Real Time Vehicle Tracking System

Setup Instructions

1. Hardware Setup

- Connect the GPS module to the microcontroller (Arduino/ESP32) using TX and RX pins.
- Connect the GSM module to the microcontroller for data transmission.
- Insert a valid SIM card into the GSM module with active data plan.
- Provide 12V power supply from vehicle battery or regulated power source.
- Ensure proper antenna connection for GPS and GSM modules.

2. Software Setup

- Install Arduino IDE or required development software.
- Install necessary libraries for GPS and GSM modules.
- Write or upload tracking program code to microcontroller.
- Configure APN settings for GSM module.
- Test GPS signal reception and data transmission.

3. Server Setup

- Set up a cloud server or local server (e.g., AWS, Firebase, or local hosting).
- Create a database (MySQL/PostgreSQL) to store vehicle data.
- Develop backend APIs to receive GPS coordinates.
- Ensure server security and authentication mechanisms.
- Test API endpoints using sample data.

4. Front End Setup

- Develop web or mobile application interface.

- Integrate map services (Google Maps API) for live tracking display.
- Connect frontend with backend APIs.
- Implement user login and dashboard features.
- Test real-time tracking functionality.

5. Final Testing and Deployment

After completing hardware and software setup, install the tracking device inside the vehicle securely. Power on the system and verify that location data is correctly transmitted and displayed on the dashboard. Perform multiple test drives to ensure accurate real-time tracking before final deployment.