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SUBJECT: OSTL

STD: SE COMPS(B)

ROLL NO: 12

**Experiment No: 7.**

**AIM:** Exploring Files and directories:

1. Python program to append data to existing file and then display the entire file
2. Python program to count number of lines, words and characters in a file.
3. Python program to display file available in current directory
4. Python program to know the currently working directory

**Tools Used:** Python 3.4.3, Terminal

**Theory:**

**Explain Files in python**

1. A location within the disk, where logically related information is stored is called file.
2. Data is stored permanently under non-volatile memory in the form of files.
3. Nonvolatile memory, such as the hard disk, retains the data even when the power is off. Random access memory (RAM) cannot be used to store data as they are volatile in nature and lose the content on turning off the system.
4. The files stored in a computer system can be used by computer programs, which can access the file using a path and a unique name.
5. Every file holds a unique name and different path.
6. In programming languages like C and C++, programmers are required to import predefined libraries for reading and writing the files.
7. The same is not true in case of Python, where you can directly use the file operation functions.
8. The sequence, which is to be followed while working with files in Python is: open a file, perform the operation, and finally close the file.

**What are the different modes of file?**

The different modes of operating a file are:

1. Write (w)
2. Read (r)
3. Append (a)
4. Write plus Read (w+)
5. Read plus Write (r+)
6. Append plus Read (a+)
7. Exclusive Creation (x)

**Explain dictionaries in python**

A dictionary is a set of elements arranged in the form of key-value pairs.

In the dictionary ,the first element is considered as the ‘key’ and the immediate value is considered as the ‘value’

The key and its value is separated by a colon (:). All key-value pairs in a dictionary are inserted within the curly braces { }.

Ex: dict={1:”Alpha”,2:”Beta”,3:”Gamma”}

**Explain the module that is required to work with directories.**

The OS module in python provides functions for interacting with the operating system. OS, comes under Python’s standard utility modules. This module provides a portable way of using operating system dependent functionality. The os and os.path modules include many functions to interact with the file system.

Following are some functions in OS module

os.name: This function gives the name of the operating system dependent module imported.

os.getcwd(): This function , returns the Current Working Directory(CWD) of the file used to execute the code, can vary from system to system

os.popen(): This method opens a pipe to or from command. The return value can be read or written depending on whether mode is ‘r’ or ‘w’.OUTPUT:

**Explain other implementations for the OS module (Mention atleast 3)**

* The “os” module has the system() method that is useful to run an executable program from our Python program.
* This method is similar to system() function of C language. It is used as system(“string”) where “string” represents any command or executable file name.
* os.system(“dir”) #display directory contents on DOS operating system
* os.system(“python demo.py”) #run demo.py program

**CODE:**

1. **Python program to append data to existing file and then display the entire file**

**CODE**

f=open("file1.txt",'a+')

print("Enter text to append (Enter / on a separate line to end)")

while str!='/':

str=input()

if str !='/':

f.write(str+"\n")

f.seek(0,0)

print("File Contents are : ")

str=f.read()

print(str)

f.close()

**OUTPUT**

Enter text to append (Enter / on a separate line to end)

This is file handling in python

currently using append+ mode

/

File Contents are :

This is file handling in python

currently using append+ mode

1. **Python program to count number of lines, words and characters in a file.**

**CODE**

import os,sys

fn=input("Enter file name with extension ")

if os.path.isfile(fn):

f=open(fn,'r')

else:

print('file doesnt exist')

sys.exit()

l=w=c=0

for line in f:

words=line.split()

l+=1

w+=len(words)

c+=len(line)

print("No of lines :",l)

print("No of words :",w)

print("No of Characters :",c)

f.close()

**OUTPUT**

Enter file name with extension file1.txt

No of lines : 2

No of words : 10

No of Characters : 61

Enter file name with extension newfile.txt

file doesnt exist

1. **Python program to display file available in current directory**

**CODE**

import os

for filenames in os.walk('.'):

print('Files :',filenames)

**OUTPUT-**

Files : ('.', ['.ipynb\_checkpoints'], ['exp 7.ipynb', 'exp 8.ipynb', 'file1.txt'])

Files : ('.\\.ipynb\_checkpoints', [], ['exp 7-checkpoint.ipynb', 'exp 8-checkpoint.ipynb'])

1. **Python program to know the currently working directory**

**CODE:**

import os

print(os.getcwd())

**OUTPUT**

C:\Users\sumayya khan\Desktop\python

**CONCLUSION:**

Thus we have studied and successfully explored files and directories in Python.