Training On Python

Lecture – 9

File Handling In Python

Overview Of File Handling

In Python, there is no need for importing external library to read and write files. Python provides an inbuilt function for creating, writing, and reading files.

In this lecture, we will learn:-

- How to Open a Text File
- How to Create a Text File
- How to Append Data to a File
- How to Read a File

How to open a text file?

To open a file, you need to use the built-in open function. The open function returns a file object that contains methods and attributes to perform various operations on the file.

Syntax:-

file_object = open("filename", "mode")

Here,

- **filename:** gives name of the file that the file object has opened.
- **mode:** attribute of a file object tells you which mode a file was opened in.

File Modes in Python.

Mode	Description
'r'	This is the default mode. It Opens file for reading.
'w'	This Mode Opens file for writing. If file does not exist, it creates a new file. If file exists it truncates the file.
'x'	Creates a new file. If file already exists, the operation fails.
'a'	Open file in append mode. If file does not exist, it creates a new file.
't'	This is the default mode. It opens in text mode.
'b'	This opens in binary mode.
'+'	This will open a file for reading and writing (updating)

How to create text file?

With Python you can create a .txt files (emp.txt) by using the code, we have demonstrated here

Step- 1

```
f= open(“emp.txt","w+")
```

➢We declared the variable f to open a file named emp.txt. Open takes 2 arguments, the file that we want to open and a string that represents the kinds of permission or operation we want to do on the file

➢Here, we used "w" letter in our argument, which indicates write and will create a file if it does not exist in library

➢Plus sign indicates both read and write.

Step -2

```
for i in range(10):
        f.write("This is line %d\r\n" % (i+1))
```

➢We have a for loop that runs over a range of 10 numbers.

➢Using the **write** function to enter data into the file.

➢The output we want to iterate in the file is "this is line number", which we declare with write function and then percent d (displays integer)

➢So basically we are putting in the line number that we are writing, then putting it in a carriage return and a new line character

Step – 3

```
f.close()
```

This will close the instance of the file emp.txt stored

Example Application - 1

```
#Develop a program in python to perform write operation into the file
f=open("emp1.txt","w")
empid=int(input("Enter Employee Id : "))
empname=input("Enter Employee Name : ")
salary=int(input("Enter Employee Salary : "))
f.write("Employee Id: "+str(empid)+"\n"+"Employee Name: "+empname+"\n"+"Employee Salary: "+str(salary)+"\n")
f.close()
print("Information is saved")
```

How to append data to a file?

You can also append/add a new text to the already existing file or a new file.

Step -1

f=open(“emp.txt”,”a+”)

Once again if you could see a plus sign in the code, it indicates that it will create a new file if it does not exist. But in our case we already have the file, so we are not required to create a new file.

Step – 2

```
for i in range(2):
        f.write("Appended line %d\r\n" % (i+1))
```

This will write data into the file in append mode.

Step – 3

f.close()

This will close the instance of the file emp.txt stored

Example Application - 2

```
#Develop a program in python to perform append operation into the file
f=open("emp1.txt","a")
empid=int(input("Enter Employee Id : "))
empname=input("Enter Employee Name : ")
salary=int(input("Enter Employee Salary : "))
f.write("Employee Id: "+str(empid)+"\n"+"Employee Name: "+empname+"\n"+"Employee Salary: "+str(salary)+"\n")
f.close()
print("Information is saved")
```

How to read a file?

You can read a file in Python by calling .txt file in a "read mode"(r).

Step -1

Open the file in Read mode

f=open(“emp.txt", "r")

Step - 2

We use the mode function in the code to check that the file is in open mode. If yes, we proceed ahead

if f.mode == 'r':

Step - 3

Use f.read to read file data and store it in variable content

contents =f.read()

Step - 4

print contents

Example Application - 3

```
#Develop a program in python to perform read operation from file
f=None
try:
    filename=input("Enter filename to be open : ")
    f=open(filename,"r")
    contents=f.read()
    print(contents)
except FileNotFoundError:
    print("File doesn't exists")
finally:
    if f:
        f.close()
```