

Project Title:

Route Sync

TEAM NO.: 85

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Project Details:

An Platform where you can get combined results for efficient traveling and city commute the travel maybe of any mode of transport such as Cab , Metro or Bus.

Problem Statement:

Urban commuters often struggle with fragmented transport information spread across separate apps for buses, metros, and cab services. This leads to confusion, poor time planning, and higher travel costs. There is a need for a unified platform that aggregates all transport modes in one place and recommends the best travel option based on time, convenience, and budget. The proposed system solves this by providing real-time data and intelligent route suggestions to improve overall commuting efficiency.

Need of Project:

1. To provide a **single integrated platform** for buses, metro, and cab services.
2. To offer **optimized route suggestions** based on travel time, cost, and connectivity.
3. To enable **real-time location tracking and safety reporting**.
4. To provide **schedule-based information** for buses and metro services.
5. To assist users in selecting the **best ride option** according to budget and convenience.
6. To maintain **travel history** for future reference.
7. To provide **travel planning and city exploration suggestions**.
8. To integrate an **AI chatbot** for user assistance.
9. To support **family travel connectivity** for shared tracking and safety.

Proposed Solution:

Route Sync acts as a centralized smart commuting solution that aggregates transport data from multiple sources and presents it through a user-friendly interface. The system analyzes available routes and transport modes, compares them using predefined parameters such as cost, time, and number of interchanges, and recommends the most efficient option to the user. The application also enhances commuter safety through real-time location sharing and family connectivity features..

System Features

Combined Transport Platform

- Integration of **Bus**, **Metro**, and **Cab** services.
- Eliminates the need for multiple applications.

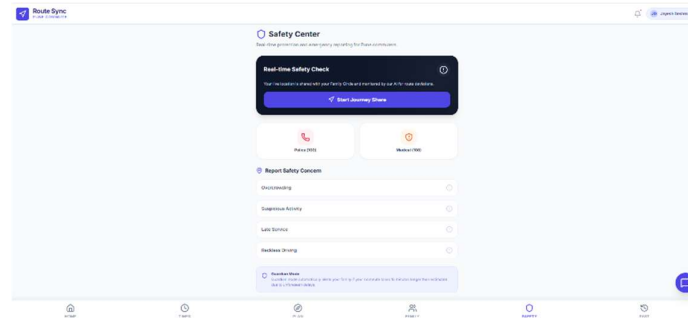
Route Optimization

- Suggests shortest, fastest, and most economical routes.
- Considers traffic conditions and connectivity.

Real-Time Safety

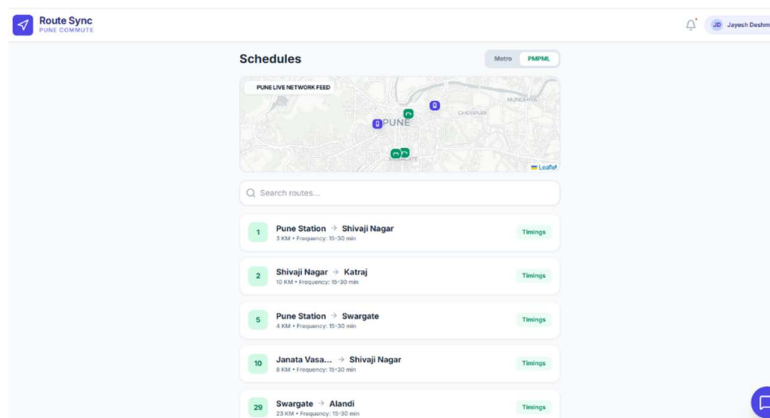
Location &

- Dynamic location updates.
- Emergency reporting and live tracking for family members



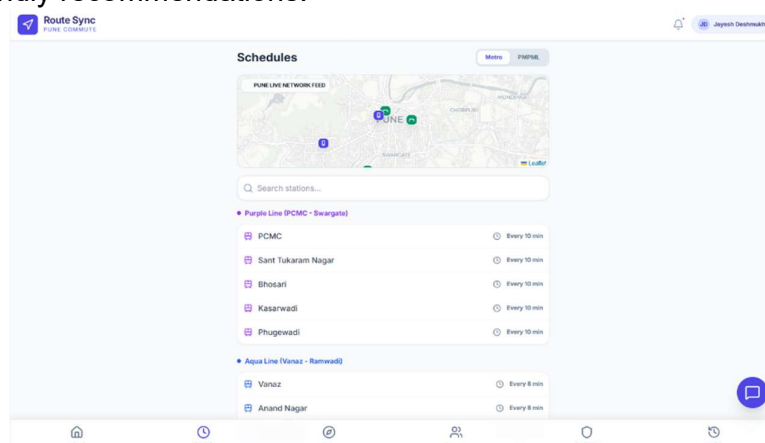
Schedule List

- Timetables for buses and metro services.
- Alerts for delays and schedule changes.



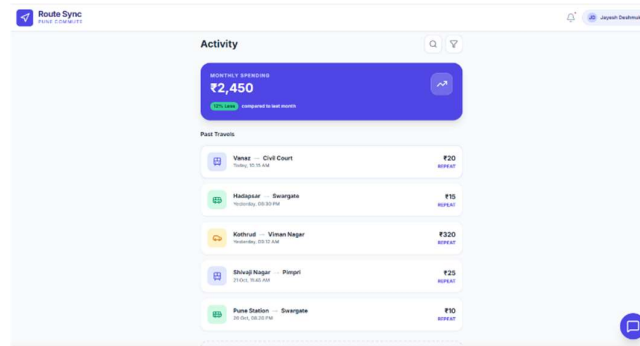
Best Ride Selection

- Compares transport options based on price and convenience.
- Provides budget-friendly recommendations.



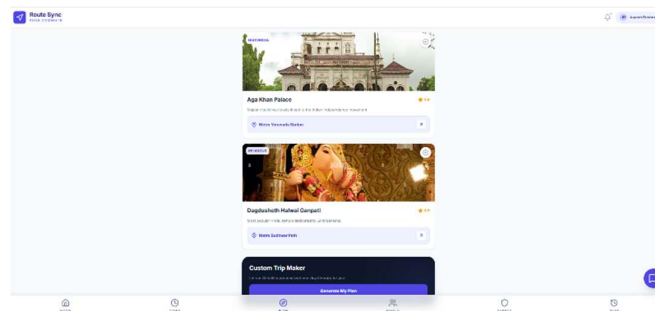
Travel History

- Stores past trips.
- Helps users analyze travel patterns.



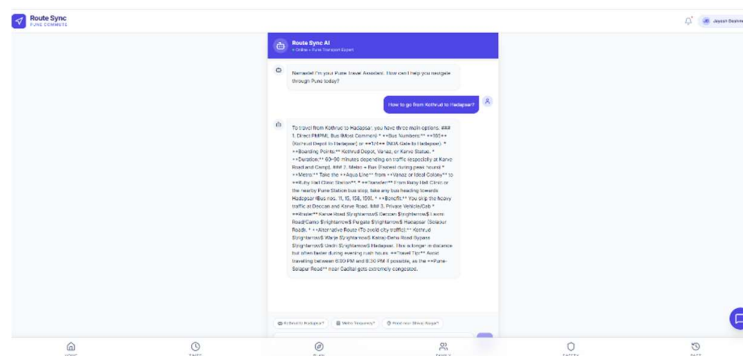
Travel Planner & City Guide

- Suggests popular city destinations.
- Provides routes and timings to reach them.



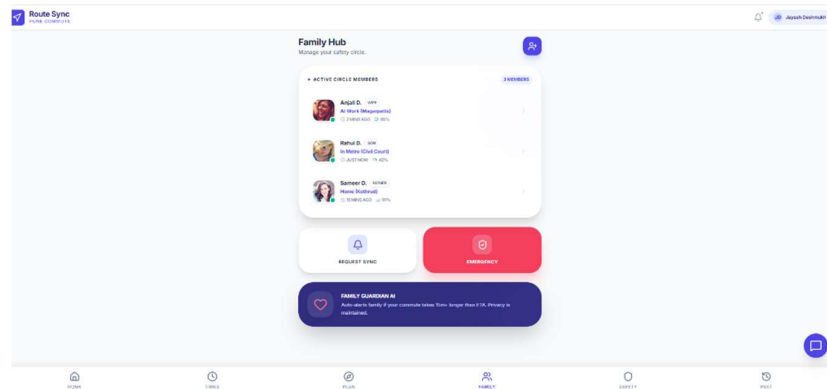
AI Chatbot

- Assists users with route queries and travel guidance.
- Provides instant responses and suggestions.



Family Travel Connect

- Enables family members to track journeys.
- Improves safety and coordination.



Technology Used:

1. Frontend: React
2. Backend: Node.js / Firebase
3. Database: Firebase / Cloud Firestore
4. AI Module: NLP-based chatbot
5. Location Services: GPS and Maps SDK

Project Outcomes:

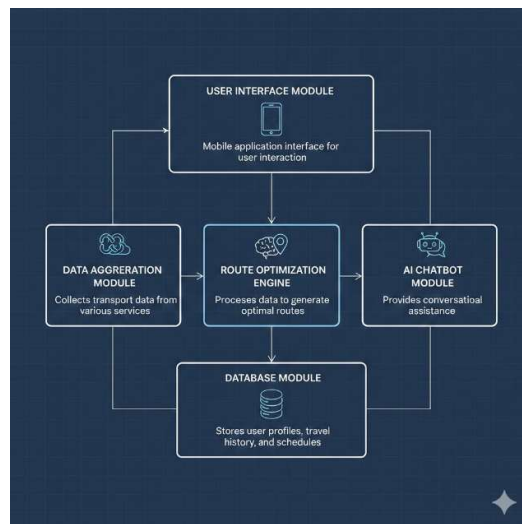
1. Reduced travel time and cost for commuters.
2. Improved user experience through a unified platform.
3. Enhanced commuter safety with live tracking features.
4. Efficient urban mobility and better travel planning.

6. System Architecture

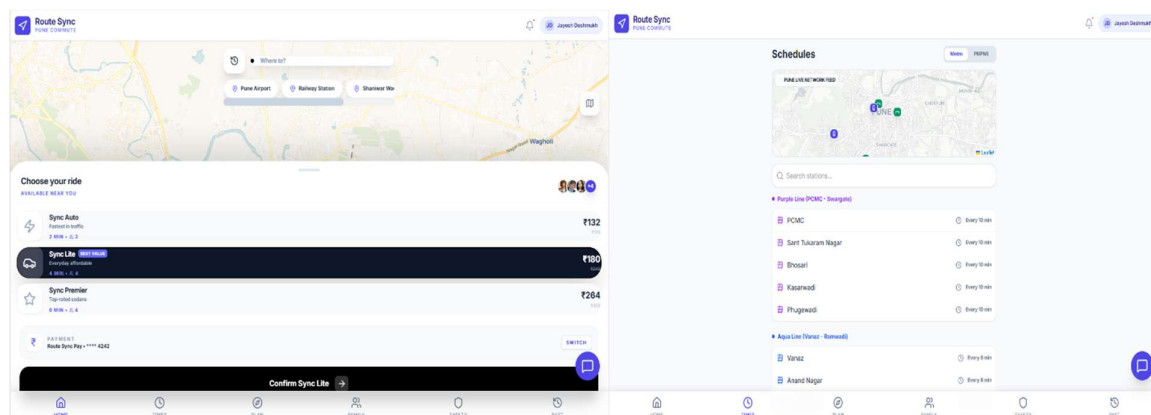
The system consists of the following modules:

- User Interface Module – Mobile application interface for user interaction.
- Data Aggregation Module – Collects transport data from various services.
- Route Optimization Engine – Processes data to generate optimal routes.
- AI Chatbot Module – Provides conversational assistance.
- Database Module – Stores user profiles, travel history, and schedules.

The steps can be visualized by seeing the below block diagram



Results:



VOIS

Applications:

- Daily urban commuting.
- Tourists exploring city transport.
- Students and working professionals.
- Family and group travel coordination.

Future scope for project enhancement:

1. Integration with **real-time traffic prediction using AI/ML**.
2. Support for **electric vehicle routes and charging stations**.
3. Multi-city expansion across India.
4. Voice-based navigation and regional language support.
5. Ticket booking and digital pass integration.

Conclusion:

Route Sync provides a comprehensive solution to the challenges faced by urban commuters by integrating multiple transport services into a single intelligent platform. By combining real-time data, route optimization, AI-based assistance, and safety features, the system aims to improve commuting efficiency, reduce confusion, and enhance the overall urban travel experience.