Name : Shawn Louis **Batch : B** **Roll No : 31**

Experiment No: 9

Topic:	Program To Demonstrate File Handling in Python.
Prerequisite:	Knowledge of some programming language like C, Java, basic file handling operations
Mapping With COs:	CSL405.4
Objective:	Creating, reading, updating, and deleting files using Python functions.
Outcome:	Students will have the skills to handle various file operations using Python.
Bloom's Taxonomy :	Apply
Theory/ Steps/ Algorithm/ Procedure:	File handling is an important part of any web application. Python has several functions for creating, reading, updating, and deleting files. **File Handling** The key function for working with files in Python is the open() function. The open() function takes two parameters; *filename*, and *mode*. There are four different methods (modes) for opening a file: "r" - Read - Default value. Opens a file for reading, error if the file does not exist "a" - Append - Opens a file for appending, creates the file if it does not exist "w" - Write - Opens a file for writing, creates the file if it does not exist "x" - Create - Creates the specified file, returns an error if the file exists In addition you can specify if the file should be handled as binary or text mode "t" - Text - Default value. Text mode "b" - Binary - Binary mode (e.g. images) Syntax To open a file for reading it is enough to specify the name of the file: f = open("demofile.txt")

The code above is the same as:

```
f = open("demofile.txt", "rt")
```

Because "r" for read, and "t" for text are the default values, you do not need to specify them.

Note: Make sure the file exists, or else you will get an error.

Open a File on the Server

Assume we have the following file, located in the same folder as Python:

demofile.txt

```
Hello! Welcome to demofile.txt
This file is for testing purposes.
Good Luck!
```

To open the file, use the built-in open() function.

The open() function returns a file object, which has a read() method for reading the content of the file:

Example: **Open the file:**

```
f = open("demofile.txt", "r")
print(f.read())
```

Read Only Parts of the File

By default the read() method returns the whole text, but you can also specify how many characters you want to return:

Example: **Return the 5 first characters of the file:**

```
f = open("demofile.txt", "r")
print(f.read(5))
```

Read Lines

You can return one line by using the readline() method:

Example: **Read one line of the file:**

```
f = open("demofile.txt", "r")
print(f.readline())
```

By calling readline() two times, you can read the two first lines:

Example: **Read two lines of the file:**

```
f = open("demofile.txt", "r")
print(f.readline())
print(f.readline()
```

By looping through the lines of the file, you can read the whole file, line by line:

Example: **Loop through the file line by line:**

```
f = open("demofile.txt", "r")
for x in f:
  print(x)
```

Close Files

It is a good practice to always close the file when you are done with it.

Example: **Close the file when you are finish with it:**

```
f = open("demofile.txt", "r")
print(f.readline())
f.close()
```

Note: You should always close your files, in some cases, due to buffering, changes made to a file may not show until you close the file.

Write to an Existing File

To write to an existing file, you must add a parameter to the open() function:

"a" - Append - will append to the end of the file

"w" - Write - will overwrite any existing content

Example: **Open the file "demofile2.txt" and append content to the file:**

```
f = open("demofile2.txt", "a")
f.write("Now the file has more content!")
f.close()

#open and read the file after the appending:
f = open("demofile2.txt", "r")
print(f.read())
```

Example: **Open the file "demofile3.txt" and overwrite the content:**

```
f = open("demofile3.txt", "w")
f.write("Woops! I have deleted the content!")
f.close()

#open and read the file after the appending:
f = open("demofile3.txt", "r")
print(f.read())
```

Create a New File

To create a new file in Python, use the open() method, with one of the following parameters:

"x" - Create - will create a file, returns an error if the file exist

"a" - Append - will create a file if the specified file does not exist

"w" - Write - will create a file if the specified file does not exist

Example

Create a file called "myfile.txt":

```
f = open("myfile.txt", "x")
```

Result: a new empty file is created!

Example: **Create a new file if it does not exist:**

```
f = open("myfile.txt", "w")
```

Delete a File

To delete a file, you must import the OS module, and run its os.remove() function:

Example:**Remove the file "demofile.txt":**

```
import os
os.remove("demofile.txt")
```

Check if File exist:

To avoid getting an error, you might want to check if the file exists before you try to delete it:

Example: **Check if file exists, *then* delete it:**

```
import os
if os.path.exists("demofile.txt"):
  os.remove("demofile.txt")
else:
  print("The file does not exist")
```

Delete Folder

To delete an entire folder, use the os.rmdir() method:

Example: **Remove the folder "myfolder":**

```
import os
os.rmdir("myfolder")
```

Note: You can only remove empty folders.

Experiments:

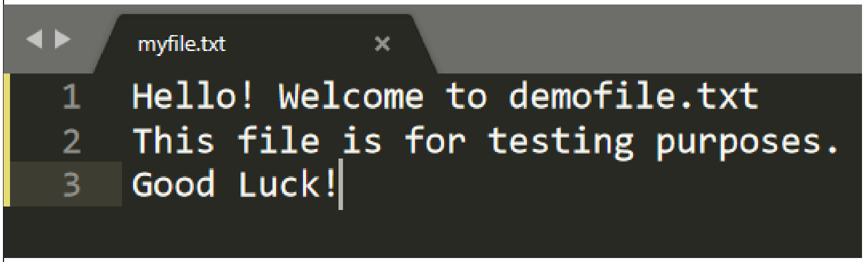
1. Practice all the small Examples mentioned in the Theory/Steps/ Algorithm/ Procedure-Section of the same document.

2. Write a Python Program to open a file called File1.txt, and then read through the file line-by-line. Add few more lines to the file, rename the file “Newfile.txt” and then print the content of the file.

3. Write a Python Program to merge two files into a third file.

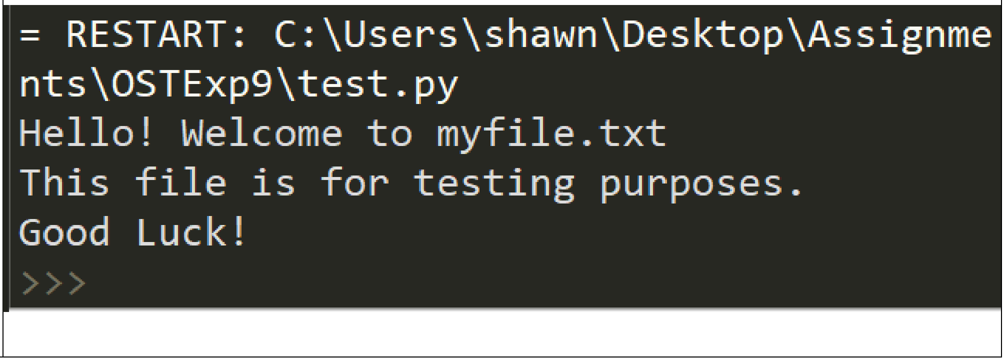
Deliverables:

1. Practice all the small Examples mentioned in the Theory/Steps/ Algorithm/ Procedure-Section of the same document.



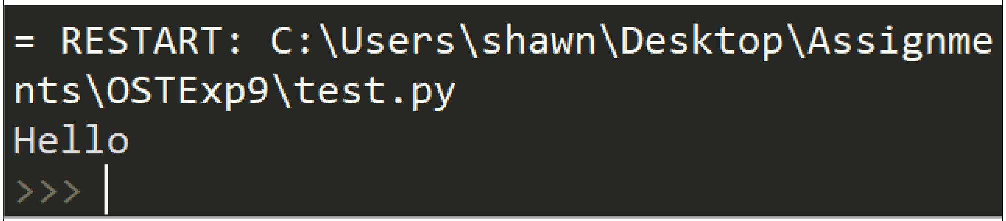
```
Hello! Welcome to demofile.txt
This file is for testing purposes.
Good Luck!
```

```
import os
fileName = "myfile.txt"
if os.path.isfile(fileName):
    f = open(fileName)
    print(f.read())
    f.close()
else:
    print(fileName + ' does not exist')
```



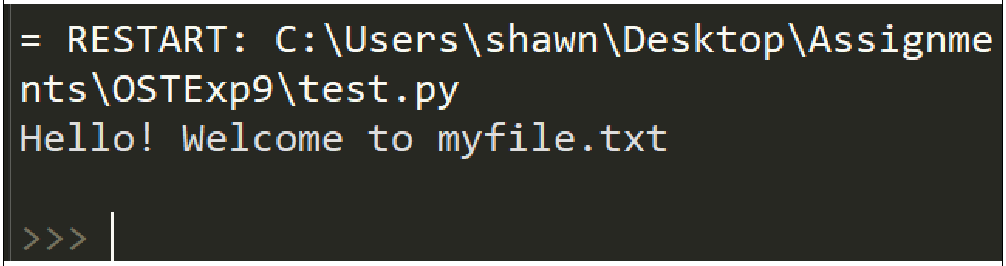
```
= RESTART: C:\Users\shawn\Desktop\Assignme
nts\OSTExp9\test.py
Hello! Welcome to myfile.txt
This file is for testing purposes.
Good Luck!
>>>
```

```
import os
fileName = "myfile.txt"
if os.path.isfile(fileName):
    f = open(fileName)
    print(f.read(5))
    f.close()
else:
    print(fileName + ' does not exist')
```



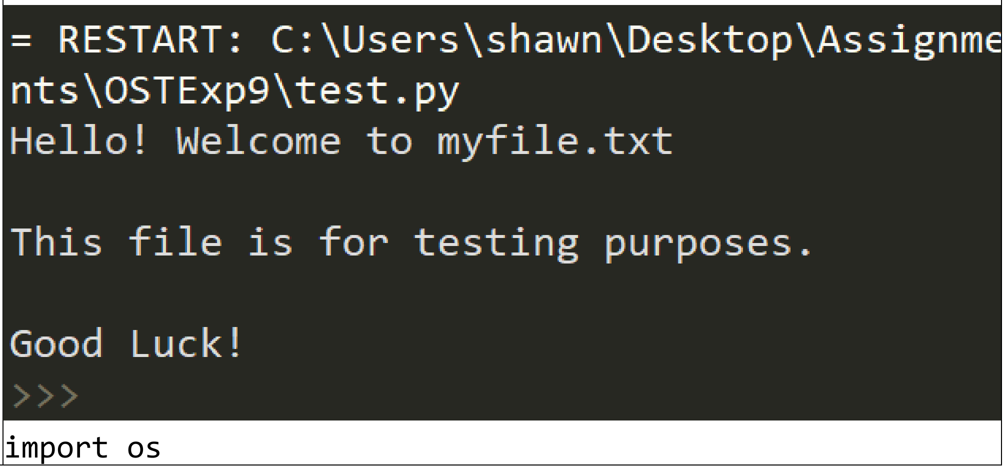
```
= RESTART: C:\Users\shawn\Desktop\Assignme
nts\OSTExp9\test.py
Hello
>>> 
```

```
import os
fileName = "myfile.txt"
if os.path.isfile(fileName):
    f = open(fileName)
    print(f.readline())
    f.close()
else:
    print(fileName + ' does not exist')
```



```
= RESTART: C:\Users\shawn\Desktop\Assignme
nts\OSTExp9\test.py
Hello! Welcome to myfile.txt

>>> 
```

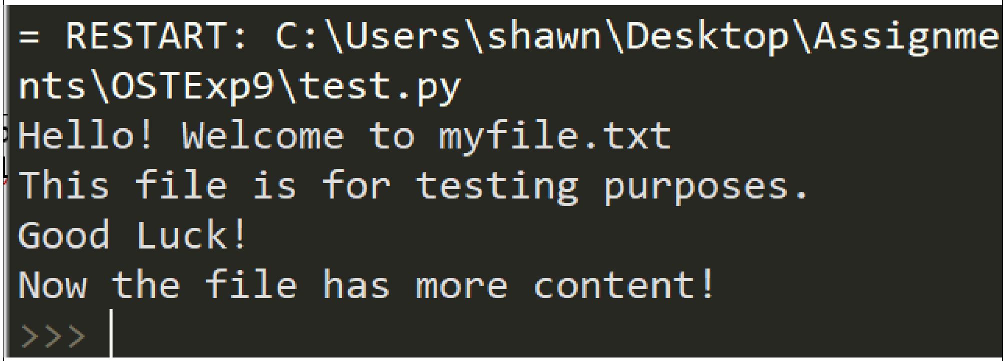
```
import os
fileName = "myfile.txt"
if os.path.isfile(fileName):
    f = open(fileName)
    for x in f:
        print(x)
    f.close()
else:
    print(fileName + ' does not exist')
```



```
= RESTART: C:\Users\shawn\Desktop\Assignme
nts\OSTExp9\test.py
Hello! Welcome to myfile.txt

This file is for testing purposes.

Good Luck!
>>>
```

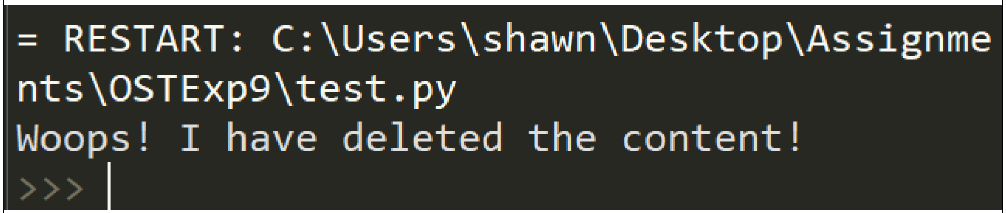
```
import os
```

```
fileName = "myfile.txt"
if os.path.isfile(fileName):
    f = open(fileName, 'a')
    f.write('\n'+"Now the file has more content!")
    f.close()
    f = open(fileName)
    print(f.read())
    f.close()
else:
    print(fileName + ' does not exist')
```



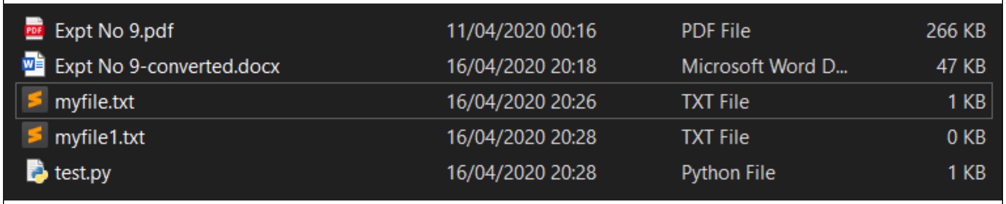
```
= RESTART: C:\Users\shawn\Desktop\Assignme
nts\OSTExp9\test.py
Hello! Welcome to myfile.txt
This file is for testing purposes.
Good Luck!
Now the file has more content!
>>>
```

```
import os
fileName = "myfile.txt"
if os.path.isfile(fileName):
    f = open(fileName, 'w')
    f.write("Woops! I have deleted the content!")
    f.close()
    f = open(fileName)
    print(f.read())
    f.close()
else:
    print(fileName + ' does not exist')
```



```
= RESTART: C:\Users\shawn\Desktop\Assignme
nts\OSTExp9\test.py
Woops! I have deleted the content!
>>>
```

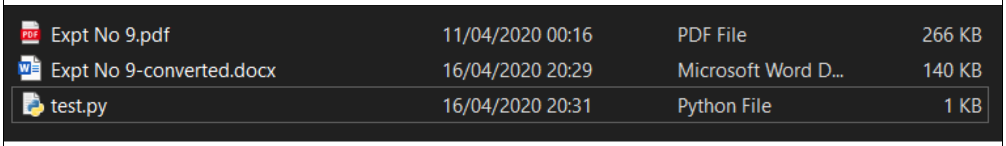
```
f = open("myfile1.txt", 'x')
OR
f = open(“myfile1.txt”, ‘w’)
```



Expt No 9.pdf	11/04/2020 00:16	PDF File	266 KB
Expt No 9-converted.docx	16/04/2020 20:18	Microsoft Word D...	47 KB
myfile.txt	16/04/2020 20:26	TXT File	1 KB
myfile1.txt	16/04/2020 20:28	TXT File	0 KB
test.py	16/04/2020 20:28	Python File	1 KB

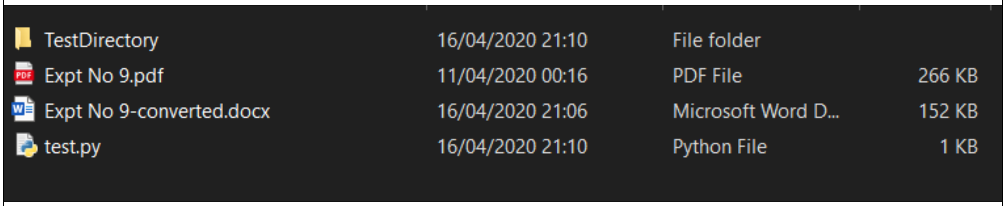
```
import os
```

```
fileName = "myfile.txt"
if os.path.isfile(fileName):
    os.remove(fileName)
else:
    print(fileName + ' does not exist')
```



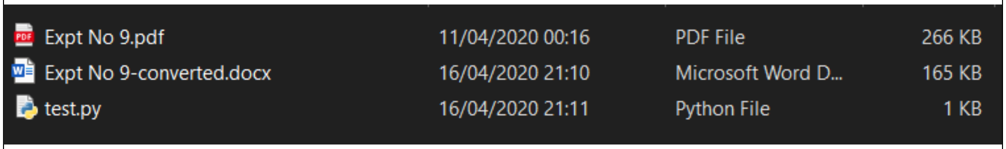
Expt No 9.pdf	11/04/2020 00:16	PDF File	266 KB
Expt No 9-converted.docx	16/04/2020 20:29	Microsoft Word D...	140 KB
test.py	16/04/2020 20:31	Python File	1 KB

```
import os
os.mkdir('TestDirectory')
```



TestDirectory	16/04/2020 21:10	File folder	
Expt No 9.pdf	11/04/2020 00:16	PDF File	266 KB
Expt No 9-converted.docx	16/04/2020 21:06	Microsoft Word D...	152 KB
test.py	16/04/2020 21:10	Python File	1 KB

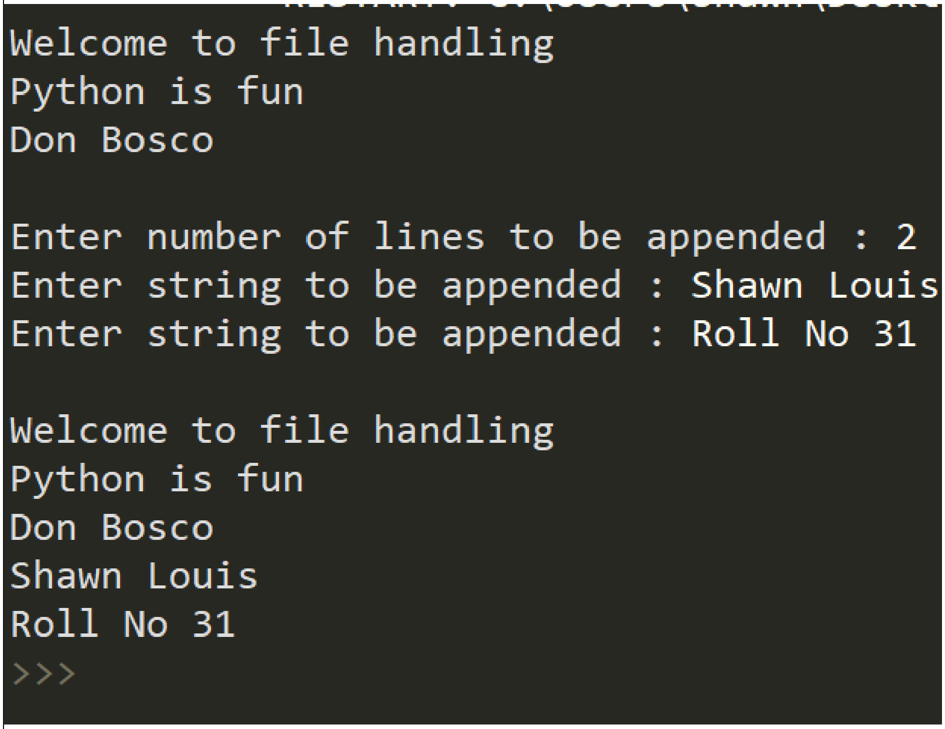
```
import os
os.rmdir(‘TestDirectory’)
```



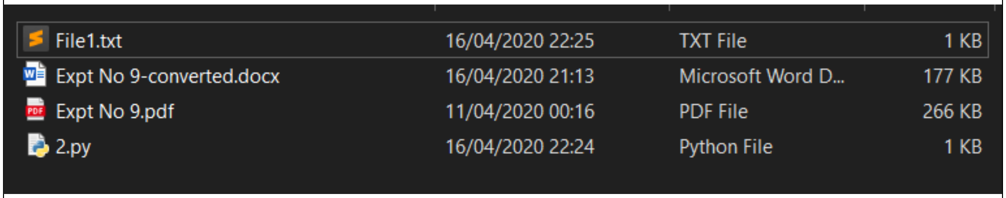
Expt No 9.pdf	11/04/2020 00:16	PDF File	266 KB
Expt No 9-converted.docx	16/04/2020 21:10	Microsoft Word D...	165 KB
test.py	16/04/2020 21:11	Python File	1 KB

2. Write a Python Program to open a file called File1.txt, and then read through the file line-by-line. Add few more lines to the file, rename the file “Newfile.txt” and then print the content of the file.

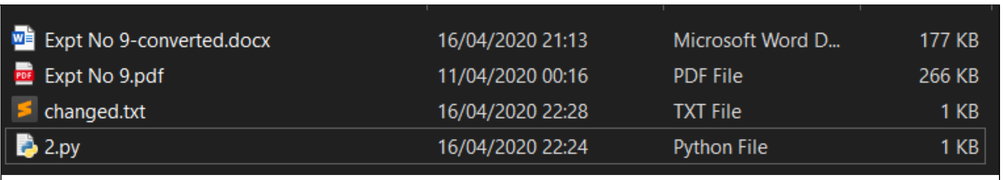
```
import os

fileName = "File1.txt"

if os.path.isfile(fileName):

    f = open(fileName, 'r')

    for x in f:

        print(x.rstrip())

    f.close()



    f = open(fileName, 'a')

    n = int(input("\nEnter number of lines to be
appended : "))

    for i in range(0, n):
        string = input("Enter string to be appended : ")
        f.write('\n' + string)
    f.close()


    newName = 'changed.txt'
    os.rename(fileName, newName)
    f = open(newName, 'r')
    print()
    print(f.read())
    f.close()
else:
    print(fileName + ' does not exist')
```



```
Welcome to file handling
Python is fun
Don Bosco

Enter number of lines to be appended : 2
Enter string to be appended : Shawn Louis
Enter string to be appended : Roll No 31

Welcome to file handling
Python is fun
Don Bosco
Shawn Louis
Roll No 31
>>>
```



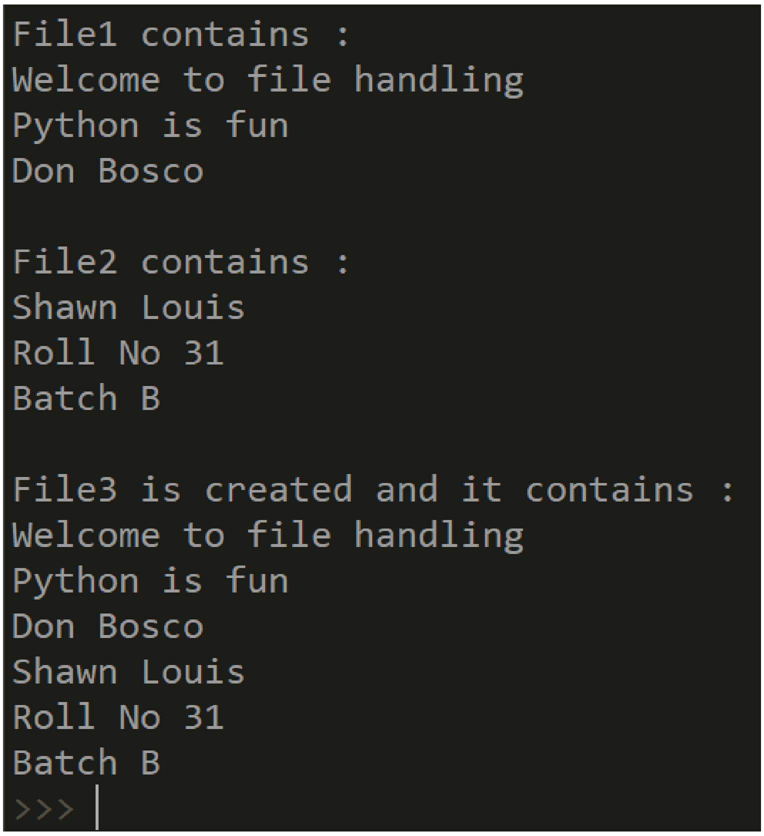
File1.txt	16/04/2020 22:25	TXT File	1 KB
Expt No 9-converted.docx	16/04/2020 21:13	Microsoft Word D...	177 KB
Expt No 9.pdf	11/04/2020 00:16	PDF File	266 KB
2.py	16/04/2020 22:24	Python File	1 KB



Expt No 9-converted.docx	16/04/2020 21:13	Microsoft Word D...	177 KB
Expt No 9.pdf	11/04/2020 00:16	PDF File	266 KB
changed.txt	16/04/2020 22:28	TXT File	1 KB
2.py	16/04/2020 22:24	Python File	1 KB

3. Write a Python Program to merge two files into a third file.

```
import os

file1 = "File1.txt"
file2 = "File2.txt"
file3 = "File3.txt"

if os.path.isfile(file1 and file2):
    with open(file1) as f:
        content1 = f.read()
        print("File1 contains : ")
        print(content1)
    with open(file2) as f:
        content2 = f.read()
        print("\nFile2 contains : ")
        print(content2)
    with open(file3, 'w+') as f:
        f.write(content1 + '\n' + content2)
        f.seek(0)
        print("\nFile3 is created and it contains : ")
        print(f.read())

else:
    print(fileName + ' does not exist')
```



```
File1 contains :
Welcome to file handling
Python is fun
Don Bosco

File2 contains :
Shawn Louis
Roll No 31
Batch B

File3 is created and it contains :
Welcome to file handling
Python is fun
Don Bosco
Shawn Louis
Roll No 31
Batch B
>>>
```

Conclusion:	Thus we have successfully able to create, reading, update, and delete files using Python functions.
References:	https://www.w3schools.com/python/python_file_handling.asp

Don Bosco Institute of Technology
Department of Computer Engineering

Academic year – 2019-20

Open Source Technology Lab

Assessment Rubric for Experiment No.: 9

Performance Date :
Submission Date :

Title of Experiment : Program To Demonstrate File Handling in Python

Year and Semester : 2nd Year and IVth Semester

Batch : Computer

Name of Student : **Shawn Louis**

Roll No. : **31**

Performance	**Poor**	**Satisfactory**	**Good**	**Excellent**	**Total**
	2 points	3 points	4 points	5 points	
Results and Documentations	**Poor**	**Satisfactory**	**Good**	**Excellent**	
	2 points	3 points	4 points	5 points	
Timely Submission	**Submission beyond 14 days of the deadline**	**Late submission till 14 days**	**Late submission till 7 days**	**Submission on time**	
	2 points	3 points	4 points	5 points	

Signature

(Sana Shaikh)