

Geolocation Tracker Application

POC Objectives

1. **User Registration:**
 - a. Allow users to register with their **Vehicle ID** and **Vehicle Type**.
 - b. Save registration data to a database.
2. **Location Tracking:**
 - a. Request and obtain location permissions.
 - b. Capture user geolocation periodically when the app is running.
 - c. Save geolocation data (latitude, longitude, timestamp) to the database.
3. **Web UI for Location Display:**
 - a. A simple webpage to fetch and display the geolocation history of the user from the database.

Technology Stack

- **Mobile App:** React Native (for cross-platform compatibility).
- **Backend:** Node.js with Express.js (API for user registration and location storage).
- **Database:** MongoDB (to store user and geolocation data).
- **Web UI:** React.js (to display geolocation history).

Features in POC

Mobile App

1. **User Registration Screen:**
 - a. Input fields for Vehicle ID and Vehicle Type.
 - b. Submit button to save data.
2. **Location Permission:**
 - a. Prompt user to allow location tracking.
 - b. Enable periodic location tracking.
3. **Background Location Tracking:**
 - a. Collect geolocation data every 5 minutes (or as feasible in POC).
 - b. Send geolocation data to the backend.

Web UI

1. Fetch and Display Data:

- a. Show a table or list with columns: **Timestamp, Latitude, Longitude.**
- b. Simple interface for now, no styling emphasis.

Workflow

1. User Registration:

- a. User opens the app, registers with Vehicle ID and Vehicle Type.
- b. Backend saves this information.

2. Location Tracking:

- a. User grants location permissions.
- b. App starts tracking location and sends data to the backend periodically.

3. Data Display:

- a. Web UI fetches location data using an API and displays it in a list format.

Development Plan for POC

Backend:

- RESTful API endpoints:
 - POST /register – Save user information.
 - POST /location – Save user geolocation data.
 - GET /locations – Fetch geolocation data for display.

Mobile App:

- React Native app with:
 - Registration screen.
 - Location tracking logic using libraries like react-native-geolocation-service.

Web UI:

- Simple React.js app to display location data fetched from the backend.

Deliverables

1. **Mobile App:** A basic app with registration and location tracking.
2. **Backend API:** Minimal endpoints for user registration and location storage.
3. **Web UI:** A basic page to view geolocation history.