B2 PROGRAMMING · B2.5

File processing

Saving data that outlives the program: the three **access modes**, the **open-process-close** lifecycle, and reading files line by line.

01 Access modes

read "r"	Read existing contents.
write "w"	Overwrite from scratch.
append "a"	Add to the end; keep old data.
Missing file	"r" errors; "w"/"a" can create.
Danger	"w" deletes existing content.

02 Key terms

File	Persistent storage on disk.
Memory	Lost when the program ends.
Record	One line of the file.
Field	A value within a record.
CSV	Fields separated by commas.

03 The file-processing lifecycle

1

Open

Open the file in the right mode: r, w or a.

2

Process

Read lines in, or write data out.

3

Close

Save buffered changes and release the file.

04 Reading & safety

Sequential	Read from the top, in order.
Line by line	One record per loop pass.
Split	Break a line into fields.
try / except	Handle a missing file.
with open	Closes the file for you.

05 Worked example: add a score

Goal	Add a score, keep the old ones.
Mode	Use append "a", not "w".
write	Add "Cara,1500" on a new line.
Close	with block saves the change.
If "w"	Old scores would be wiped.

06 Know the difference

Write vs append	"w" overwrites the whole file; "a" adds to the end and keeps existing data.	MODES
Memory vs file	A variable is lost when the program ends; a file persists on disk between runs.	STORAGE
Record vs field	A record is one line of the file; a field is a single value within that line.	DATA
Open vs close	Opening prepares the file for use; closing saves changes and releases it.	LIFECYCLE

FINAL PASS BEFORE THE EXAM

Rapid exam tips

Eight things that lose marks if you slip on them. Skim before you walk in.

01

"w" overwrites; to keep existing data use **"a"** (append).

02

Opening a missing file in **"r"** raises an error; handle it with try / except.

03

Always follow **open, process, close**. Unclosed writes may never save.

04

with open(...) in Python closes the file automatically.

05

Files are read **sequentially**; you cannot skip to a line without passing earlier ones.

06

A **record** is one line; **split** it on the delimiter to get the fields.

07

A **file** persists on disk; a **variable** is lost when the program ends.

08

Read the question: "add a record" means **append**, not overwrite.