Node.js & Express Full-Stack Assignment (5 Days)

Objective

The goal of this assignment is to assess your ability to build a **full-stack application** using **Node.js, Express, and any database of your choice**. You will also create a **frontend UI** to interact with the backend APIs and deploy the complete solution to the cloud.

📌 **Requirements**

1. Backend (Node.js, Express)

- Develop a **REST API** using **Node.js** and **Express**.

- Use any **database of your choice** (MongoDB, PostgreSQL, MySQL, etc.).

- Implement **CRUD operations for charging stations**:

- **Create** a new charging station.

- **Read** (List) all charging stations.

- **Update** a charging station.

- **Delete** a charging station.

- Implement **User Authentication** using JWT:

- **Register** (Signup) API.

- **Login** API (Issue JWT token).

- **Protected Routes** for managing charging stations.

- Store charging station details including:

- **Name, Location (Latitude & Longitude), Status (Active/Inactive), Power Output (kW), Connector Type**.

2. Frontend (Vue.js)

- Create a **Login Screen** that interacts with the backend API.

- Build a **Charger Listing Page**:

- Display all onboarded chargers.

- Add **filters** (e.g., status, power output, connector type).

- Add/Edit/Delete chargers.

- Develop a **Map View**:

- Display all onboarded chargers on a **map** using Google Maps or OpenStreetMap.

- Clicking a marker should show the charger details.

3. Deployment

- Deploy both the **backend and frontend** on any cloud platform (**AWS, Heroku, Vercel, Render, or Firebase Hosting**).

- Ensure the backend has a public API endpoint accessible for testing.

🚀 **Deliverables**

1. **GitHub Repository** containing:

- Backend code (/backend folder).

- Frontend code (/frontend folder).

- **README.md** with setup instructions.

2. **Deployed Application URL** (Frontend).

3. **Backend API URL** (Swagger/Postman collection is a plus).

⏳ **Timeframe: 5 Days**

- Day 1: **Set up Backend** (CRUD for Charging Stations, Auth APIs)

- Day 2: **Implement Frontend Login & Charger Listing**

- Day 3: **Integrate Map View & API Calls**

- Day 4: **Deploy & Submit**

📩 **Submission Guidelines**

- **GitHub Repo**: Share the repository link with proper documentation.

- **Live Deployed URL**: Ensure we can access the frontend and test the APIs.

This assignment evaluates **backend development, API integration, frontend UI, and cloud deployment skills**. Looking forward to your submission! 🚀