Experiment No. 5
Exploring Files and directories: Python program to append data to existing file and then display the entire file
Date of Performance:
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Title: Exploring Files and directories: Python program to append data to existing file and then display the entire file

Aim: To Exploring Files and directories: Python program to append data to existing file and then display the entire file

Objective: To Exploring Files and directories

Theory:

Directory also sometimes known as a folder are unit organizational structure in computer's file system for storing and locating files or more folders. Python now supports a number of APIs to list the directory contents. For instance, we can use the Path.iterdir, os.scandir, os.walk, Path.rglob, or os.listdir functions.

Python too supports file handling and allows users to handle files i.e., to read and write files, along with many other file handling options, to operate on files. The concept of file handling has stretched over various other languages, but the implementation is either complicated or lengthy, but alike other concepts of Python, this concept here is also easy and short. Python treats file differently as text or binary and this is important. Each line of code includes a sequence of characters and they form text file. Each line of a file is terminated with a special character, called

the EOL or End of Line characters like comma {,} or newline character. It ends the current line and tells the interpreter a new one has begun. Let's start with Reading and Writing files.

Working of open() function

We use open () function in Python to open a file in read or write mode. As explained above, open ( ) will return a file object. To return a file object we use open() function along with two arguments, that accepts file name and the mode, whether to read or write. So, the syntax being: open(filename, mode). There are three kinds of mode, that Python provides and how files can be opened:

" r ", for reading.

" w ", for writing.

" a ", for appending.

" r+ ", for both reading and writing

Code:

```
#file read

f = open("demofile.txt", "r")

str = f.read()

print(str)

#file append

f = open("demofile.txt", "a")

f.write("Now the file has more content!")

f.close()

f = open("demofile.txt", "r")

print(f.read())
```

```
#file write

f = open("demofile.txt", "w")

f.write("Woops! I have deleted the content!")

f.close()

f = open("demofile.txt", "r")

print(f.read())

def count_words_lines_chars(file_name):

    word_count = 0

    line_count = 0

    char_count = 0


    with open(file_name, 'r') as file:

        for line in file:

            words = line.split()

            word_count += len(words)

            line_count += 1

            char_count += sum(len(word) for word in words)


    return word_count, line_count, char_count

file_name = 'demofile.txt'

word_count, line_count, char_count = count_words_lines_chars(file_name)
```

```
print("Number of words:", word_count)

print("Number of lines:", line_count)

print("Number of characters:", char_count)
```

New directory:

```
>>> os.mkdir('demo')

>>> os.listdir()

        ['demo', 'DLLs', 'Doc', 'include', 'Lib', 'libs', 'LICENSE.txt', 'NEWS.txt', 'python.exe', 'python3.dll', 'python312.dll', 'pythonw.exe', 'Scripts', 'tcl', 'vcruntime140.dll', 'vcruntime140_1.dll']
```

Search directory:

```
>>> import os

>>> print(os.getcwd())

        C:\Users\Student\AppData\Local\Programs\Python\Python312
```

Change directory:

```
>>> os.chdir('C:\\python')

>>> print(os.getcwd())

        C:\python
```

Rename directory:

```
>>> os.listdir()

        ['1.py', '2.py', 'fact.py.txt', 'filehand.txt', 'imp.py', 'importMod.py', 're.py', '__pycache__']

>>> os.rename('1.py','demo')

>>> os.listdir()
```

['2.py', 'demo', 'fact.py.txt', 'filehand.txt', 'imp.py', 'importMod.py', 're.py', '__pycache__']

Regular expressions

1.search

```
>>> import re
>>> str = 'cat rat mat man mop'
>>> result = re.search(r'm\w\w',str)
>>> print(result.group())
        mat
```

2.findall

```
>>> result = re.findall(r'm\w\w',str)
>>> print(result)
        ['mat', 'man', 'mop']
```

3.match

```
>>> import re
>>> str = 'cat rat mat man mop'
>>> str1='mat cat rat sat'
>>> result = re.match(r'm\w\w',str1)
>>> print(result.group())
        mat
>>> str1 = ['mat','cat','rat']
>>> result = re.match(r'm\w\w',str)
```

```
>>> print(result)
```

None

Output:

File read,write and append

```
C:\Users\Student\PycharmProjects\pythonProject2\venv\Scripts\python.exe C:\Users\Student\PycharmProjects\pythonProject2\main.py
hello vcet!!!
this is the vcet lab
Woops! I have deleted the content!
hello vcet!!!
this is the vcet lab
Woops! I have deleted the content!Now the file has more content!
Woops! I have deleted the content!

Process finished with exit code 0
```

Count the lines,words and characters of string

```
C:\Users\Student\PycharmProjects\pythonProject2\venv\Scripts\python.exe C:\Users\Student\PycharmProjects\pythonProject2\main.py
Number of words: 6
Number of lines: 1
Number of characters: 29

Process finished with exit code 0
```

Conclusion:

File handling: By the concept of file handling in python we performed the following operations on file:

1.read

2.write

3.append

The other part of the code is to calculate the number of lines, words and characters of the file.

Directory in python: various operation related to the directory are performed in this experiment.