Building a Simple Habit-Tracker in Python (Phase 2 Progress Report)

Design choices, code overview, and lessons learned so far

★ What this project is?

Plain-language project blurb

What is this?

A lightweight command-line habit tracker I coded in Python.

- Let's you register daily or weekly habits in seconds
- Saves everything to a local JSON file, so data sticks around
- Shows live streaks, so you can see how long you've kept a habit going
- All logic is under 250 lines of readable code

why it matters?

Features	Output
Simple CLI	Runs in any terminal—no GUI install needed
Object-oriented design	Each habit is its own object; easy to extend
Functional analytics module	One-liners to answer "longest streak?", "which habits today?"
Unit-tested	100 % of core logic covered by pytest, so bugs get caught early
Portable data (JSON)	Move your habits file to any machine and keep going

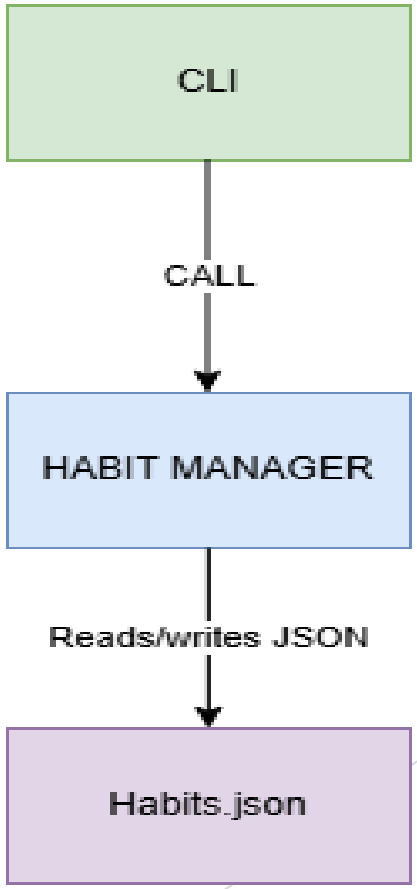
How the program is organized

Short list:

- habit.py – stores one habit
- habit_manager.py – keeps many habits and saves them to a JSON file
- analytics.py – functions to answer questions (longest streak etc.)

QUICK DIAGRAM

High-level flow: user commands hit the CLI,
the HabitManager handles logic,
and state persists in habits.json.



Main features I finished

- Add / delete habits
- Mark them as done
- Daily vs weekly streak logic
- Data stays after you quit

Short demo (terminal screenshots)

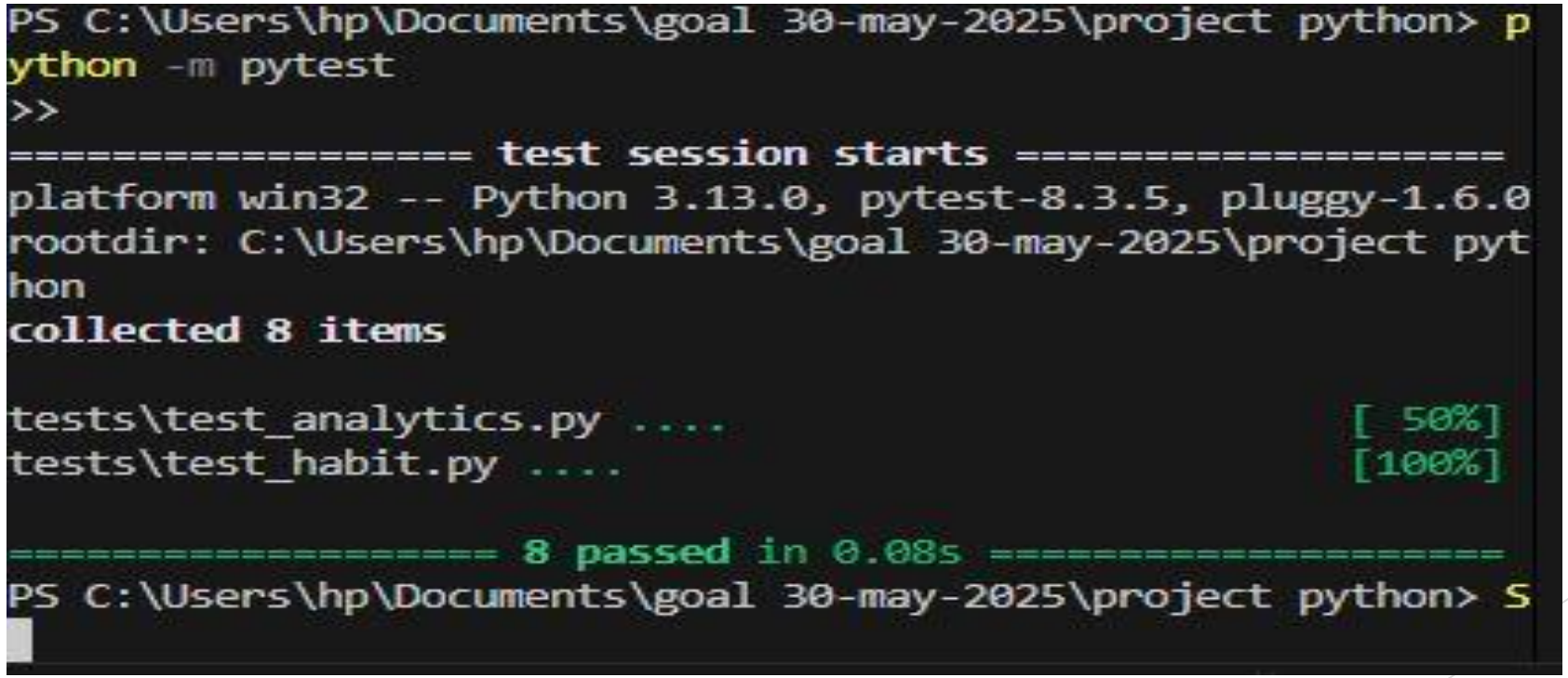
After restarting, the habit is still there.

```
--- Habit Tracker CLI ---
1. Create a new habit
2. Complete a habit
3. View all habits
4. Analyze habits
5. Save and Exit
Choose an option: 1
Habit name: READING FOR TWO HOURS
Periodicity (daily/weekly): DAILY
Created habit: READING FOR TWO HOURS
```

```
--- Habit Tracker CLI ---
1. Create a new habit
2. Complete a habit
3. View all habits
4. Analyze habits
5. Save and Exit
Choose an option: 4
Analytics:
1. All habits
2. Habits by periodicity
3. Longest streak overall
4. Longest streak for a habit
Choose an analytics option: 1
['Drink Water', 'Meditate', 'Study Python', 'Jog 5 km', 'Call Parents', 'start drinking water every other hour', 'reading',
 'READING FOR TWO HOURS']
```

TEST

- I wrote 8 pytest tests. They all pass (see picture). This helped me spot a bug in the streak code.



What was tricky

- Figuring out when a streak is ‘broken’
- Remembering to convert datetime objects to strings for JSON
- Getting pytest to run on Windows

WHAT MORE COULD BE BE DONE

- Option to use an SQLite database
- Nicer command-line menu with colours
- Maybe a tiny GUI in the future

THANKYOU FOR TAKING OUT TIME TO REVIEW MY PROJECT