**4 ) Reading and Writing Files**

* **Reading from a file using read(), readline(), readlines().**

In Python, once a file is opened in read mode ('r'), there are multiple methods available to read data from the file. The three commonly used methods are:

* read()
* readline()
* readlines()

1. **read() Method**

The read() method reads the entire content of the file as a single string.

size : Number of characters to read. If not specified, it reads the whole file.

file = open("file1.txt", "r")

content = file.read()

print(content)

file.close()

1. **readline() Method**

The readline() method reads one line at a time from the file.

Use readline() when you want to process files line-by-line, such as reading logs or parsing structured text.

file = open("file1.txt", "r")

line1 = file.readline()

line2 = file.readline()

print(line1)

print(line2)

file.close()

1. **readlines() Method**

The readlines() method reads all lines in a file and returns them as a list of strings, where each element represents one line.

Use readlines() when you want to **store all lines** in a list for later use or iteration.

file = open("file1.txt", "r")

lines = file.readlines()

for line in lines:

print(line)

file.close()

* **Writing to a file using write() and writelines().**

In Python, after opening a file in write ('w'), append ('a'), or write & read ('w+', 'a+') mode, you can use the write() and writelines() methods to write data into the file.

1. **write() Method**

* The write() method is used to write a single string into a file.
* string: The text content you want to write into the file.
* It does not automatically add a newline (\n) at the end.

file = open("file1.txt", "w")

file.write("Hello, World!\n")

file.write("This is a second line.")

file.close()

1. **writelines() Method**

* The writelines() method is used to write multiple lines to a file at once. It takes a list of strings and writes them in sequence.
* Each string should end with a newline character \n if a line break is required.

lines = ["First line\n", "Second line\n", "Third line\n"]

file = open("file1.txt", "w")

file.writelines(lines)

file.close()