

Drone Telemetry Simulation – CSWE Internship Task

What I Built

I developed a Python-based program that simulates real-time drone telemetry data.

The program displays key flight parameters such as **altitude**, **speed**, **battery percentage**, and **GPS coordinates**, similar to a basic drone telemetry window used in real-world systems.

How It Works

The program initializes realistic starting values for all telemetry parameters.

It then runs for a total duration of **30 seconds**, updating the telemetry data **once every second** to mimic live drone behavior.

- **Altitude** gradually increases to simulate drone ascent.
- **Speed** varies randomly within a realistic range to represent changing flight conditions.
- **Battery percentage** decreases over time to reflect power consumption during flight.
- **GPS coordinates** change slightly every second to simulate drone movement.

A loop structure is used to update and display the telemetry values at fixed time intervals.

The `time.sleep(1)` function ensures that updates occur exactly every second, providing a real-time simulation effect.

Tools / Software Used

- **Programming Language:** Python
- **Libraries Used:**
 - `time` – for one-second interval updates
 - `random` – to generate dynamic and realistic telemetry values
- **Development Environment:** VS Code / Terminal

Conclusion

This project demonstrates my understanding of basic simulation logic, time-based data updates, and clean program structure.

The solution focuses on clarity, simplicity, and logical reasoning, aligning with real-world telemetry concepts while keeping the implementation efficient and easy to understand.