Infosys Springboard Virtual Internship 6.0 Completion Report

Details

Batch Number : 5

Start date : 13-Oct-2025

Names: Sagarika Naik

Internship Duration: 8 Weeks

1. Project Title
NeuroFleetX – AI-Powered Fleet Management and Route Optimization Platform

2. Project Objective
The objective of this project was to design and conceptualize NeuroFleetX, an intelligent fleet management system powered by AI. The platform aims to simplify fleet operations through automated monitoring, optimized routing, driver–vehicle management, predictive insights, and real-time analytics.

The major goals included:

- Enhancing operational efficiency for rental and transport fleets

- Improving decision-making using analytics and data-driven insights

- Introducing health monitoring for vehicles

- Reducing manual overhead through automation

- Building a scalable architecture ready for AI-driven extensions

3. Project Description in detail
NeuroFleetX is a conceptual full-stack mobility management platform designed to support smart fleet operations. The system integrates AI, cloud technologies, data analytics, and telematics to optimize routing, monitoring, and resource allocation.

Key Features

- **Driver & Vehicle Management**
  Unified module for registering, updating, and managing driver and vehicle records.

- **Booking Module**
  Allows manual driver assignment for each trip using email-based booking.

- **Vehicle Condition Monitoring**
  Tracks parameters such as engine status, braking response, accelerator usage, and fuel levels.

- **Route Distance Tool**
  Shows straight-line distance between two locations (non-traffic aware).

- **Dashboard & Analytics**
  Displays bar and pie charts for driver activity and vehicle health insights.

Technologies Used

- **Frontend:** React, HTML, CSS, JavaScript

- **Backend:** Node.js / Java (as applicable)

- **Database:** MongoDB / MySQL

- **AI & ML:** Python, NumPy, Pandas, Scikit-learn

- **APIs:** Google Maps API, Telematics APIs

- **Cloud (Conceptual):** AWS / Azure / GCP

Real-World Impact

- Improved fleet utilization and scheduling

- Reduced operational costs through preventive maintenance

- Enhanced safety via driver monitoring

- Support for smart city mobility initiatives

4. Timeline Overview

Week	Activities Planned	Activities Completed
Week 1	Research on fleet systems and architecture planning	Completed requirement study and architecture outline
Week 2	UI wireframing and feature planning	Wireframes prepared; feature list finalized
Week 3	Driver & vehicle management conceptualization	Module structure and workflows created
Week 4	Route distance + booking module planning	Logic and layouts designed
Week 5	Dashboard analytics planning	Chart structures and sample analytics prepared
Week 6	Vehicle health monitoring design	Flow diagrams created
Week 7	System integration + documentation	Report drafting and refinement
Week 8	Final review and submission	Project completed and finalized

5a. Key Milestones

Milestone	Description	Date Achieved
Project Kickoff	Requirement collection & architecture setup	Week 1
Prototype/First Draft	Initial module designs created	Week 3
Mid-Term Review	Feature refinements & additions	Week 5
Final Submission	Final project documentation completed	Week 7
Presentation	Final presentation delivered	Week 8

5b. Project execution details

The NeurofleetX project was executed in a structured and iterative manner, following a step-by-step workflow from planning to final submission.

1. Requirement Understanding and Research

The project began with understanding the problem statement and researching how modern fleet management and urban mobility platforms operate. I analyzed the needs of rental services, transport operators, and smart city systems to define the core features of NeurofleetX.

2. System Design and Architecture Planning

After understanding the requirements, I created the system architecture, including data flow diagrams, module separation, and backend–frontend communication structure. This helped in planning how real-time data, APIs, and dashboards would connect within the platform.

3. UI/UX and Dashboard Design

I designed the user interface for fleet tracking, vehicle health monitoring, and analytics dashboards. Wireframes and layout sketches were prepared to ensure clarity, simplicity, and ease of use.

4. Backend Development

Using Node.js and Express, REST APIs were created for handling fleet data, vehicle information, and analytical outputs. Data models were structured to support dynamic inputs such as location updates, vehicle status, and usage patterns.

5. Frontend Integration

The designed UI screens were connected with backend APIs to display real-time or sample fleet data. Components were tested individually to ensure accurate mapping of data on dashboards.

6. AI and Predictive Logic Planning

I explored machine learning concepts to design basic logic for predictive maintenance, smart routing, and demand forecasting—important elements for any intelligent mobility platform.
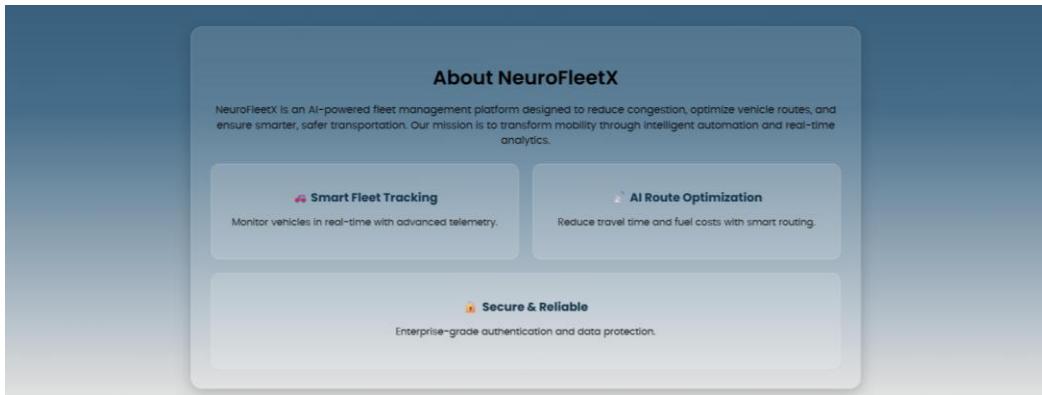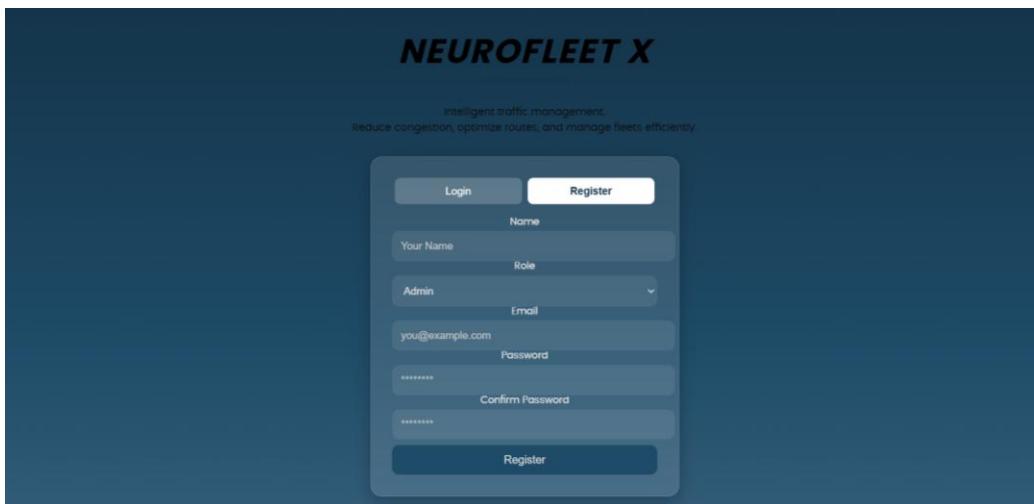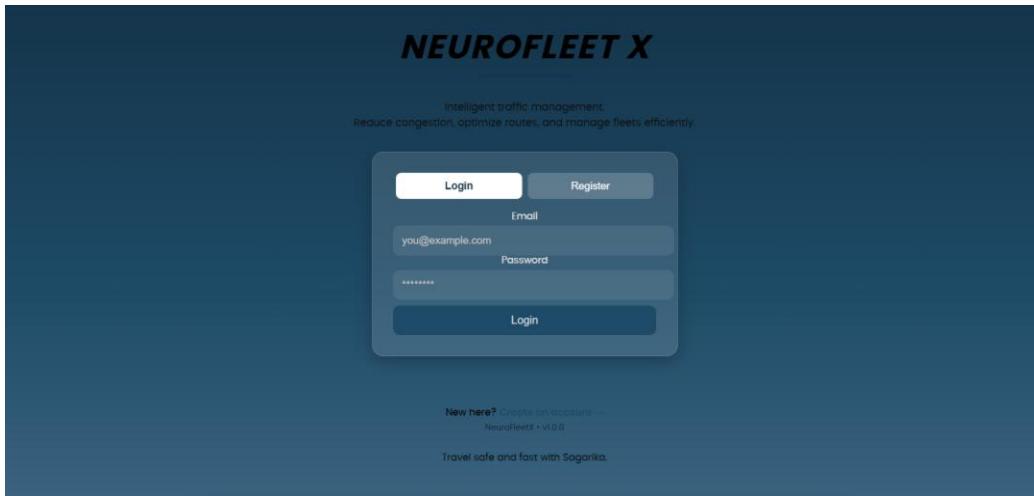
7. Testing and Refinement

The platform underwent functional testing to ensure that APIs, UI components, and data flow worked smoothly. Based on issues found, improvements were made to optimize performance and clarity.

8. Documentation and Final Submission

Finally, the complete project—architecture, workflow, UI screens, backend structure, and conceptual AI modules—was documented clearly. A final presentation was prepared to summarize the project's purpose, features, and impact.

6. Snapshots / Screenshots

LOGIN & REGISTER WEBPAGE:

FLEET DASHBOARD WEBPAGE:
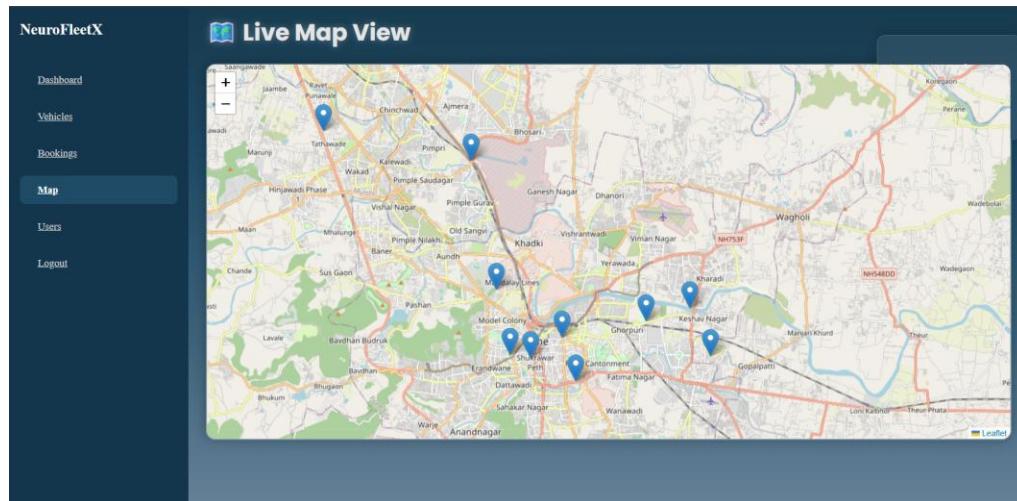

VEHICLE DASHBOARD WEBPAGE:

BOOKING DASHBOARD WEBPAGE:

MAP VIEW WEBPAGE:

USER MANAGEMENT WEBPAGE:

7. Challenges Faced

API Integration

Integrating the backend APIs with the frontend components was difficult due to mismatched data formats and response handling.

Resolution: I used Postman to test each API, corrected data structures, and integrated them step by step to ensure smooth communication.

Time Management

Balancing design, development, testing, and documentation within the internship duration was challenging.

Resolution: I created weekly schedules, prioritized key tasks, and followed a milestone-based workflow to stay organized.

Clarifying Requirements

At times, understanding certain project expectations or system requirements was unclear.
Resolution: I sought clarification through discussions, revisited project briefs, and documented requirements properly to avoid confusion.

8. Learnings & Skills Acquired
- Understanding of fleet management systems
- Basics of route optimization and telematics
- Improved knowledge of frontend-backend architecture
- Experience with AI concepts like predictive maintenance
- Enhanced problem-solving, documentation, and planning skills
- Improved communication and project organization abilities

9. Testimonials from team
This internship enriched my understanding of large-scale mobility systems and strengthened my confidence in designing real-world technical solutions. Working on NeuroFleetX helped me translate concepts into structured, practical system designs.

10. Conclusion
This internship provided a strong foundation in intelligent fleet management and system design. The Infosys Springboard internship offered hands-on exposure to real-world project development. Working on Neurofleet X allowed me to explore AI, mobility systems, and scalable architecture. This experience strengthened my technical confidence and aligned perfectly with my career goals in **software engineering and intelligent systems development**.

11. Acknowledgements
I would like to thank **Infosys Springboard**, my mentor, for their guidance and support throughout this internship. Their resources and mentorship greatly contributed to my learning experience.