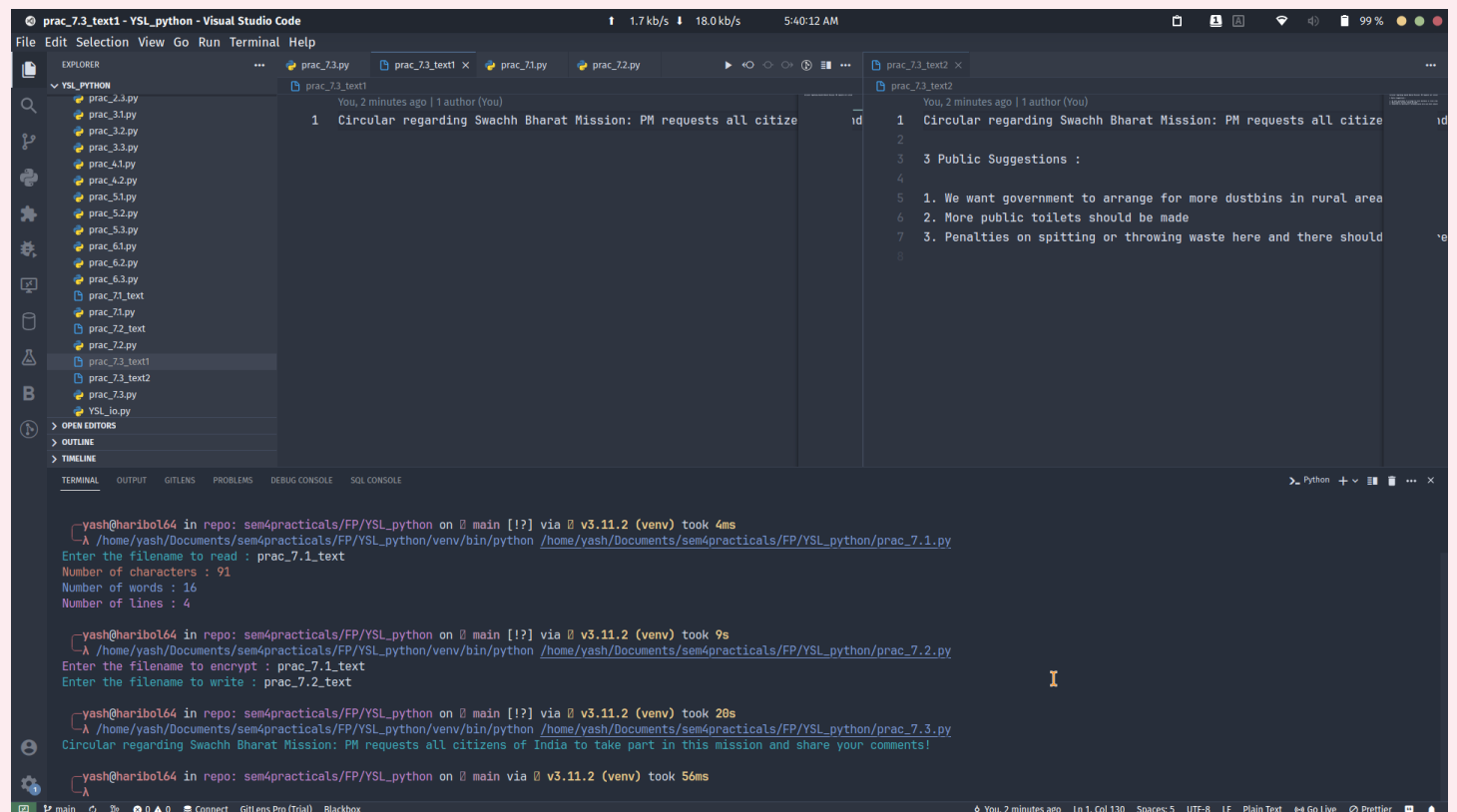
for i, c in enumerate(cmnts):

    circular_2 += f"{i+1}. {c}\n"

with open("prac_7.3_text2", "w") as f:

    f.write(circular_2)
```

Output :



```
prach_7.3_text1 - YSL_python - Visual Studio Code
1.7 kb/s 18.0 kb/s 5:40:12 AM

File Edit Selection View Go Run Terminal Help

EXPLORER
YSL_python
  prac_2-3.py
  prac_3-1.py
  prac_3-2.py
  prac_3-3.py
  prac_4-1.py
  prac_4-2.py
  prac_5-1.py
  prac_5-2.py
  prac_5-3.py
  prac_6-1.py
  prac_6-2.py
  prac_6-3.py
  prac_7-1_text
  prac_7-1.py
  prac_7-2_text
  prac_7-2.py
  prac_7-3_text1
  prac_7-3_text2
  prac_7-3.py
  YSL_io.py
  OPEN EDITORS
  OUTLINE
  TIMELINE

TERMINAL
You, 2 minutes ago | 1 author (You)
1 Circular regarding Swachh Bharat Mission: PM requests all citize

You, 2 minutes ago | 1 author (You)
1 Circular regarding Swachh Bharat Mission: PM requests all citize
2
3 3 Public Suggestions :
4
5 1. We want government to arrange for more dustbins in rural area
6 2. More public toilets should be made
7 3. Penalties on spitting or throwing waste here and there should
8

yash@haribol64 in repo: sem4practicals/FP/YSL_python on main [!?] via v3.11.2 (venv) took 4ms
A /home/yash/Documents/sem4practicals/FP/YSL_python/venv/bin/python /home/yash/Documents/sem4practicals/FP/YSL_python/prac_7.1.py
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Enter the filename to encrypt : prac_7.1_text
Enter the filename to write : prac_7.2_text

yash@haribol64 in repo: sem4practicals/FP/YSL_python on main [!?] via v3.11.2 (venv) took 28s
A /home/yash/Documents/sem4practicals/FP/YSL_python/venv/bin/python /home/yash/Documents/sem4practicals/FP/YSL_python/prac_7.3.py
Circular regarding Swachh Bharat Mission: PM requests all citizens of India to take part in this mission and share your comments!

yash@haribol64 in repo: sem4practicals/FP/YSL_python on main via v3.11.2 (venv) took 56ms
A
```