

# TEAM CODE CRACKER

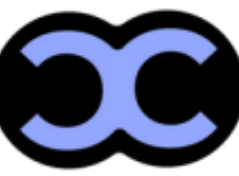


- **Theme** - Green Tech
- **Problem Statement Title**- Eco-Friendly Transportation Systems

Innovative transportation solutions that reduce emission and promote sustainable mobility.

- **Team ID** - 32627972
- **Team Name** - Code Cracker

**BrahmaX 1.0**



## OUR SOLUTION

- A smart mobility app that acts as a personal sustainability coach and transportation guide, helping users:
- Discover greener routes using real-time data and multi-modal transport options (e.g., metro + cycling)
- Track their carbon footprint and savings over time
- Get rewarded with GreenPoints for choosing sustainable options
- Join community challenges, helping users engage in friendly competition to lower emissions
- Give feedback to city planners via anonymized heatmaps and usage trends

## OUR VISION

- Eco-conscious commuting is the default, not the exception.
- Technology guides people toward greener routes.
- Communities are incentivized to make low-carbon choices.
- Data empowers city planners to build better infrastructure.
- A unified platform that helps users plan smarter routes, reduce emissions, and earn rewards for choosing green transportation.



## **Feasibility and viability.**

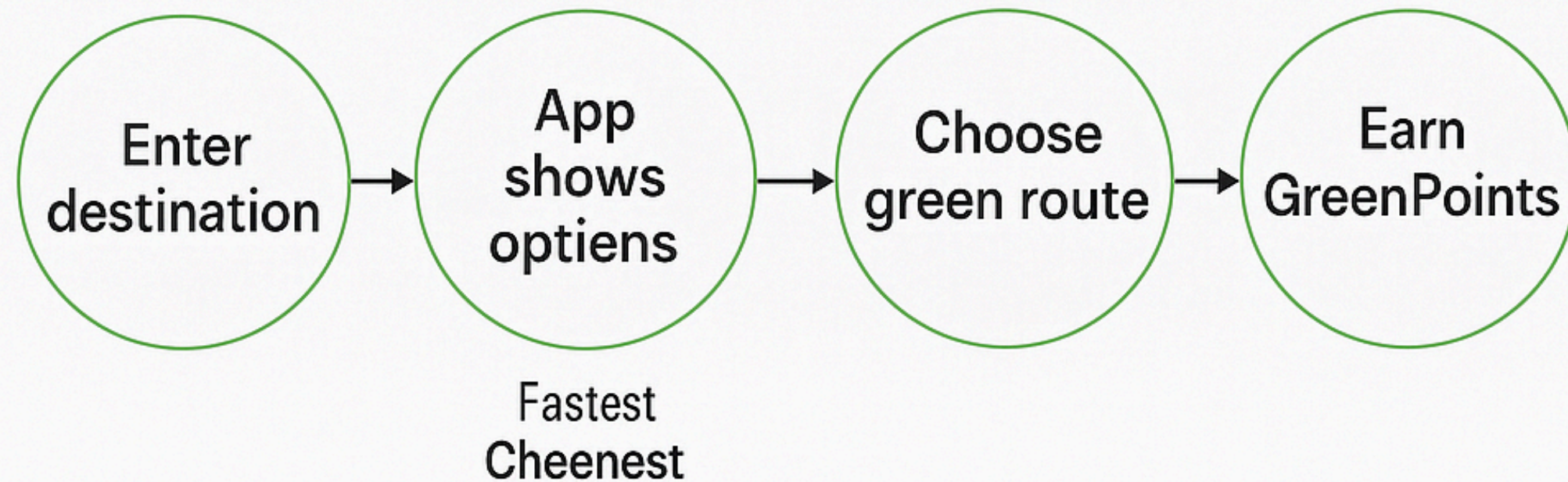
- Readily Available Tech
- Cross-Platform Development
- Scalable Backend
- Data sources are Accessible
- partnerships with Local Transit Authorities
- Reward Model is Low-Cost & Sponsor-Friendly
- Built-In Virality
- Premium Analytics Dashboards for Cities

## **CHALLENGES AND RISKS**

- Integration Complexity: Syncing real-time data from multiple transport APIs can be inconsistent across regions.
- User Adoption: Getting people to switch from personal vehicles to eco-modes takes behavior change.
- GPS/Data Dependency: App needs constant access to accurate location and connectivity.
- Privacy Concerns: Users may worry about data tracking; requires strong privacy policy.
- Government Collaboration: Depends on partnerships with local authorities for full potential.
- Reward Funding: Sustaining the reward system needs reliable sponsor/partner ecosystem.



# GREEN PATH DATA FLOW DIAGRAM



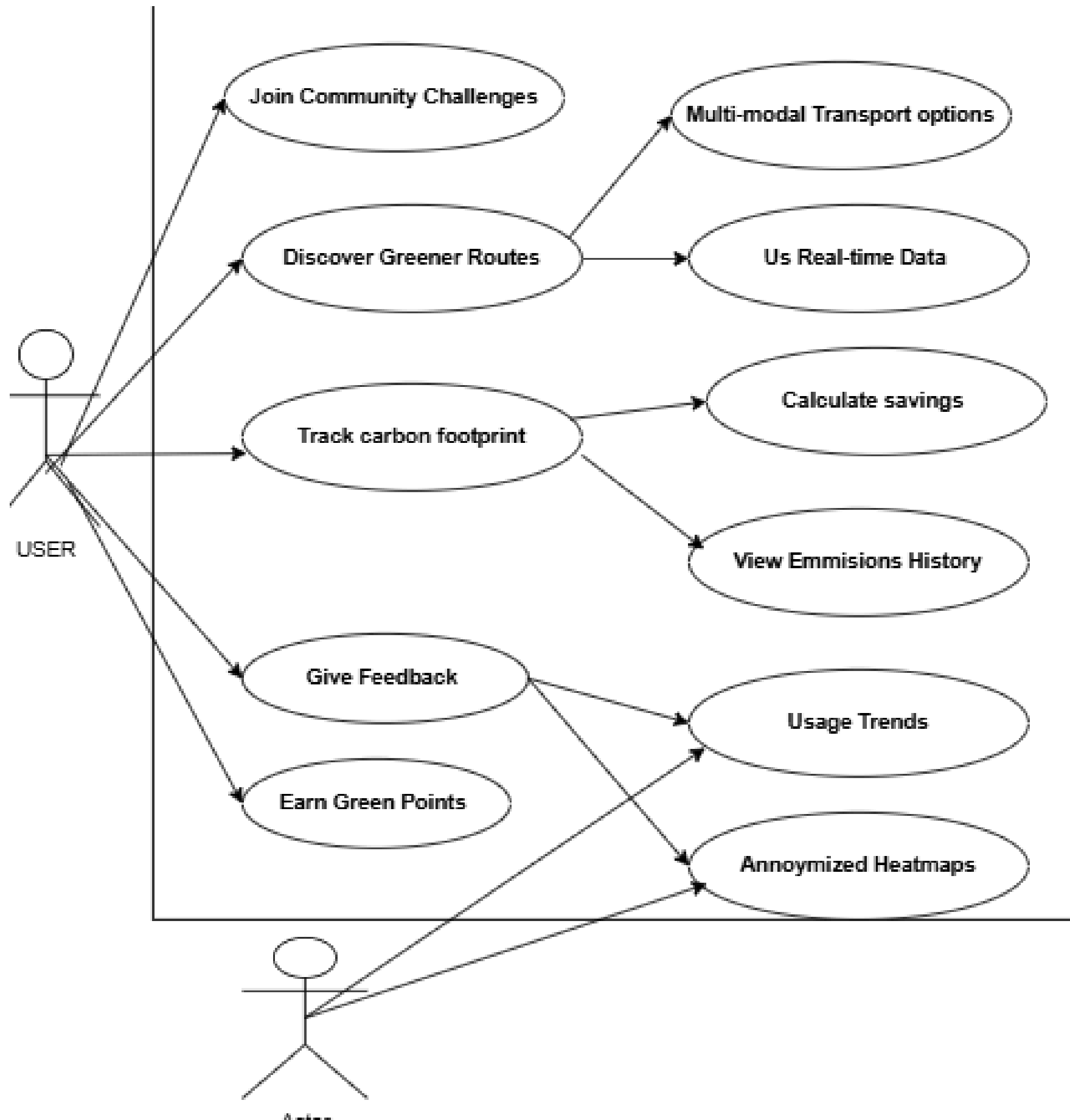
## TARGET AUDIENCE

- Daily commuters
- College campuses
- Smart cities & municipalities
- Delivery/logistics fleets

## FUTURE SCOPES

- Integrate with EV charging networks
- AI-based route prediction based on pollution forecasts
- Collaborate with local businesses for point redemption
- Government-backed green commuting incentives

# GREEN PATH USE CASE DIAGRAM



## IMAPCTS AND BENEFITS

- Reduced Carbon Emissions
- Improved Air Quality
- Supports Climate Goals
- Smart Decision-Making
- GreenPoint Rewards
- Eco-Footprint Tracker
- Community Challenges
- Green Integration

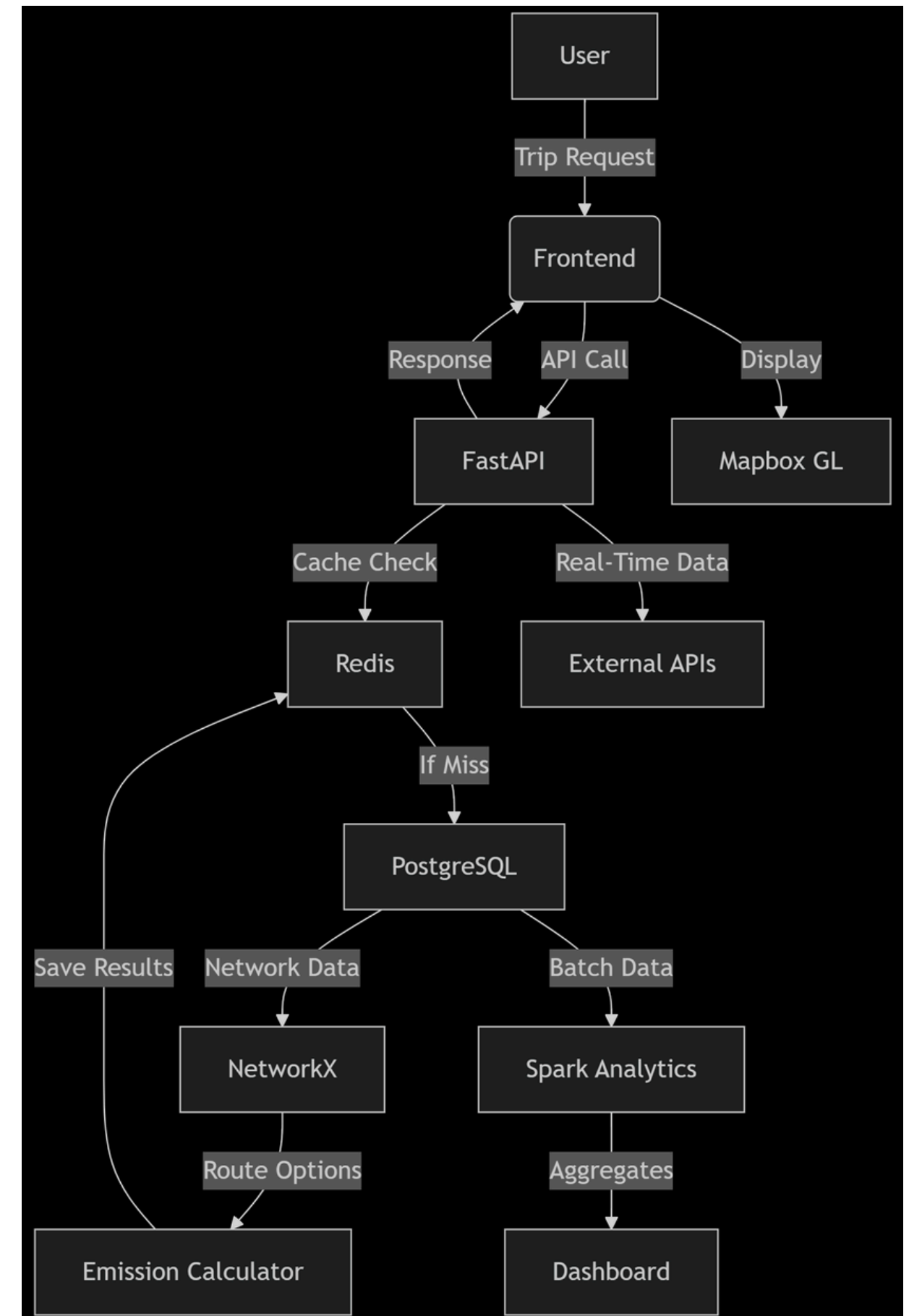


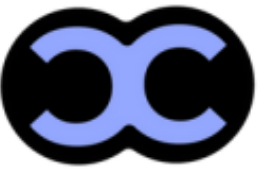


## TECHNICAL APPROACH

- A FastAPI backend for route calculations and emissions tracking
- React frontend with interactive map
- PostgreSQL database with PostGIS for spatial data
- Redis for caching
- Spark for analytics
- Docker and Kubernetes for deployment

**BrahmaX 1.0**





## **REFERENCES**

- <https://shorturl.at/Cd3dl>
- <https://shorturl.at/p7FyN>
- <https://www.mdpi.com/2071-1050/15/21/15457>
- <https://www.tandfonline.com/doi/full/10.1080/16874048.2020.1719340#d1e154>
- <https://www.nature.com/articles/s41599-024-02737-8>

## **THANK YOU**