File Handling in Python

1.File handling is a mechanism to store the data on the disk permanently.

2.There are several functions for creating ,reading,writing ,updating and deleting files.

Operation on File

1.Opening of file.

2.Writing into a file.

3.Appending data into a file.

4.Reading from a file.

5.Closing of file.

File Opening Modes

In Python File can be open in different mode to perform read and write operation on a file.open() function is used to open a file,open function takes two arguments.

open(filename,open mode); for example if you want to open easy.txt file in writing mode then you should write

```
fileptr = open("easy.txt","w")
```

Different file opening mode is given below

S.No.	Mode	Description
1.	w	Open a file for writing Creates a new file if it does not exist or truncates the file if it exists.
2.	a	Open a file for appending data at the end of file. It does not truncate the file. It creates new file if file does not exist.
3.	r	Open a file for reading.
4.	t	Opens a file in text mode.
5.	b	Opens a file in binary mode.
6.	w+	Opens a file for both writing and reading.
7.	r+	Opens a file for both reading and writing. The file pointer placed at the beginning of the file.

Writing into a file

write() function is used to write content to a file.

```
# open the easy.txt file in D drive in write mode
# Creates a new file if no such file exists.
fileptr = open("D:/easy.txt", "w");
# Overwriting  the content to the file
fileptr.write("Hello friends how are you?")
# closing the opened file
fileptr.close();
**File Output**
Hello friends how are you?
"""
```

Appending data into a file

```
# open the easy.txt file in D drive in append mode
# Creates a new file if no such file exists.
fileptr = open("D:/easy.txt", "a");
# Appending the content to the file
fileptr.write("\nI am fine and how are you?")
# closing the opened file
fileptr.close();
"""
**File Output**
Hello friends how are you?
I am fine and how are you?
"""
```

Reading from a file

Reading all the contents of the file

- **read() function is used read content of a file.**
- **Syntax of read() function:read(count).**
- **Here count is number of bytes to be read from the file starting from the beginning of file.**
- **count is optional.**
- **If the count is not specified, then it may read the content of the file until the end.**

```
# open the easy.txt file of D drive in read mode
fileptr = open("D:/easy.txt", "r");
# Reading the content of the file
#and storing into a variable
filedata=fileptr.read()
print("File data:",filedata)
# closing the opened file
fileptr.close();
"""
**File Output**
File data: Hello friends how are you?
I am fine and how are you?
"""
```

Reading 10 bytes from the file

```
# open the easy.txt file of D drive in read mode
fileptr = open("D:/easy.txt", "r");
# Reading 10 bytes of the file
#and storing into a variable
filedata=fileptr.read(10)
print("10 bytes of the file is :",filedata)
# closing the opened file
fileptr.close();
"""
**File Output**
10 bytes of the file is : Hello frie
"""
```

Reading lines from the file

readline() function is used to read a file line by line from the beginning of the file.

```
# open the easy.txt file of D drive in read mode
fileptr = open("D:/easy.txt", "r");
# Reading lin1 of the file
line1=fileptr.readline()
print("Line1:",line1)
# closing the opened file
fileptr.close();
"""
**File Output**
Line1: Hello friends how are you?
"""
```

Reading two lines from the file

readline() function is used to read a file line by line from the beginning of the file.

If we want to read two lines of the file then just use readline() method two times.

```
# open the easy.txt file of D drive in read mode
fileptr = open("D:/easy.txt", "r");
# Reading lin1 of the file
line1=fileptr.readline()
line2=fileptr.readline()
print("Line1:",line1)
print("Line2:",line2)
# closing the opened file
fileptr.close();
"""
**File Output**
Line1: Hello friends how are you?
Line2: I am fine and how are you?
"""
```

Example: Count number of characters in a file

```
#suppose the file content is
#myeasy456@gmail.com
# open the easy.txt file of D drive in read mode
fileptr = open("D:/easy.txt", "r");
# Reading content of the file
filecontent=fileptr.read()
#initializing the counter with 0
count=0
#loop through filecontent
for i in filecontent:
    #incrementing the counter
    count=count+1;
print("Total Characters:",count)
# closing the opened file
fileptr.close();
"""
**File Output**
Total Characters: 19
"""
```

Example: Count number of alphabtes in a file

```
#suppose the file content is
#myeasy456@gmail.com
# open the easy.txt file of D drive in read mode
fileptr = open("D:/easy.txt", "r");
# Reading content of the file
filecontent=fileptr.read()
#initializing the counter with 0
count=0
#loop through filecontent
for i in filecontent:
    #condition for alphabet
    if i.isalpha():
     #incrementing the counter
     count=count+1;
print("Total Alphabets:",count)
# closing the opened file
fileptr.close();
"""
**File Output**
Total Alphabets: 14
"""
```

Example: Count number of digits in a file

```
#suppose the file content is
#myeasy456@gmail.com
# open the easy.txt file of D drive in read mode
fileptr = open("D:/easy.txt", "r");
# Reading content of the file
filecontent=fileptr.read()
#initializing the counter with 0
count=0
#loop through filecontent
for i in filecontent:
    #condition for digit
    if i.isdigit():
     #incrementing the counter
     count=count+1;
print("Total digits:",count)
# closing the opened file
fileptr.close();
"""
**File Output**
Total digits: 3
"""
```

Example: Count number of special symbols and alphanumerics in a file

```
#suppose the file content is
#myeasy456@gmail.com
# open the easy.txt file of D drive in read mode
fileptr = open("D:/easy.txt", "r");
# Reading content of the file
filecontent=fileptr.read()
#initializing the counter with 0
alphnumeric=0
special=0
#loop through filecontent
for i in filecontent:
    #condition for digit
    if i.isalnum():
      #incrementing alphanumeric counter
      alphnumeric=alphnumeric+1
    else:
     #incrementing special symbol counter
     special=special+1;
print("Total Special Symbols:",special)
print("Total Aphanumerics:",alphnumeric)
# closing the opened file
fileptr.close();
"""
**File Output**
Total Special Symbols: 2
Total Aphanumerics: 17
"""
```