

Worksheet – 3.3

Student Name: Vivek Kumar

UID: 21BCS8129

Branch: BE-CSE (LEET)

Section/Group: 809/A

Semester: 4th

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Subject Name: Programming in Python Lab

Subject Code: 20CSP-259

1. Aim/Overview of the practical:

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

2. Task to be done/ Which logistics used:

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

3. Steps for experiment/practical/Code:

- I. Write a Python program to generate 26 text files named A.txt, B.txt, and so on up to Z.txt.

```
import string
import os
if not os.path.exists("letters"):
    os.makedirs("letters")
for letter in string.ascii_uppercase:
    with open(letter + ".txt", "w") as f:
        f.writelines(letter)
```

- II. Write a Python program to create a file where all letters of English alphabet are listed by specified number of letters on each line.

```
import string
def letters_file_line(n):
    with open("words1.txt", "w") as f:
        alphabet = string.ascii_uppercase
        letters = [alphabet[i:i + n] + "\n" for i in range(0, len(alphabet), n)]
        f.writelines(letters)
letters_file_line(6)
```

- III. Write a Python program to read a random line from a file.

```
import random
def random_line(fname):
    lines = open(fname).read().splitlines()
    return random.choice(lines)
print(random_line('file1.txt'))
```

- IV. Write a Python program to count the frequency of words in a file.

```
from collections import Counter
def word_count(fname):
    with open(fname) as f:
        return Counter(f.read().split())
print("Number of words in the file :", word_count("file1.txt"))
```

V. Write a Python program to copy the contents of a file to another file.

```
print("Enter the Name of Source File: ")
sFile = input()
print("Enter the Name of Target File: ")
tFile = input()

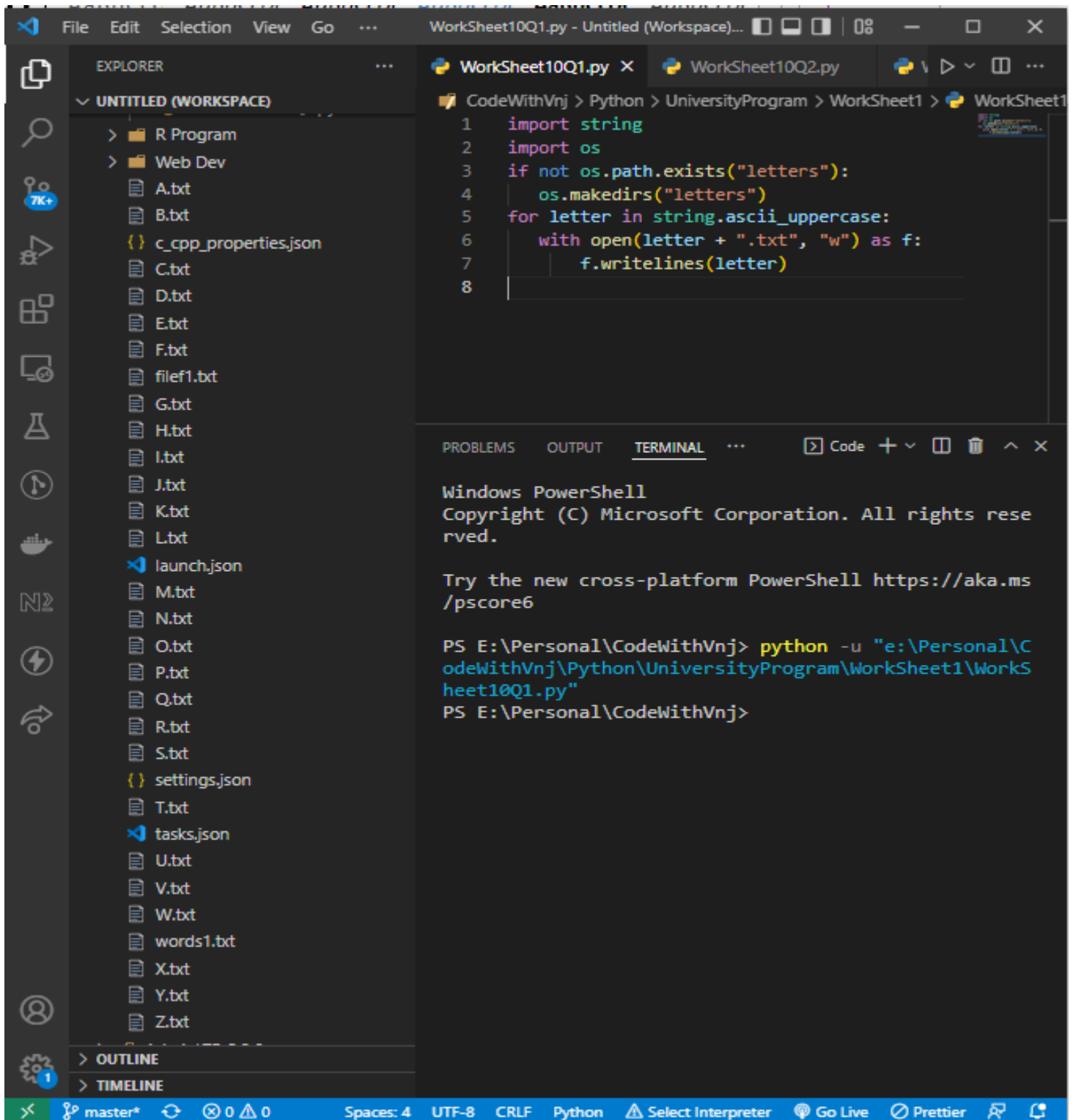
fileHandle = open(sFile, "r")
texts = fileHandle.readlines()
fileHandle.close()

fileHandle = open(tFile, "w")
for s in texts:
    fileHandle.write(s)
fileHandle.close()

print("\nFile Copied Successfully!")
```

4. Result/Output/Writing Summary:

- I. Write a Python program to generate 26 text files named A.txt, B.txt, and so on up to Z.txt.



The screenshot shows a Visual Studio Code editor with a workspace named 'UNTITLED (WORKSPACE)'. The Explorer panel on the left shows a folder named 'WorkSheet1' containing 26 text files (A.txt to Z.txt) and two JSON files (c_cpp_properties.json and settings.json). The main editor area shows the code for 'WorkSheet10Q1.py' in Python. The code imports 'string' and 'os', checks if a directory named 'letters' exists, creates it if not, and then iterates over the uppercase letters of the alphabet, creating a text file for each letter. The terminal at the bottom shows the execution of the program in a Windows PowerShell environment, displaying the directory path and the command used to run the script.

```

1  import string
2  import os
3  if not os.path.exists("letters"):
4      os.makedirs("letters")
5  for letter in string.ascii_uppercase:
6      with open(letter + ".txt", "w") as f:
7          f.writelines(letter)
8

```

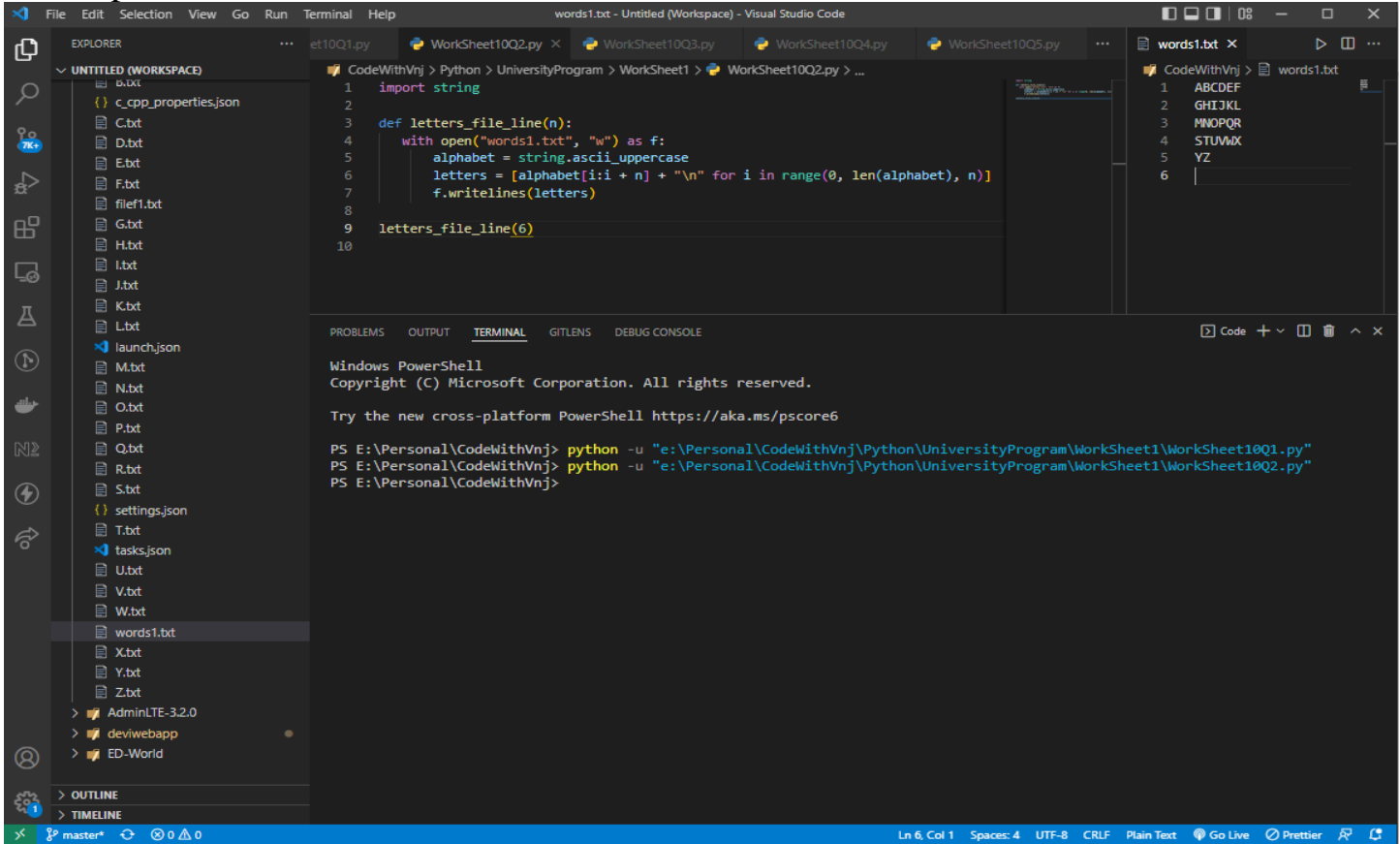
Windows PowerShell
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Try the new cross-platform PowerShell <https://aka.ms/powershell>

PS E:\Personal\CodeWithVnj> python -u "e:\Personal\CodeWithVnj\Python\UniversityProgram\WorkSheet1\WorkSheet10Q1.py"

PS E:\Personal\CodeWithVnj>

II. Write a Python program to create a file where all letters of English alphabet are listed by specified number of letters on each line.



The screenshot shows the Visual Studio Code interface. The Explorer panel on the left shows a file named `words1.txt` in the `UNTITLED (WORKSPACE)`. The main editor shows a Python file `et10Q1.py` with the following code:

```
1 import string
2
3 def letters_file_line(n):
4     with open("words1.txt", "w") as f:
5         alphabet = string.ascii_uppercase
6         letters = [alphabet[i:i + n] + "\n" for i in range(0, len(alphabet), n)]
7         f.writelines(letters)
8
9 letters_file_line(6)
10
```

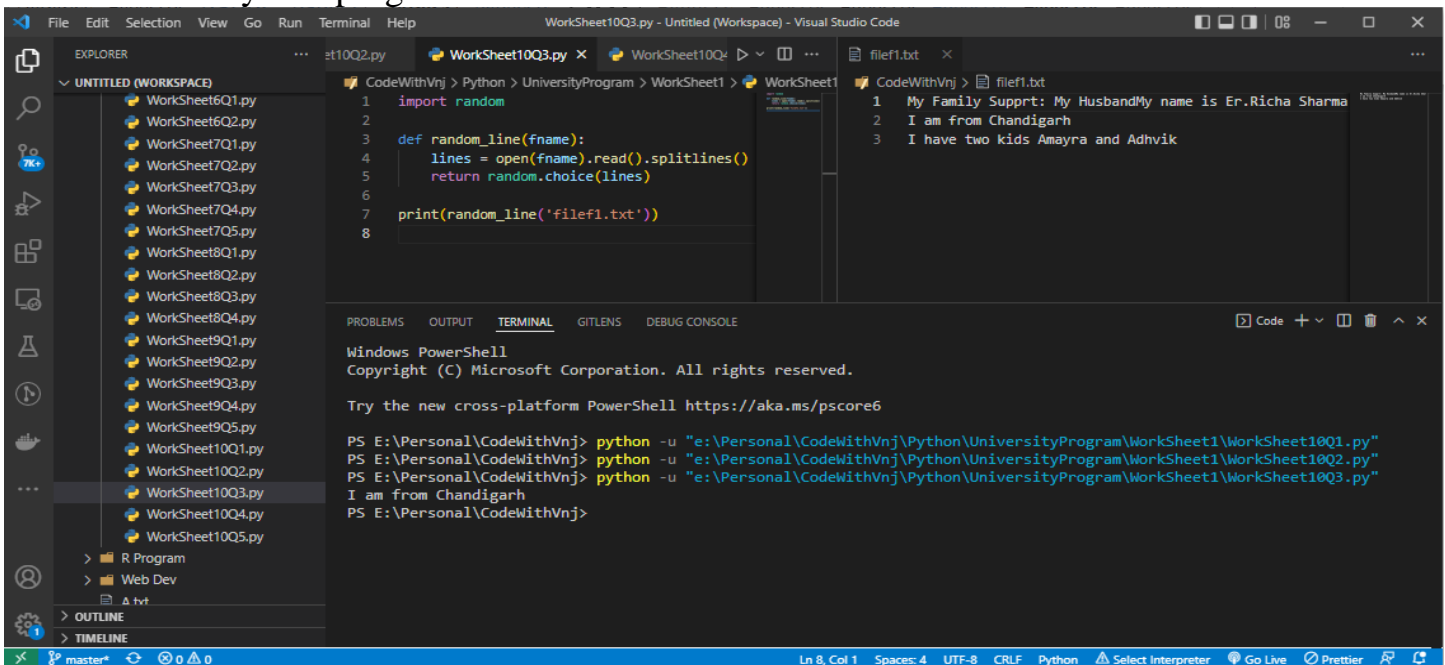
The Output panel at the bottom shows the execution of the program in a Windows PowerShell terminal:

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS E:\Personal\CodeWithVnj> python -u "e:\Personal\CodeWithVnj\Python\UniversityProgram\WorkSheet1\WorkSheet10Q1.py"
PS E:\Personal\CodeWithVnj> python -u "e:\Personal\CodeWithVnj\Python\UniversityProgram\WorkSheet1\WorkSheet10Q2.py"
PS E:\Personal\CodeWithVnj>
```

III. Write a Python program to read a random line from a file.



The screenshot shows the Visual Studio Code interface. The Explorer panel on the left shows a file named `file1.txt` in the `UNTITLED (WORKSPACE)`. The main editor shows a Python file `et10Q2.py` with the following code:

```
1 import random
2
3 def random_line(fname):
4     lines = open(fname).read().splitlines()
5     return random.choice(lines)
6
7 print(random_line('file1.txt'))
8
```

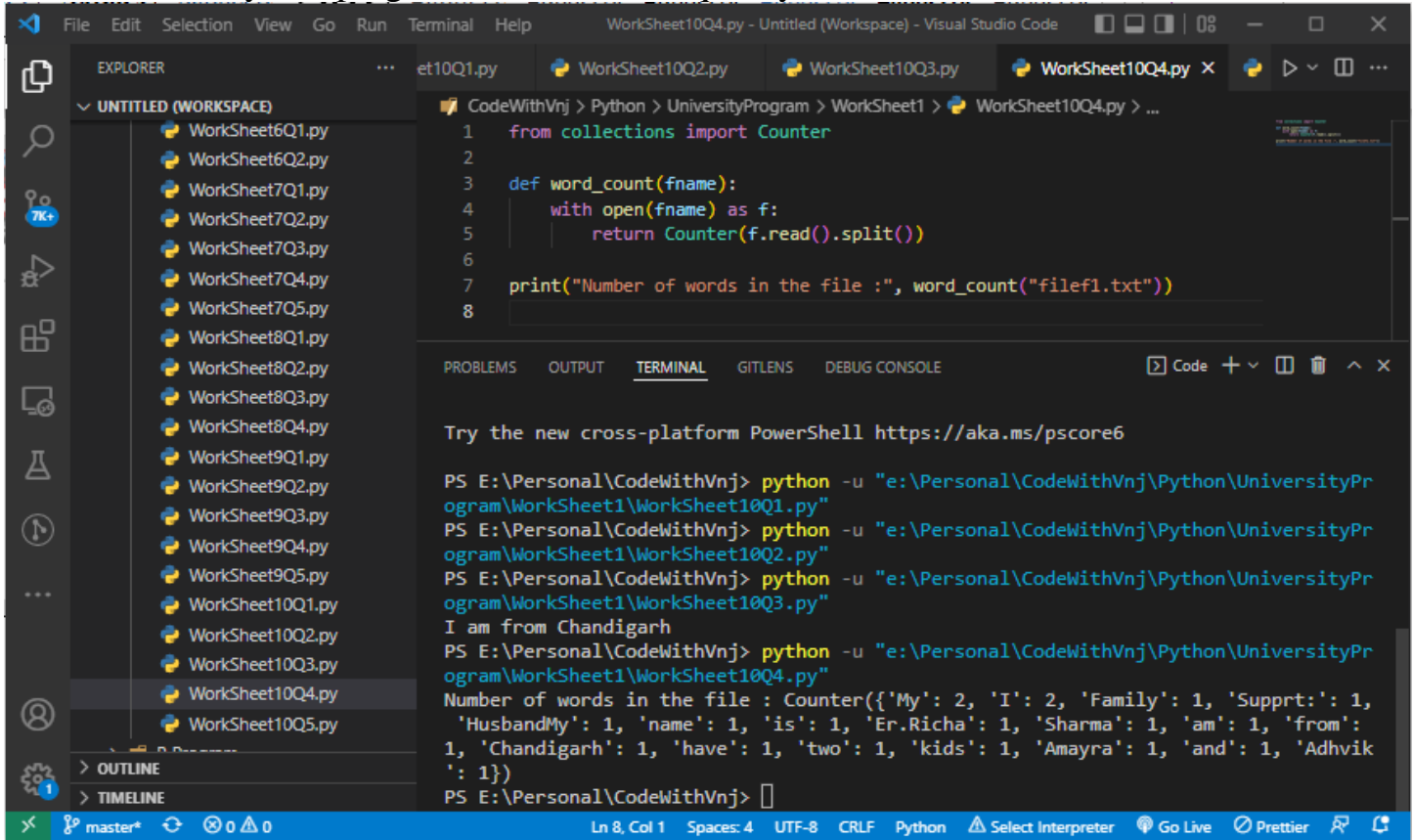
The Output panel at the bottom shows the execution of the program in a Windows PowerShell terminal:

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS E:\Personal\CodeWithVnj> python -u "e:\Personal\CodeWithVnj\Python\UniversityProgram\WorkSheet1\WorkSheet10Q1.py"
PS E:\Personal\CodeWithVnj> python -u "e:\Personal\CodeWithVnj\Python\UniversityProgram\WorkSheet1\WorkSheet10Q2.py"
PS E:\Personal\CodeWithVnj> python -u "e:\Personal\CodeWithVnj\Python\UniversityProgram\WorkSheet1\WorkSheet10Q3.py"
I am from Chandigarh
PS E:\Personal\CodeWithVnj>
```

IV. Write a Python program to count the frequency of words in a file.



```

1 from collections import Counter
2
3 def word_count(fname):
4     with open(fname) as f:
5         return Counter(f.read().split())
6
7 print("Number of words in the file :", word_count("filef1.txt"))
8

```

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

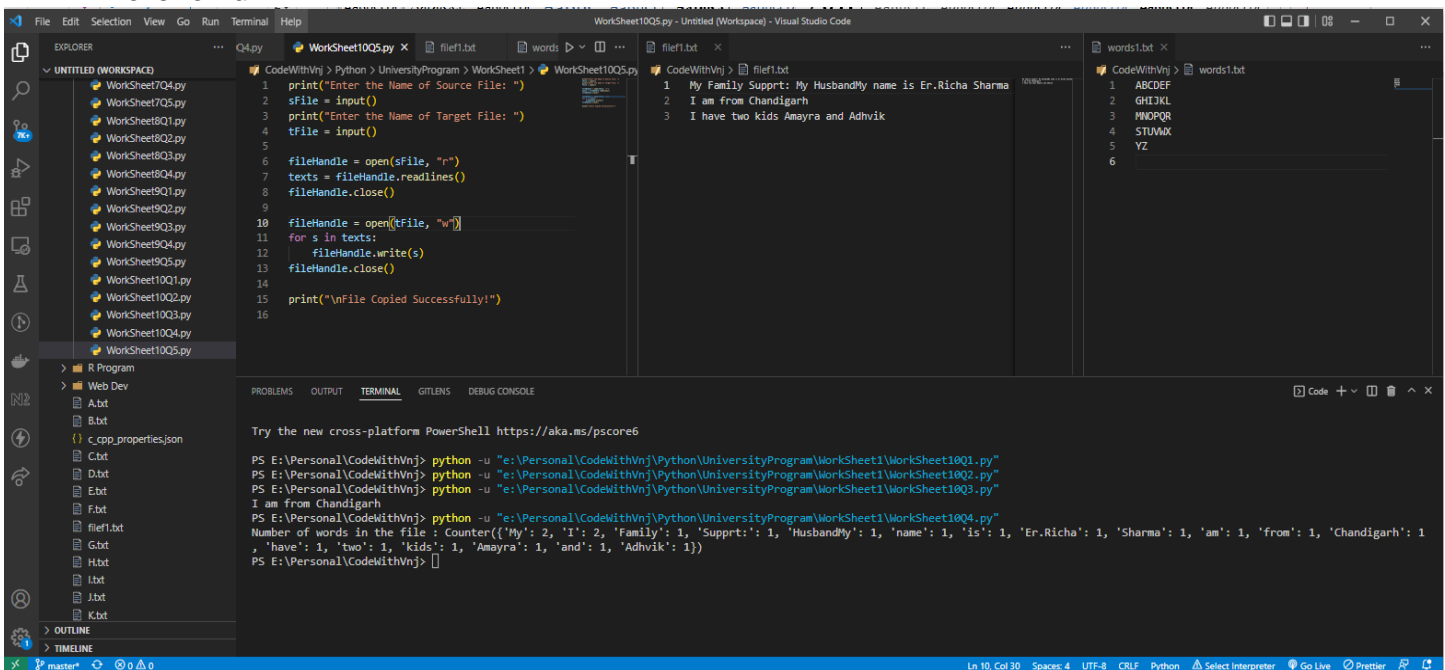
```

PS E:\Personal\CodeWithVnJ> python -u "e:\Personal\CodeWithVnJ\Python\UniversityProgram\Worksheet1\Worksheet10Q1.py"
PS E:\Personal\CodeWithVnJ> python -u "e:\Personal\CodeWithVnJ\Python\UniversityProgram\Worksheet1\Worksheet10Q2.py"
PS E:\Personal\CodeWithVnJ> python -u "e:\Personal\CodeWithVnJ\Python\UniversityProgram\Worksheet1\Worksheet10Q3.py"
I am from Chandigarh
PS E:\Personal\CodeWithVnJ> python -u "e:\Personal\CodeWithVnJ\Python\UniversityProgram\Worksheet1\Worksheet10Q4.py"
Number of words in the file : Counter({'My': 2, 'I': 2, 'Family': 1, 'Supprt': 1, 'HusbandMy': 1, 'name': 1, 'is': 1, 'Er.Richa': 1, 'Sharma': 1, 'am': 1, 'from': 1, 'Chandigarh': 1, 'have': 1, 'two': 1, 'kids': 1, 'Amayra': 1, 'and': 1, 'Adhvik': 1})
PS E:\Personal\CodeWithVnJ>

```

V. Write a Python program to copy the contents of a file to another file.

Before run



```

1 print("Enter the Name of Source File: ")
2 sfile = input()
3 print("Enter the Name of Target File: ")
4 tfile = input()
5
6 fileHandle = open(sfile, "r")
7 texts = fileHandle.readlines()
8 fileHandle.close()
9
10 fileHandle = open(tfile, "w")
11 for s in texts:
12     fileHandle.write(s)
13 fileHandle.close()
14
15 print("\nFile Copied Successfully!")
16

```

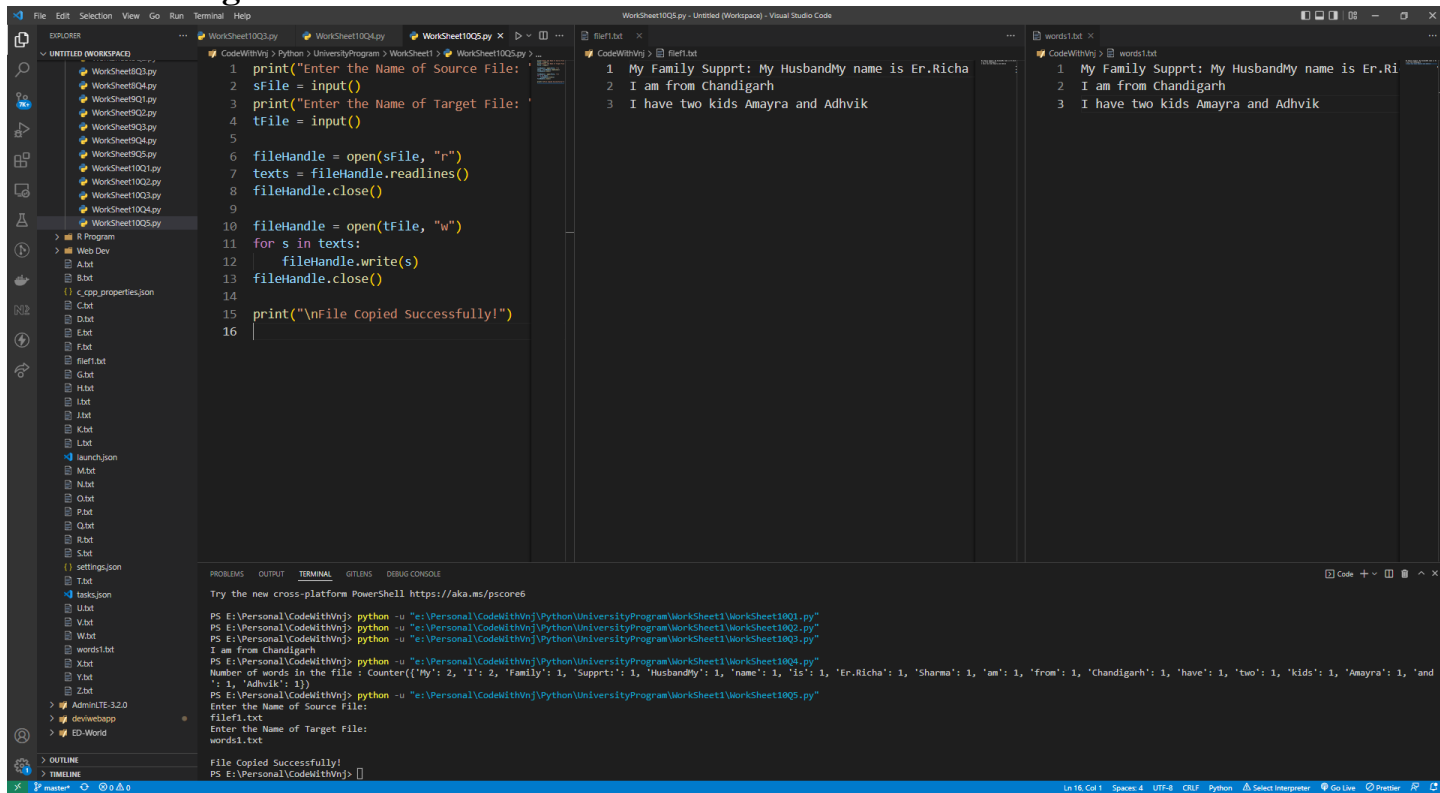
Try the new cross-platform PowerShell <https://aka.ms/pscore6>

```

PS E:\Personal\CodeWithVnJ> python -u "e:\Personal\CodeWithVnJ\Python\UniversityProgram\Worksheet1\Worksheet10Q1.py"
PS E:\Personal\CodeWithVnJ> python -u "e:\Personal\CodeWithVnJ\Python\UniversityProgram\Worksheet1\Worksheet10Q2.py"
PS E:\Personal\CodeWithVnJ> python -u "e:\Personal\CodeWithVnJ\Python\UniversityProgram\Worksheet1\Worksheet10Q3.py"
I am from Chandigarh
PS E:\Personal\CodeWithVnJ> python -u "e:\Personal\CodeWithVnJ\Python\UniversityProgram\Worksheet1\Worksheet10Q4.py"
Number of words in the file : Counter({'My': 2, 'I': 2, 'Family': 1, 'Supprt': 1, 'HusbandMy': 1, 'name': 1, 'is': 1, 'Er.Richa': 1, 'Sharma': 1, 'am': 1, 'from': 1, 'Chandigarh': 1, 'have': 1, 'two': 1, 'kids': 1, 'Amayra': 1, 'and': 1, 'Adhvik': 1})
PS E:\Personal\CodeWithVnJ>

```


After Running:



The screenshot shows a Visual Studio Code workspace with a Python script named `WorkSheet1005.py` and its execution output in the terminal.

Python Script (`WorkSheet1005.py`):

```
1 print("Enter the Name of Source File:")
2 sfile = input()
3 print("Enter the Name of Target File:")
4 tfile = input()
5
6 fileHandle = open(sfile, "r")
7 texts = fileHandle.readlines()
8 fileHandle.close()
9
10 fileHandle = open(tfile, "w")
11 for s in texts:
12     fileHandle.write(s)
13 fileHandle.close()
14
15 print("\nFile Copied Successfully!")
16
```

Terminal Output:

```
Try the new cross-platform PowerShell https://aka.ms/powershell
PS E:\Personal\CodeWithWn\Python\UniversityProgram\WorkSheet\WorkSheet1001.py> python -u "e:\Personal\CodeWithWn\Python\UniversityProgram\WorkSheet\WorkSheet1001.py"
PS E:\Personal\CodeWithWn\Python\UniversityProgram\WorkSheet\WorkSheet1002.py> python -u "e:\Personal\CodeWithWn\Python\UniversityProgram\WorkSheet\WorkSheet1002.py"
PS E:\Personal\CodeWithWn\Python\UniversityProgram\WorkSheet\WorkSheet1003.py> python -u "e:\Personal\CodeWithWn\Python\UniversityProgram\WorkSheet\WorkSheet1003.py"
I am from Chandigarh
PS E:\Personal\CodeWithWn\Python\UniversityProgram\WorkSheet\WorkSheet1004.py> python -u "e:\Personal\CodeWithWn\Python\UniversityProgram\WorkSheet\WorkSheet1004.py"
Number of words in the file : Counter({'My': 2, 'I': 2, 'Family': 1, 'Supprt': 1, 'Husbandly': 1, 'name': 1, 'is': 1, 'Er.Richa': 1, 'Sharma': 1, 'am': 1, 'from': 1, 'Chandigarh': 1, 'have': 1, 'two': 1, 'kids': 1, 'Amayra': 1, 'and': 1, 'Adhvik': 1})
PS E:\Personal\CodeWithWn\Python\UniversityProgram\WorkSheet\WorkSheet1005.py> python -u "e:\Personal\CodeWithWn\Python\UniversityProgram\WorkSheet\WorkSheet1005.py"
Enter the Name of Source File:
filefi.txt
Enter the Name of Target File:
words1.txt
File Copied Successfully!
PS E:\Personal\CodeWithWn\Python\UniversityProgram\WorkSheet\WorkSheet1005.py>
```

Learning outcomes (What I have learnt):

1. I have learnt, how to create the and manipulate the files.
2. I have learnt how to do all operation with python.

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

| Sr. No. | Parameters | Marks Obtained | Maximum Marks |
|---------|------------|----------------|---------------|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |