

What are the primary file modes in python

File modes in Python define how a file is opened for interaction, determining whether you can read, write, or append data, and whether the data is treated as text or binary.

Here are the common modes and rules:

- **'r' (Read Mode):** Opens the file for reading only, with the file pointer at the beginning; it will raise an error if the file does not exist.
- **'w' (Write Mode):** Opens the file for writing only; it **creates a new file** if it doesn't exist, and **overwrites (truncates)** the file if it already exists, removing all previous content.
- **'a' (Append Mode):** Opens the file for writing; it **creates a new file** if it doesn't exist, and if the file exists, it **appends new content to the end of the file**.

Common Rules in Modes:

- **'w' always overwrites:** When you open a file in 'w' mode, any existing content in that file is immediately deleted.
- **'a' always appends:** When you open a file in 'a' mode, new data is always added to the very end of the file.
- **Binary Modes ('rb', 'wb', 'ab'):** These modes work identically to their text counterparts ('r', 'w', 'a') in terms of file access behavior (read-only, overwrite, append), but they operate on **raw bytes** instead of text strings and do not perform character encoding/decoding.