

## ASSIGNMENT 8

1. What is file ? Explain the need of file in Python.

In Python, a **file** is a collection of data stored on a disk, accessible for reading and writing. Files are essential in Python for persisting data, meaning you can save information that can be retrieved and processed even after the program ends.

### The Need for Files in Python

Files are used in Python for:

- **Data Storage:** Saving data that can be reused or analyzed later.
- **Data Sharing:** Allowing different programs to access and modify the same data.
- **Logging:** Recording program execution details for debugging or monitoring.
- **Large Data Handling:** Processing data too large to store in memory by accessing it in chunks from a file.

2. State and Explain the different mode of opening a file in python.

In Python, you can open a file in different modes based on the operations you need to perform, like reading, writing, or appending data. Here's a breakdown of these modes:

### Read Mode ('r'):

Opens a file for reading. If the file doesn't exist, it throws an error.

This mode is the default if no mode is specified.

### Write Mode ('w'):

Opens a file for writing. If the file exists, it overwrites it; if not, it creates a new file.

### Append Mode ('a'):

Opens a file for writing but appends new content to the end if it exists. Creates a new file if it doesn't exist.

### Read and Write Mode ('r+'):

Opens a file for both reading and writing. The file must exist; otherwise, it throws an error.

### Write and Read Mode ('w+'):

Opens a file for both writing and reading. If the file exists, it overwrites it; if not, it creates a new one.

### Append and Read Mode ('a+'):

Opens a file for appending and reading. If it doesn't exist, a new file is created.

3. State the difference between Write and append mode in opening a file in python.

- **Write Mode ('w'):**

Overwrites the file content if it already exists. Useful when you want to replace previous content entirely.

- **Append Mode ('a'):**

Adds data to the end of the file without deleting existing content. Useful for adding data incrementally.