WORKSHEET 3.3

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Subject Name: PROGRAMMING IN PYTHON	**Subject Code:** 21CSP-259

1. **Aim:** Program to implement concept of File handling by preforming read and write operations in files by using various modes.

2. Objective:

   1. Write a Python program to generate 26 text files named A.txt, B.txt, and so on up to Z.txt.
   2. Write a Python program to create a file where all letters of English alphabet are listed by specified number of letters on each line.
   3. Write a Python program to read a random line from a file.
   4. Write a Python program to count the frequency of words in a file.
   5. Write a Python program to copy the contents of a file to another file.

3. **Source Code:**

a)
```python
import string

def generate_text_files():
    for letter in string.ascii_uppercase:
        file_name = letter + '.txt'
        with open(file_name, 'w') as file:
            file.write('This is file ' + file_name)

generate_text_files()
```

b)

```python
import string

def create_alphabet_file(letters_per_line):
    alphabet = string.ascii_uppercase
    with open('alphabet.txt', 'w') as file:
        for i in range(0, len(alphabet), letters_per_line):
            line = alphabet[i:i+letters_per_line]
            file.write(line + '\n')
    create_alphabet_file(5)
```

c)

```python
import random

def get_random_line(file_name):
    with open(file_name, 'r') as file:
        lines = file.readlines()
        return random.choice(lines).strip()

# Example usage: get a random line from a file named "example.txt"
random_line = get_random_line('example.txt')
    print(random_line)
```

d)

```python
def count_word_frequency(file_name):
    word_frequency = {}
    with open(file_name, 'r') as file:
        for line in file:
            words = line.split()
            for word in words:
                word = word.lower()  # Convert word to lowercase
                if word in word_frequency:
                    word_frequency[word] += 1
                else:
                    word_frequency[word] = 1
    return word_frequency

# Example usage: count word frequency in a file named "example.txt"
word_frequency = count_word_frequency('example.txt')
for word, frequency in word_frequency.items():
    print(f'{word}: {frequency}')
```

e)

```python
def copy_file(source_file, destination_file):
    with open(source_file, 'r') as source:
        with open(destination_file, 'w') as destination:
            destination.write(source.read())

# Example usage: copy the contents of "source.txt" to "destination.txt"
copy_file('source.txt', 'destination.txt')
```
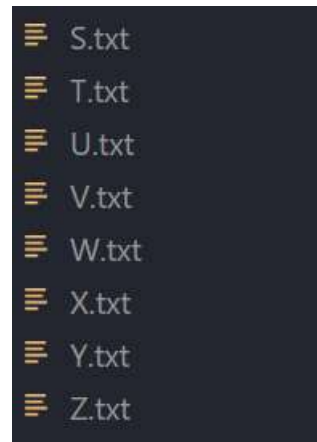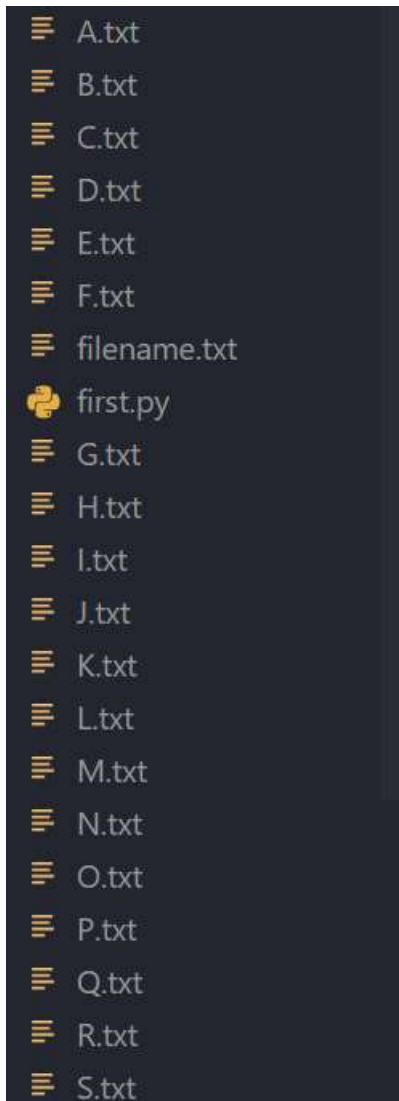
4. Output:

a.

```
A.txt                          S.txt
B.txt                          T.txt
C.txt                          U.txt
D.txt                          V.txt
E.txt                          W.txt
F.txt                          X.txt
filename.txt                   Y.txt
first.py                       Z.txt
G.txt
H.txt
I.txt
J.txt
K.txt
L.txt
M.txt
N.txt
O.txt
P.txt
Q.txt
R.txt
S.txt
```

```
PS C:\Users\lenovo\OneDrive\Desktop
\PRO\Python> & C:/Users/lenovo/AppD
ata/Local/Programs/Python/Python311
/python.exe c:/Users/lenovo/OneDriv
e/Desktop/PRO/Python/first.py
PS C:\Users\lenovo\OneDrive\Desktop
\PRO\Python> []
```

b.


```
first.py          alphabet.txt ×                                                          Python + ∨  < ×
alphabet.txt
1   ABCDE                                                          PS C:\Users\lenovo\OneDrive\Desktop
2   FGHIJ                                                          \PRO\Python> & C:/Users/lenovo/AppD
3   KLMNO                                                          ata/Local/Programs/Python/Python311
4   PQRST                                                          /python.exe c:/Users/lenovo/OneDriv
5   UVWXY                                                          e/Desktop/PRO/Python/first.py
6   Z                                                              PS C:\Users\lenovo\OneDrive\Desktop
7                                                                  \PRO\Python> & C:/Users/lenovo/AppD
                                                                   ata/Local/Programs/Python/Python311
                                                                   /python.exe c:/Users/lenovo/OneDriv
                                                                   e/Desktop/PRO/Python/first.py
                                                                   PS C:\Users\lenovo\OneDrive\Desktop
                                                                   \PRO\Python> & C:/Users/lenovo/AppD
                                                                   ata/Local/Programs/Python/Python311
                                                                   /python.exe c:/Users/lenovo/OneDriv
                                                                   e/Desktop/PRO/Python/first.py
                                                                   PS C:\Users\lenovo\OneDrive\Desktop
                                                                   \PRO\Python> []
```

c.

```
PS C:\Users\lenovo\OneDrive\Desktop\
PRO\Python> & C:/Users/lenovo/AppDat
a/Local/Programs/Python/Python311/py
thon.exe c:/Users/lenovo/OneDrive/De
sktop/PRO/Python/first.py
I am SABHYA MAHAJAN, a javascript de
veloper
PS C:\Users\lenovo\OneDrive\Desktop\
PRO\Python>
```

d.

```
PS C:\Users\lenovo\OneDrive\Desktop\
PRO\Python> & C:/Users/lenovo/AppDat
a/Local/Programs/Python/Python311/py
thon.exe c:/Users/lenovo/OneDrive/De
sktop/PRO/Python/first.py
i: 2
am: 2
sabhya: 2
mahajan: 1
21bcs9200: 1
mahajan,: 1
a: 1
javascript: 1
developer: 1
PS C:\Users\lenovo\OneDrive\Desktop\
PRO\Python>
```

e.