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- **Problem Statement ID – SIH1612**
- **Problem Statement Title- Automated Bus Scheduling and Route Management System for Delhi Transport Corporation**
- **Theme- Smart Vehicles**
- **PS Category- Software**
- **Team Name – Dead Coders**

Dead Coders

Bus Scheduling and Route Management System For DTC

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Proposed Solution

- Our system integrates crew allocation and route planning, providing real-time data and reports to improve efficiency, reduce errors, and enhance service coverage.
- This system automates manual scheduling and planning, reducing time and resources required, and minimizing errors and inefficiencies
- This unique combination of algorithms, data analytics, and GIS technologies provides a scalable and flexible solution for optimizing bus operations, making it an innovative solution for the Delhi Transport Corporation.

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TECHNICAL APPROACH

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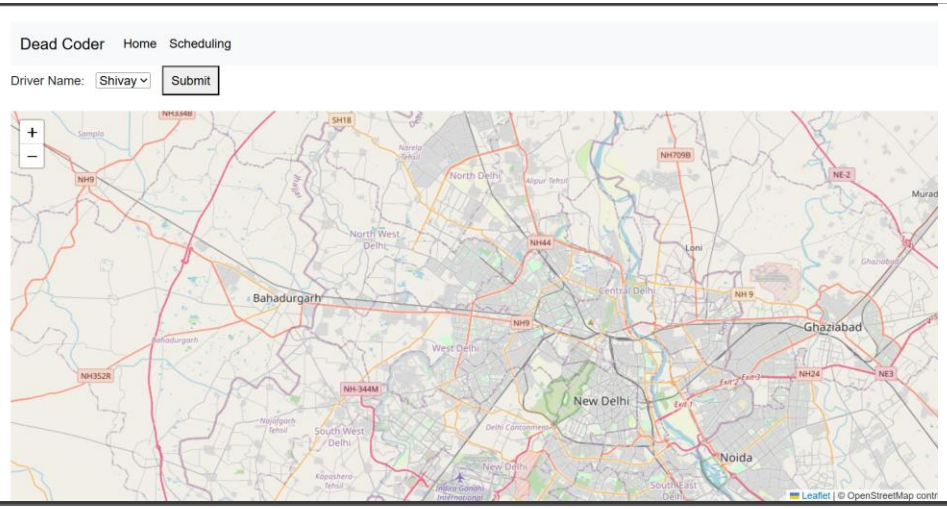
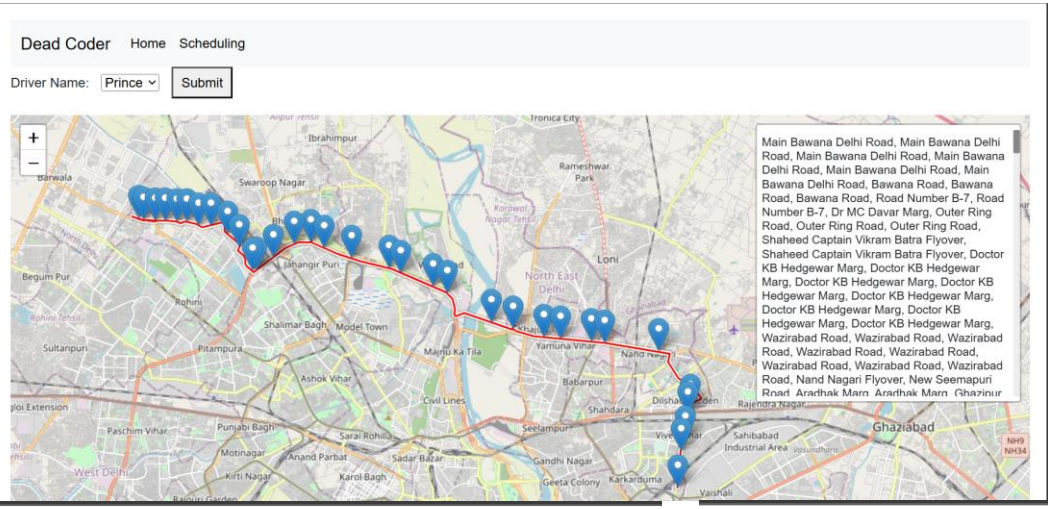
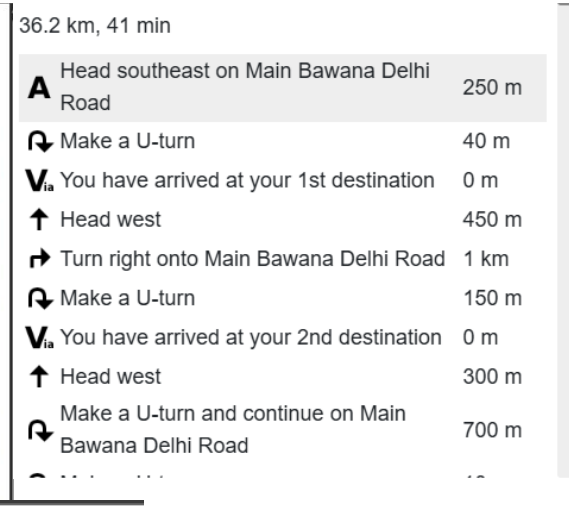
- Programming languages – Python, HTML, CSS, JS
- Frameworks – Flask, Flask_SQLAlchemy, Leaflet, Bootstrap







Scheduling List

Dead Coder Home Scheduling

Add New Record

Student Name	Date	Status	Actions
Shivay Mendiratta	2024-09-06	Present	Edit Delete
Prince	2024-09-06	Present	Edit Delete

Add New Record

Student Name:
Bus:
Date: dd-mm-yyyy
Status: Present
Add Record
Back to List

Github link :-

Shivay315/SIH-24 (github.com)

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FEASIBILITY AND VIABILITY

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- **GIS Technologies**: The use of GIS technologies to map existing bus routes and visually represent the bus network is feasible with the use of existing GIS software and tools
- **Cost Savings**: The system can help reduce costs by optimizing route planning, reducing fuel consumption, and minimizing the need for manual data entry.
- **User Acceptance**: The system can be designed to be user-friendly and intuitive, with a user-friendly interface that minimizes the need for training and support.
- **Fuel Consumption**: The system can help reduce fuel consumption by optimizing route planning and minimizing the need for manual data entry.

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IMPACT AND BENEFITS

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a. **Reduced Scheduling Time**: Automated scheduling will save time and effort for DTC staff, allowing them to focus on other critical tasks.
b. **Improved Resource Allocation**: Optimal crew and bus assignments will lead to better utilization of resources, reducing waste and increasing productivity.
c. **Lower Maintenance Costs**: Better scheduling and route planning will reduce the wear and tear on buses, leading to lower maintenance costs.
d. **Increased Mobility**: The system will provide better connectivity for citizens, particularly in areas with limited transportation options.

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RESEARCH AND REFERENCES

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- Geocode | ORS API (openrouteservice.org)
- https://getbootstrap.com/docs
- Welcome to Flask — Flask Documentation (3.0.x) (palletsprojects.com)
- JavaScript | MDN (mozilla.org)
- Documentation - Leaflet - a JavaScript library for interactive maps (leafletjs.com)
- perliedman/leaflet-routing-machine: Control for routing in Leaflet (github.com)
- https://delhicitybus.in/
- https://www.google.com/maps
- https://www.liedman.net/leaflet-routing-machine/
- https://stackoverflow.com/