Track-Logix – System Design Document (SDD)

Project Overview

Track-Logix is a smart fleet and logistics management system designed to manage vehicles, drivers, deliveries, fuel usage, and maintenance operations for logistics companies. [redacted].

System Architecture

The system follows a client-server architecture. The frontend communicates with the backend via REST APIs. Backend services handle authentication, business logic, and database operations using MongoDB.

User Roles

Admin manages fleet performance and analytics. Dispatcher assigns delivery tasks and optimizes routes. Drivers update delivery status, fuel logs, and vehicle issues.

Core Modules

Authentication Module, Vehicle Management Module, Delivery Workflow Module, Fuel & Maintenance Module, Analytics and Reporting Module.

Business Logic

A scheduled maintenance predictor checks vehicle mileage daily and flags service requirements. Fuel efficiency is calculated for each vehicle and warnings are generated for low mileage.

API Overview

The system exposes REST APIs for authentication, vehicle management, deliveries, maintenance, and analytics. JWT-based authentication and role-based access control are implemented.

Scalability & Future Enhancements

Future enhancements include GPS tracking, IoT sensor integration, microservices architecture, and real-time analytics.

Conclusion

This System Design Document presents a scalable and enterprise-ready architecture suitable for logistics operations.