

## Assignment 11: 10 Feb 2023

Q1. Which function is used to open a file? What are the different modes of opening a file? Explain each mode of file opening.

Q2. Why close() function is used? Why is it important to close a file?

Q3. Write a python program to create a text file. Write "I want to become a Data Scientist" in that file. Then close the file. Open this file and read the content of the file.

Q4. Explain the following with python code: read(), readline() and readlines().

Q5. Explain why with statement is used with open(). What is the advantage of using with statement and open() together?

Q6. Explain the write() and writelines() functions. Give a suitable example.

**Q1. Which function is used to open a file? What are the different modes of opening a file? Explain each mode of file opening.**

**Ans:** In Python, we use the **open()** method to open files.

Different modes of opening file are given below

S.No.	Mode	Description
1	r	Open a file for reading. (default)
2	w	Open a file for writing. Creates a new file if it does not exist or truncates the file if it exists.
3	x	Open a file for exclusive creation. If the file already exists, the operation fails.
4	a	Open a file for appending at the end of the file without truncating it. Creates a new file if it does not exist.
5	t	Open in text mode. (default)
6	b	Open in binary mode.
7	+	Open a file for updating (reading and writing)

**Q2. Why close() function is used? Why is it important to close a file?**

**Ans:** The close() method **closes an open file**. It is important to close because files are limited resources managed by the operating system, making sure files are closed after use will protect against hard-to-debug issues like running out of file handles or experiencing corrupted data.

**Q3. Write a python program to create a text file. Write "I want to become a Data Scientist" in that file. Then close the file. Open this file and read the content of the file.**

**Ans:**

**#creating a text file with the command function "x"**

```
file = open("myfile.txt", "x")
```

**#This "w" command can be used to create a new file & also overwrite any existing file found with the same file name**

```
file = open("myfile.txt", "w")
```

**#for single line editing**

```
file.write("I want to become a Data Scientist\n")
```

## #for multi line editing

```
file.writelines(["I want to\n","become a Data Scientist\n"])
```

## # Use the close() to change file access modes

```
file.close()
```

## #The 'r' command opens the text files for reading mode only

```
file = open("myfiles.txt", "r")
```

## #The "file.read" prints out the data in the text file in the shell when run.

```
print(file.read())
```

## Q4. Explain the following with python code: read(), readline() and readlines().

### Ans:

1.'read()' - The 'read()' method reads the entire contents of the file and returns it as a single string.

For example:

```
#open the file in read mode
file = open("my_file.txt", "r")
#print the content of the file
print(content)
#close the file
file.close()
```

2.'readline()' - The 'readline()' method reads a single line from a file and returns it as a string.

For example:

```
#open the file in read mode
file = open("myfile.txt", "r")
#read the first line of the file
first_line = file.readline()
#print the first line of the file
print(first_line)
#close the file
file.close()
```

3.'readlines()' - The 'readlines()' method reads all the lines of a file and returns them as a list of strings

For example:

```
#open the file in read mode
file = open("my_file.txt", "r")
#Read all the lines of the file
lines = file.readlines()
#print all the lines of the file
for line in lines:
    print(line)
#close the file
file.close()
```

**Q5. Explain why with statement is used with open(). What is the advantage of using with statement and open() together?**

**Ans:** The with statement works with the open() function **to open a file**. Using with means that **the file will be closed as soon as you leave the block**. This is beneficial because closing a file is something that can easily be forgotten and ties up resources that you no longer need.

**Q6. Explain the write() and writelines() functions. Give a suitable example.**

**Ans:**

1. 'write()' - The 'write()' function writes a string to a file.

For example:

```
#open the file in write mode
file = open("my_file.txt", "w")
#write to the file
file.write("I want to become a Data Scientist")
#close the file
file.close()
```

2. 'writelines()' - The 'writelines()' function writes a list of strings to a file.

for example:

```
#open the file in write mode
file = open("my_file.txt", "w")
#write a list of string to the file
file.writelines( ["Line 1", "Line 2" , "Line 3"])
#close the file
file.close()
```