

File Handling

File handling in Python allows you to **create, read, write, update, and delete** files. It helps us store data permanently instead of losing it when the program ends.

Python uses the built-in function **open()** to work with files.

File Handling Function:

1. **open():** Used to open a file in a specified mode (read, write, append, etc.).
2. **write():** Writes text or data into a file.
3. **read():** Reads the entire content of a file as a single string.
4. **close():** Closes the file and releases system resources.
5. **seek():** Moves the file cursor to a specific position in the file.
6. **tell():** Returns the current position of the file cursor.

File Modes in Python:

- 1.**X :** Create a new file and write.
- 2.**w :** Opens a file for writing. Creates a new file or **overwrites** an existing file.
- 3.**r :** Opens a file for reading. The file must already exist.
- 4.**a :** Opens a file to add new data at the **end** without deleting existing content.
- 5.**w+ :** Creates a new file or overwrites an existing one, and allows reading also.
- 6.**r+ :** Opens a file for both reading and writing. File must exist.
- 7.**a+ :** Opens a file for reading and appending. Content is added only at the end.

Example:

"x" – Create a new file and write

Creates a new file; gives error if file already exists.

```
open("newfile.txt", "x")
```

"w" – Write mode

Creates a new file OR overwrites an existing file.

Example:

```
open("data.txt", "w")
```

"r" – Read mode

Opens an existing file for reading.

```
open("data.txt", "r")
```

"a" – Append mode

Opens a file and adds new data at the **end**.

```
open("data.txt", "a")
```

"w+" – Write + Read

Creates a new file or overwrites existing one, and allows reading.

```
open("data.txt", "w+")
```

"r+" – Read + Write

Opens an existing file for both reading and writing.

```
open("data.txt", "r+")
```

"a+" – Append + Read

Opens a file for reading and appending; content is added only at the end.

```
open("data.txt", "a+")
```