Problem Statement: Drone Telemetry Dashboard

Title: *Drone Status Monitoring Web Interface*

Objective:

Design and develop a **creative and interactive website or GUI** that **simulates and displays real-time drone telemetry**, including:

- Create a virtual flight mode switch (e.g., Manual, Stabilize, Altitude Hold) and alter the telemetry behavior based on mode.
- Simulate control loop behavior by generating pseudo PID output values that change dynamically based on simulated sensor values.
- Virtual Geo-Fence Simulation:
  Define a 2D virtual boundary area.
  Simulate GPS position updates.
  Raise alarms or status flags when the drone goes outside bounds.
  (With live visualization)

Note: This project is purely **software-based.** No hardware or real sensor integration is required.

Requirements:

- Simulate the data using Python (generate dynamic/random values over time).
- Display values in **real-time** using **interactive visuals** like gauges, graphs, or animations.
- Focus on **creative design, user experience, and clarity of status display**.
- Implement using any suitable tech stack:
  - **Python** (Flask / Streamlit / Dash / PyQt / Tkinter)
  - Or mix with **HTML/CSS/JS**, **React**, or any frontend framework

Note: Tech is not restricted only to this. You are free to implement this in any way you seem fit! 🤘

What do we expect?

- Complete source code and your website link if available (provide the GitHub link if pushing your source code to github.com or drive link (with public access) for assessment)
- Screenshots or video demo of the interface (can be provided via the same drive link)
- Docker based not preferable.

Evaluation Criteria:

- Visual creativity and design quality
- Clarity of data presentation
- Responsiveness and interactivity

Bonus: Animation effects or real-time updates using WebSockets/JS

Submission Deadline:

17th April 2025 (Thursday 12pm)

HAPPY LEARNING!