Introduction to Python

Class 3a and 4a

File handling

Python allows users to read, write, edit 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.

In python, each line of code is a sequence of characters and it is stored in text format. Each line is terminated with a special character called EOL/ End of Line character.

Open()

We use open function to open files. The open function returns a file object.

The open function contains 2 arguments: The file name and the mode of usage of the file.

```
syntax: open(filename,mode)
```

There are three modes of usage of file in python:

1. ‘r’ for reading only
2. ‘w’ for writing
3. ‘a’ for appending
4. ‘r+’ for reading and writing

The mode argument is not mandatory. The default mode is set to only reading (r).

```
file1=open(“textfile.txt”)
```

read()

Reading a file is performed using read() function

```
file1=open(“textfile.txt”,”r”)
print(file1.read(5))                    #reads first 5 characters
print(file1.read())
```

This will open the following file and read the first N characters of the stored data and return it as string, where N is the number argument (prints first N characters)

If an argument is not given, the it prints the complete file.

Close()

Closes all the resources in use related to the file.

It is a good habit to close a file after the file requirement is completed.

Write()

Writing a file is performed using write() function

```
file1=open("textfile.txt","r")
file1.write("Hello guys, hope you are doing well")
file1.write("Let me write one more line")
file1.close()
```

append()

Append 'a' will add text to the end of the file.

```
file1 = open("textfile.txt","a")
file1.write("This will add this line")
file1.close()
```

seek()

It is used to move to specific location in a file.

Syntax: `seek(offset, from_what_position)`

```
file1=open("textfile.txt" , "r")
file1.seek(7)
print(file1.tell())    #this prints the position of pointer
print(file1.read(4))
file1.close()
```

seek has 2 arguments: offset and from_what_position

from_what_position argument selects the reference point of seeking, It accepts three values:
0: it sets the pointer at beginning of file
1: is sets the pointer at the current file position
2: it sets the pointer at the end of the file

with() function

A function called with() can be used to have a cleaner syntax . This function is useful because it automatically closes the resources after one is done.

```
with open("textfile.txt", "w") as f:
        f.write("Hello World!!!")
```

```
with open("textfile.txt") as file1:
        data = file1.read()
        print(data)
```