INFOSYS SPRINGBOARD INTERNSHIP 6.0

NeuroFleetX - AI-Driven Urban Mobility Optimization

Tech Stack:
React.js • Spring Boot • PostgreSQL • REST APIs

What is NeuroFleetX?

A full-stack fleet management and analytics platform that simulates real-world fleet operations, vehicle tracking, maintenance workflows, and multi-role dashboards for intelligent decision-making.

Project Objectives

- Build a full-stack fleet management system with secure login and core modules
- Provide real-time tracking, booking validation, and maintenance alerts.
- Develop role-based analytics dashboards with KPIs and charts.
- Deliver a modern, responsive UI with reusable components and dark mode.

Methodology

- Planned & Analyzed system requirements and user roles.
- Developed Frontend using React with reusable components and modern UI.
- Built Backend using Spring Boot REST APIs conn ected to PostgreSQL.
- Integrated & Enhanced features like live tracking, validations, reminders, and analytics dashboards.

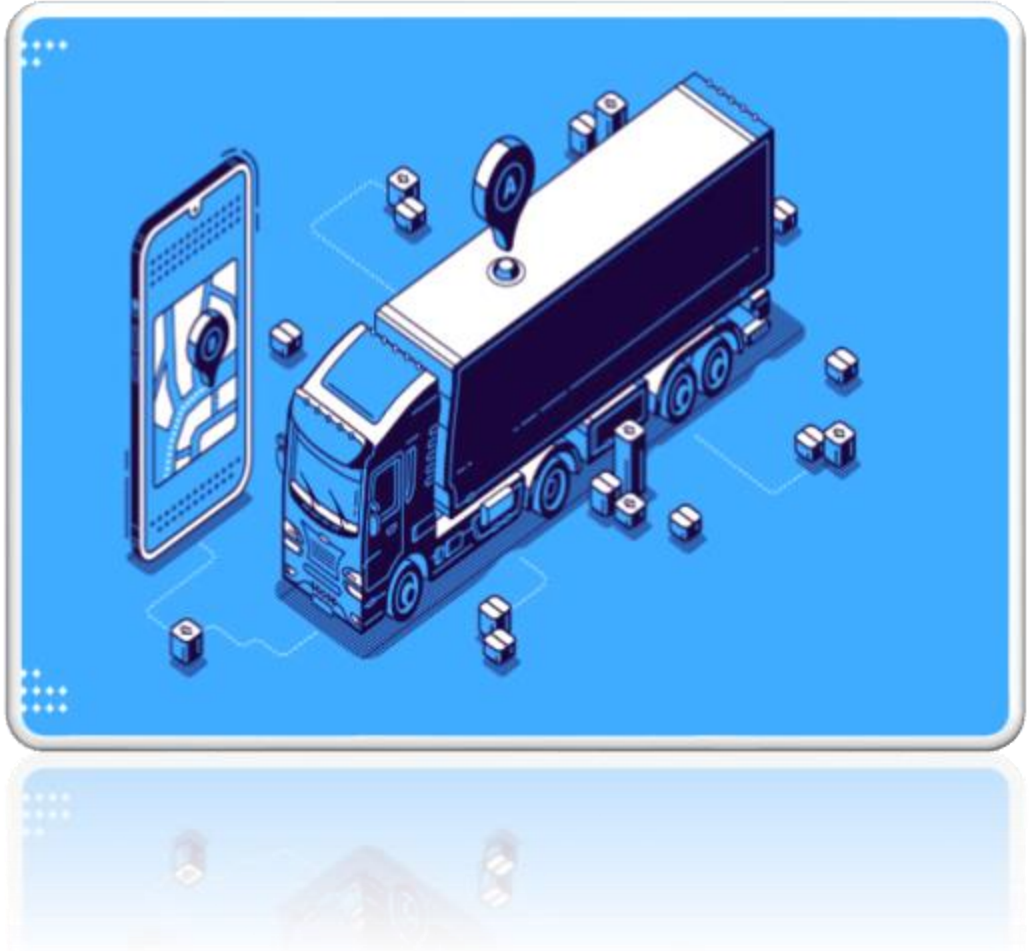
System Overview & Core Modules

Core Functional Modules Developed

- Authentication System: Secure login, role-based access
- Fleet Dashboard: Real-time KPIs & operational insights
- Vehicles Module: Vehicle records + live tracking
- Bookings Module: Scheduling, conflict validation
- Maintenance Module: Alerts, reminders, service logs
- Settings Page: Configurations, theme options

Backend & Database

- Spring Boot REST API
- PostgreSQL relational schema
- Clean controllers, validations, entity mapping



NeuroFleetX – AI-Driven Urban Mobility Optimization:

Development Phase Overview

This phase focused on building the core system structure, essential modules, and the initial interface needed to operate NeuroFleetX effectively.

Core Platform Setup

Configured the full-stack environment using React, Spring Boot, and PostgreSQL. Established reusable components, routing, and database schema to support scalable development.

Backend API Development

Created key REST APIs for authentication, vehicles, bookings, maintenance, and settings. Implemented structured controllers, validations, and secure data communication across modules

Primary UI & Dashboard Design

Developed the initial Dashboard, Vehicles, Bookings, and Maintenance pages with responsive layouts and pastel-themed UI design. Added basic interactions, smooth transitions, and intuitive navigation.

Milestones

01

Milestone 1 – Foundation Setup

Learned Java, React, Spring Boot basics and built the initial login UI, API practice, and project environment setup.

02

Milestone 2 – Core Module Development

Completed Authentication, Dashboard, Vehicles, Bookings, Maintenance, and Settings pages with backend integration.

03

Milestone 3 – Feature Enhancements

Added live tracking upgrades, maintenance reminders, booking validations, improved UI/UX.

04

Milestone 4 – Advanced Analytics Implementation

Developed Admin, Employee, and Customer Analytics dashboards with KPIs, charts, filters, tables, reusable components.

Weeks 1–2

- Learned Java, React basics, Spring Boot, and database setup.
- Built initial login page and practiced API connections.

Weeks 3–4

- Developed core pages: Dashboard, Vehicles, Bookings, Maintenance, Settings.
- Implemented backend APIs and linked all modules.

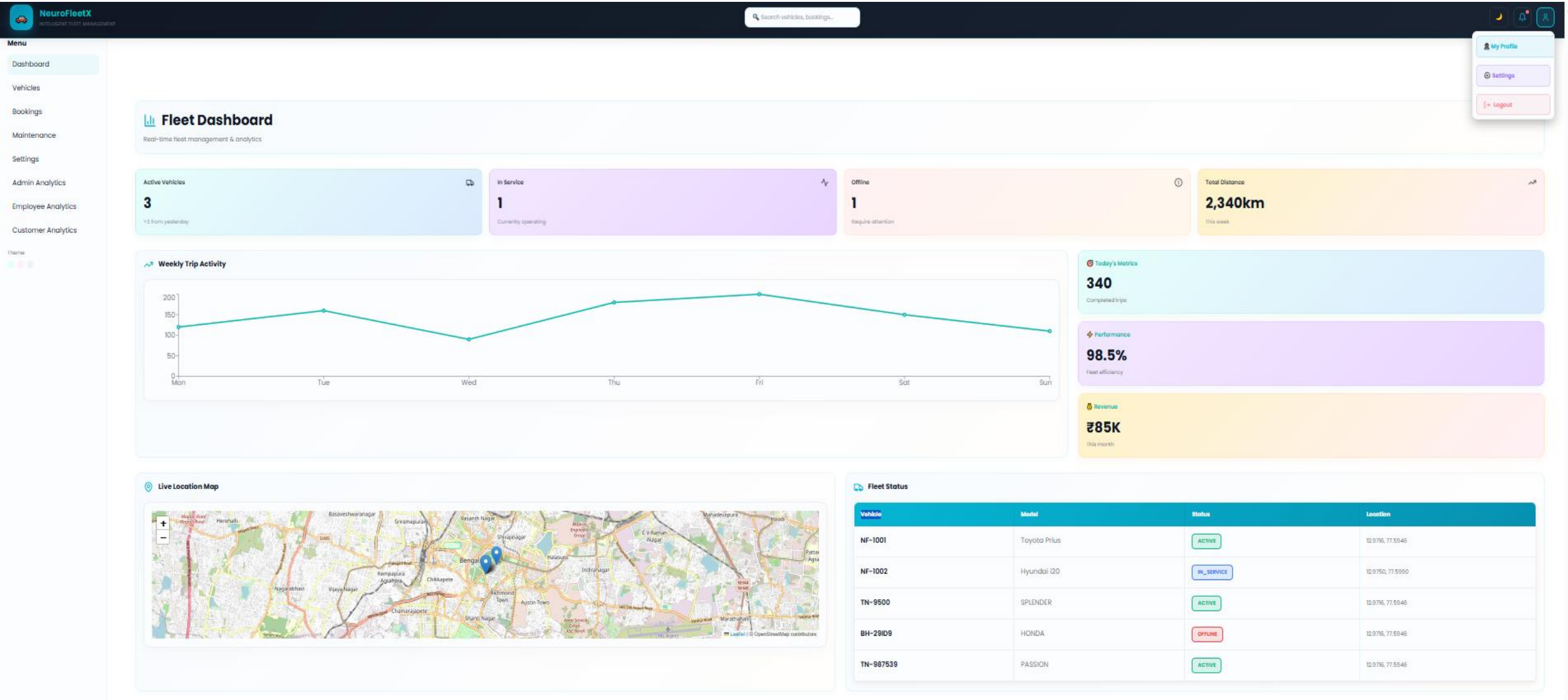
Weeks 5–6

- Completed full frontend–backend integration with PostgreSQL.
- Fixed issues, added validations, and presented core milestone.

Weeks 7–8

- Added enhancements: tracking, reminders, theme options.
- Built Admin, Employee, Customer Analytics dashboards with KPIs & charts.

Project Results:



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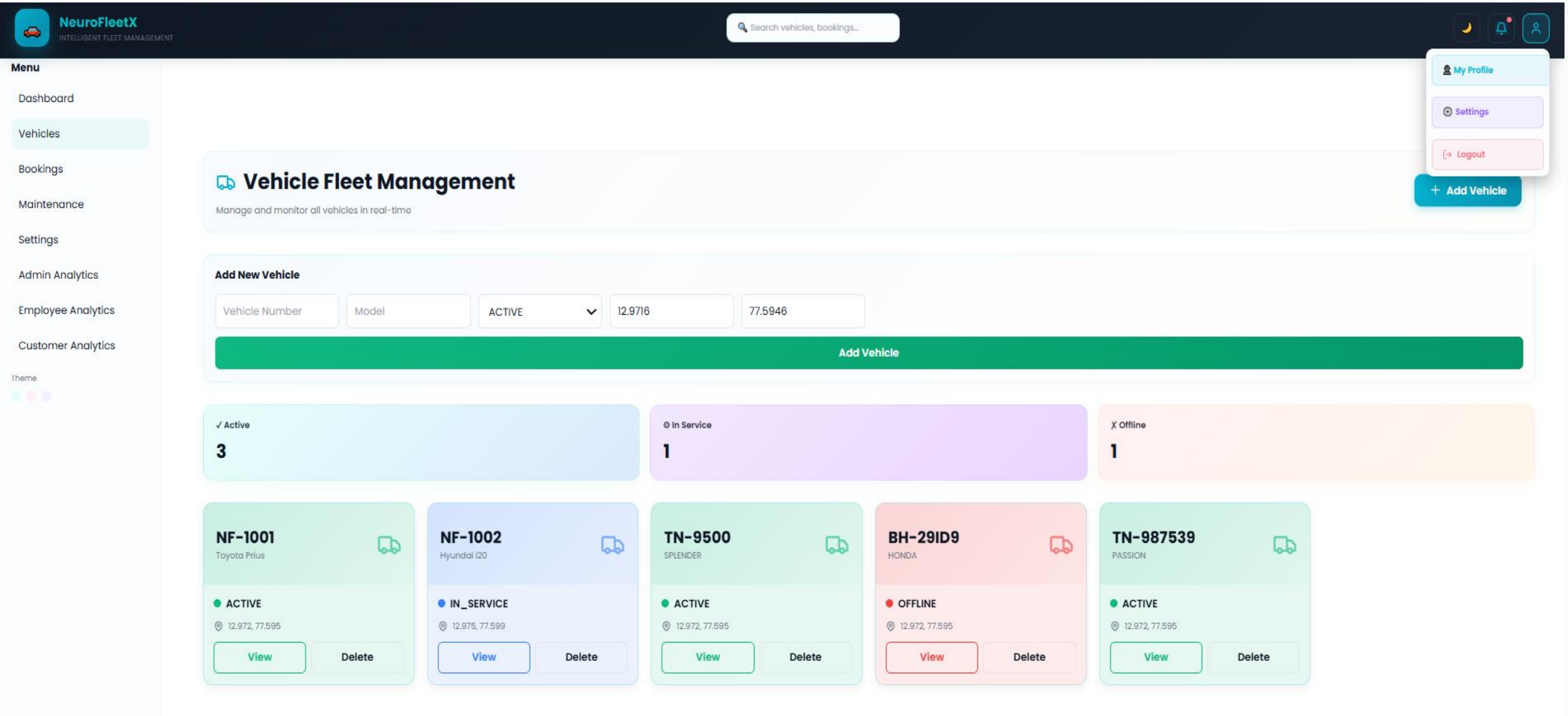

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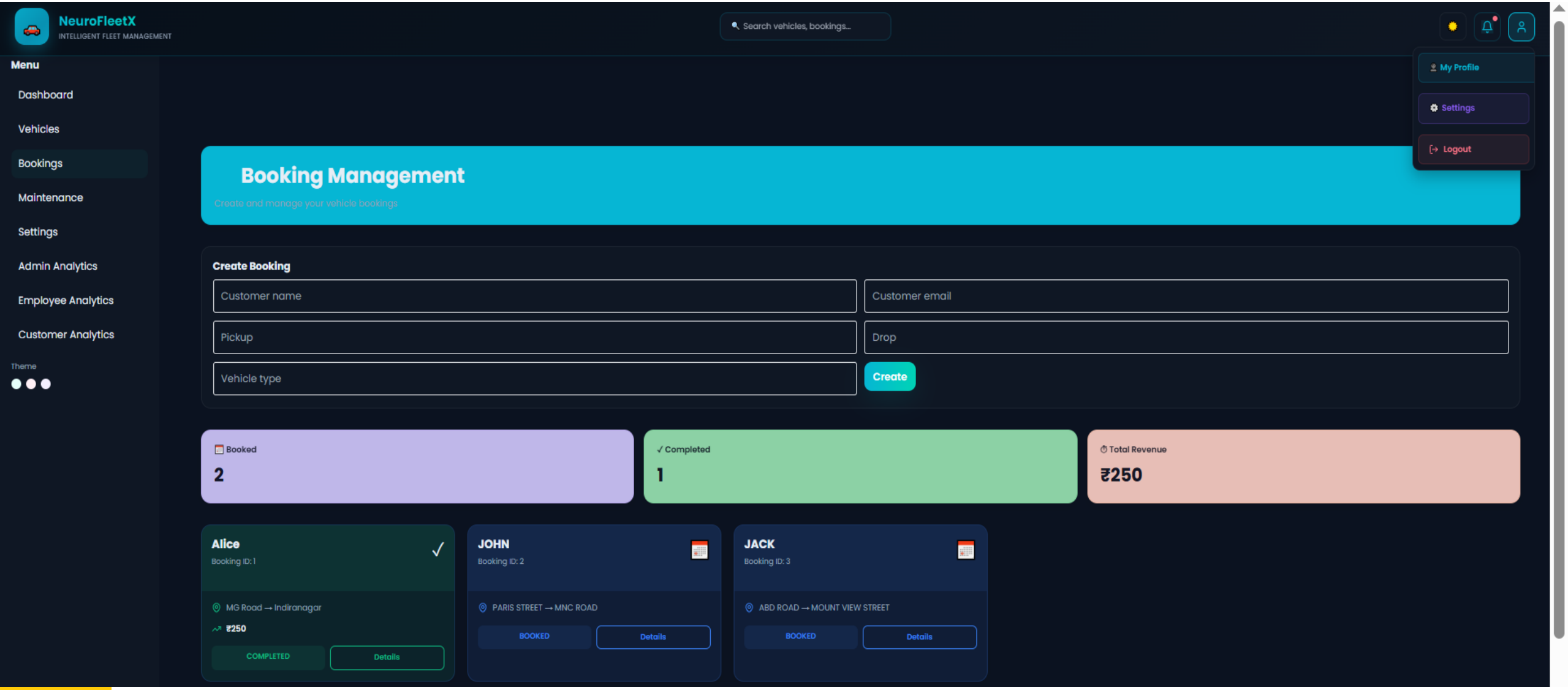

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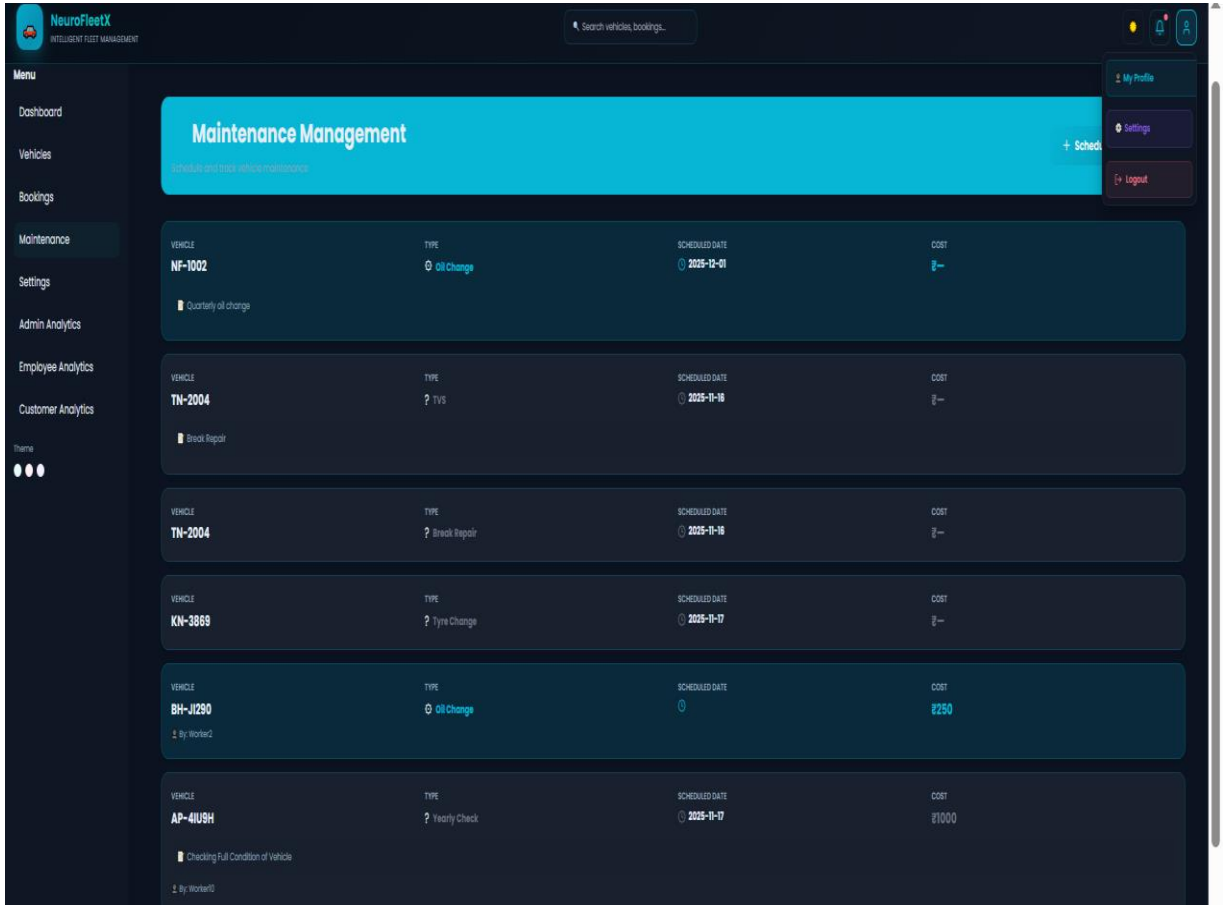

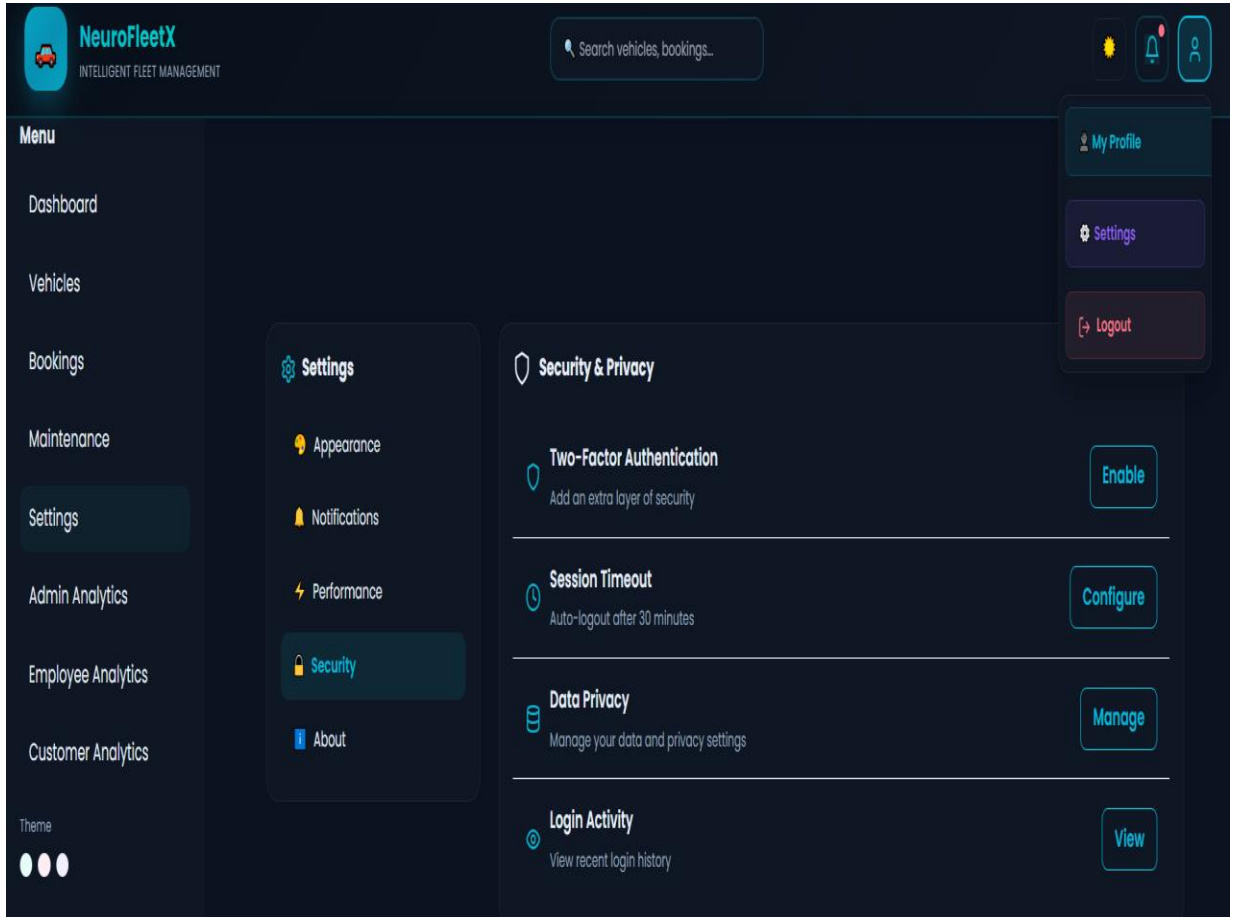

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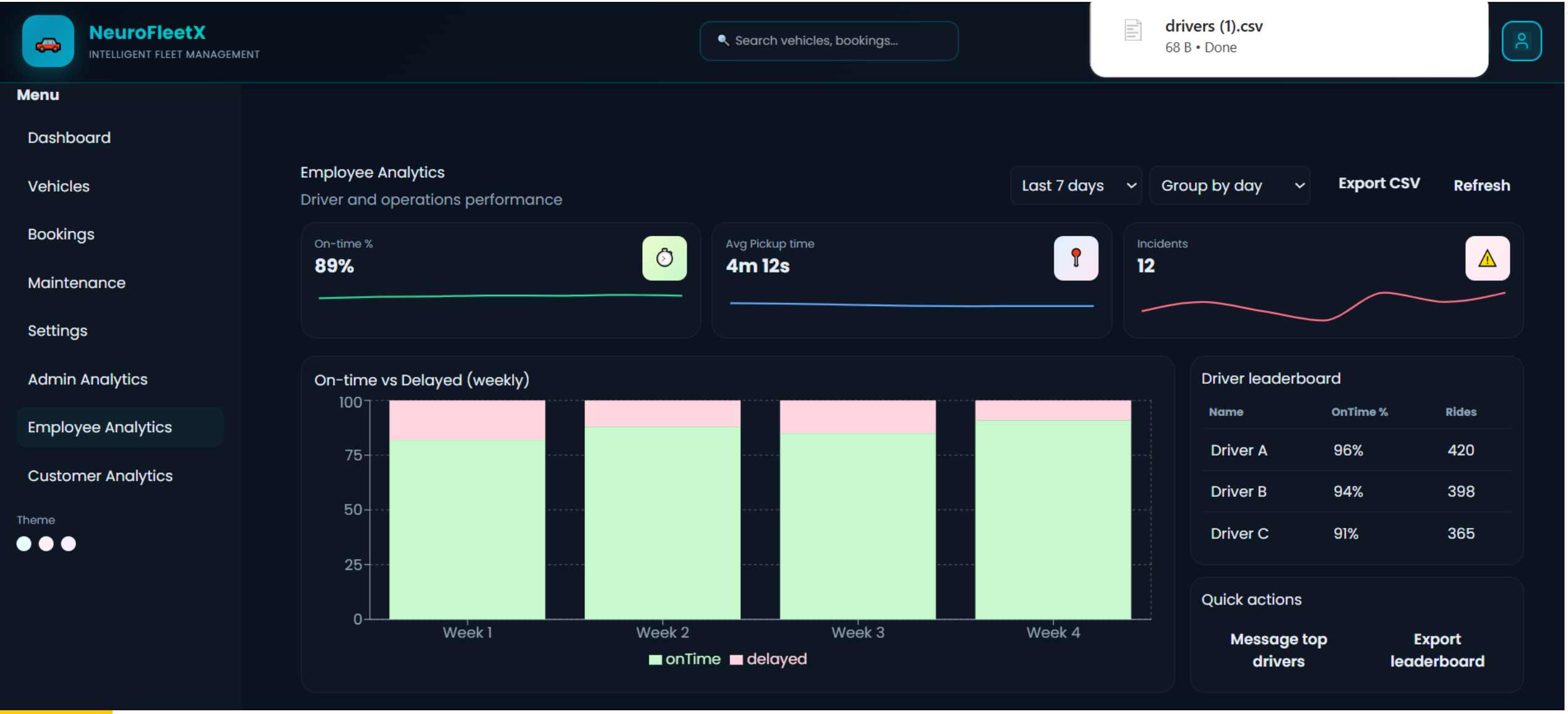

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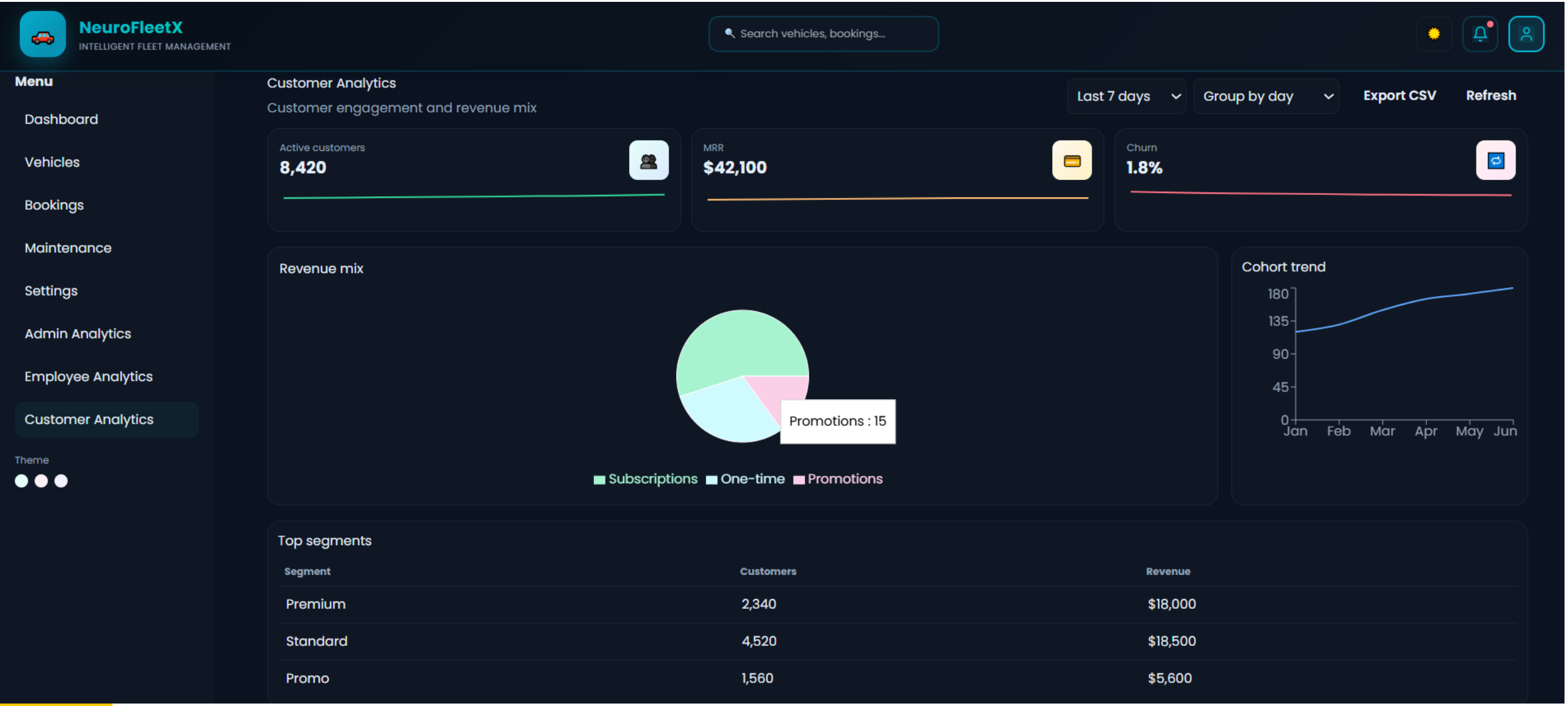

Conclusion:

The NeuroFleetX project successfully delivered a full-stack fleet management system with modern UI, robust backend APIs, and advanced analytics dashboards. The work enhanced the platform's workflow efficiency, real-time visibility, and data-driven insights. Overall, the project demonstrates a strong integration of frontend, backend, and database technologies in a practical mobility solution.