

SustainMove



SUSTAINABLE URBAN PLANNING AND DESIGN

Traffic Management and Optimization

Section 1:

Understanding Sustainable Development Goals



The 17 Sustainable Development Goals



1
NO POVERTY



2
ZERO HUNGER



3
GOOD HEALTH
AND WELL-BEING



4
QUALITY EDUCATION



5
GENDER EQUALITY



6
CLEAN WATER
AND SANITATION



7
AFFORDABLE AND
CLEAN ENERGY



8
DECENT WORK AND
ECONOMIC GROWTH



9
INDUSTRY, INNOVATION
AND INFRASTRUCTURE



10
REDUCED
INEQUALITIES



11
SUSTAINABLE CITIES
AND COMMUNITIES



12
RESPONSIBLE
CONSUMPTION
AND PRODUCTION



13
CLIMATE ACTION



14
LIFE BELOW
WATER



15
LIFE ON LAND



16
PEACE, JUSTICE
AND STRONG
INSTITUTIONS



17
PARTNERSHIPS
FOR THE GOALS

Our Objectives



A software system for traffic management and optimization involves a combination of planning, data analysis, software development, and collaboration with city authorities.



Objectives of our traffic management and optimization system is to reduce congestion, improve traffic flow, and minimize emissions.



Used real-time data streams, machine learning models, and optimization algorithms.

Creating an Impact

Impact 1

Reduced Congestion:
One of the primary objectives of traffic management and optimization is to reduce traffic congestion.

Impact 2

Improved Air Quality: Traffic congestion and inefficient traffic flow contribute to higher levels of air pollution.

Impact 3

Enhanced Safety: Traffic management systems often incorporate safety features



Impact 1

Reduced Congestion: One of the primary objectives of traffic management and optimization is to reduce traffic congestion. Congestion leads to longer travel times, increased fuel consumption, and frustration among commuters. By implementing efficient traffic management strategies such as intelligent traffic signals, congestion pricing, and dynamic route guidance, cities can alleviate congestion and improve the flow of traffic.

Impact 2

Improved Air Quality: Traffic congestion and inefficient traffic flow contribute to higher levels of air pollution, including emissions of greenhouse gases and harmful pollutants. Implementing traffic management and optimization measures, such as promoting public transportation, carpooling, and adopting electric vehicles, can lead to a reduction in air pollution and an improvement in air quality. This, in turn, has positive health impacts on residents, reducing the prevalence of respiratory diseases and other health issues.



Impact 3



Enhanced Safety: Traffic management systems often incorporate safety features like traffic monitoring cameras, speed limit enforcement, and adaptive cruise control. These technologies can help reduce the number of accidents and enhance overall road safety. Furthermore, traffic optimization can include strategies to manage intersections and pedestrian crossings more efficiently, reducing the risk of accidents involving pedestrians and cyclists.

Methodology

**Data Collection and Analysis: API
Algorithms to find optimized routes
Emergency Calls for High Traffic
Real-time Data Display for Authorities
Helping Users Find Optimized Routes**

Section 3:

Measuring Progress Towards Sustainable Development Goals



Technology Used:

FLASK - Python, Html, Javascript
API - Mapbox

MapBox API

Real-Time Data
collection and
analysis

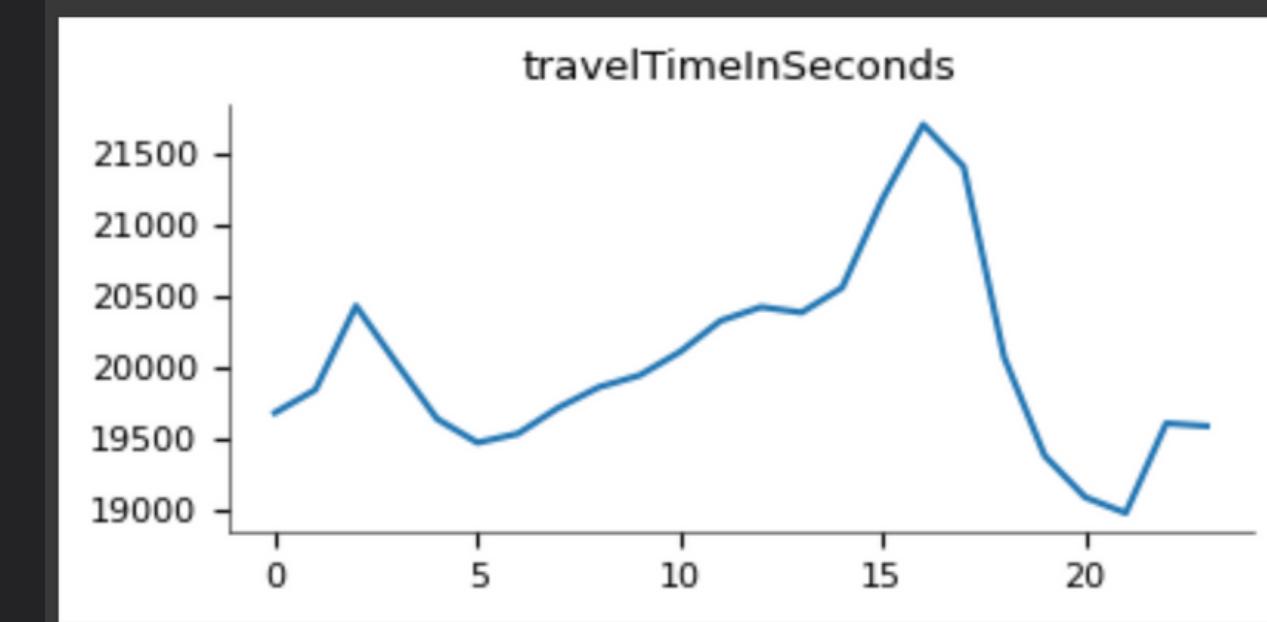
Algorithm to find
optimal route

Displaying the map to
Users

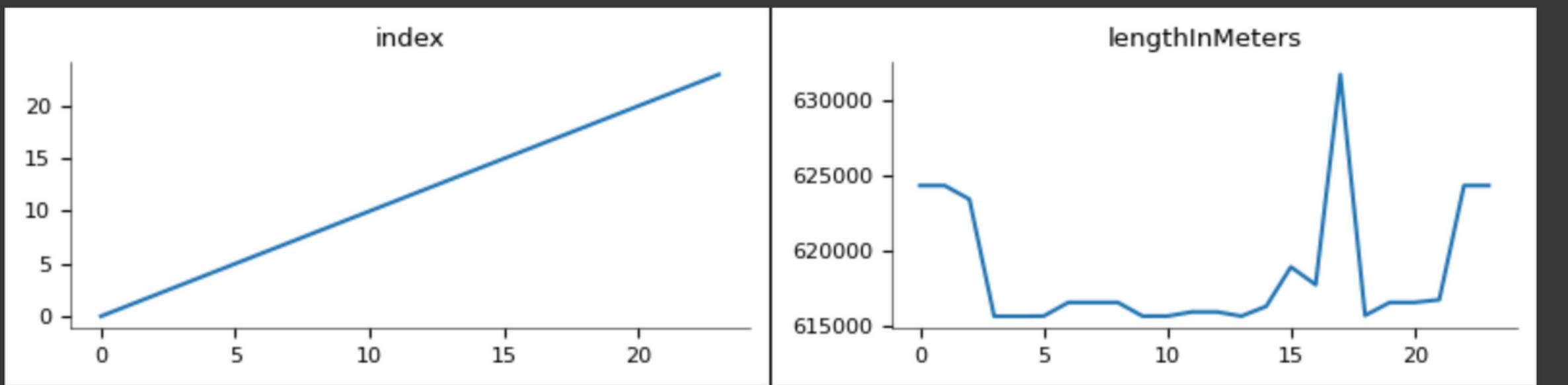
Emergency Call (if
traffic is high)

Real-Time Analysis

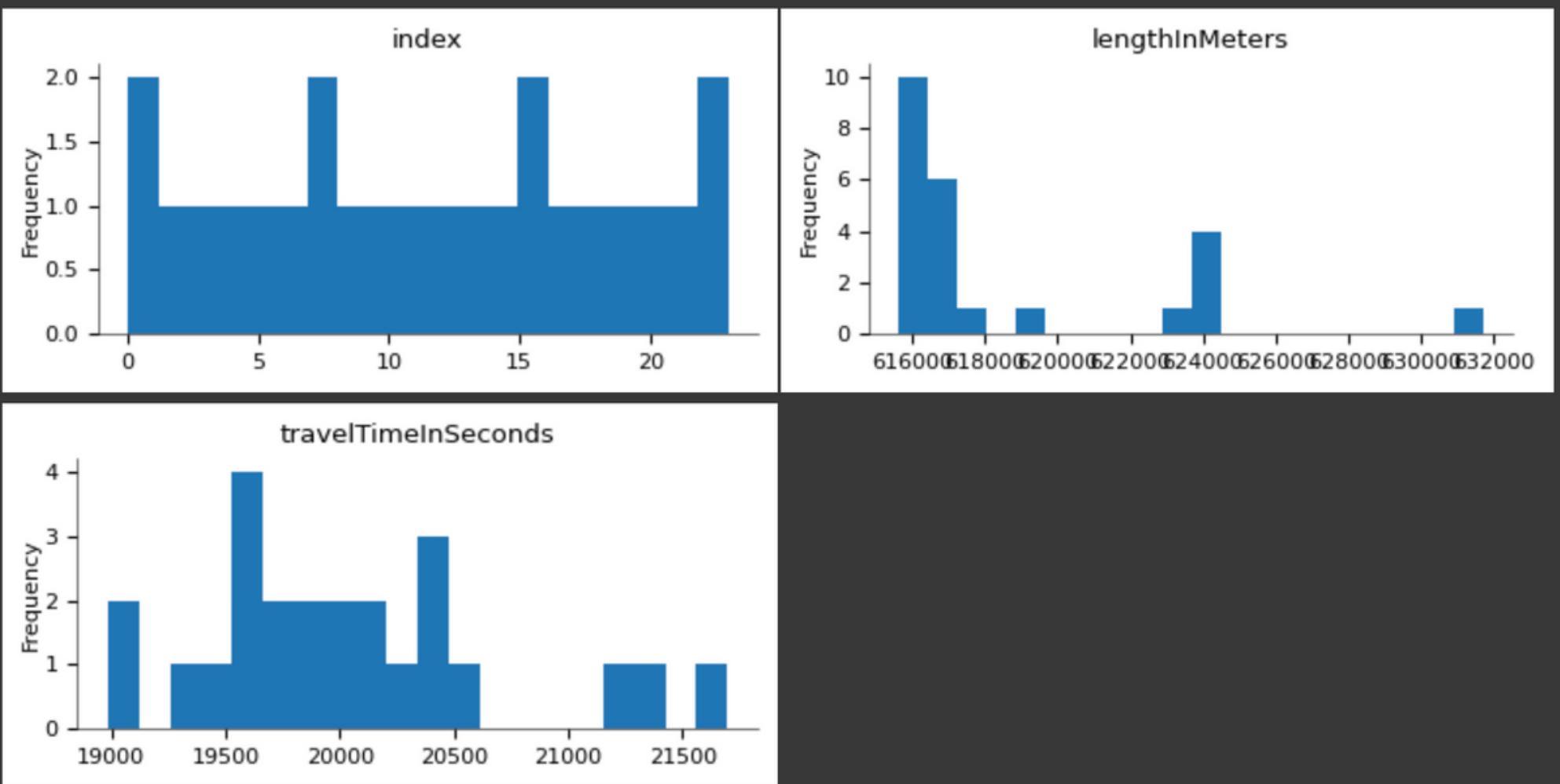
Visualize traffic using graphs
and charts.



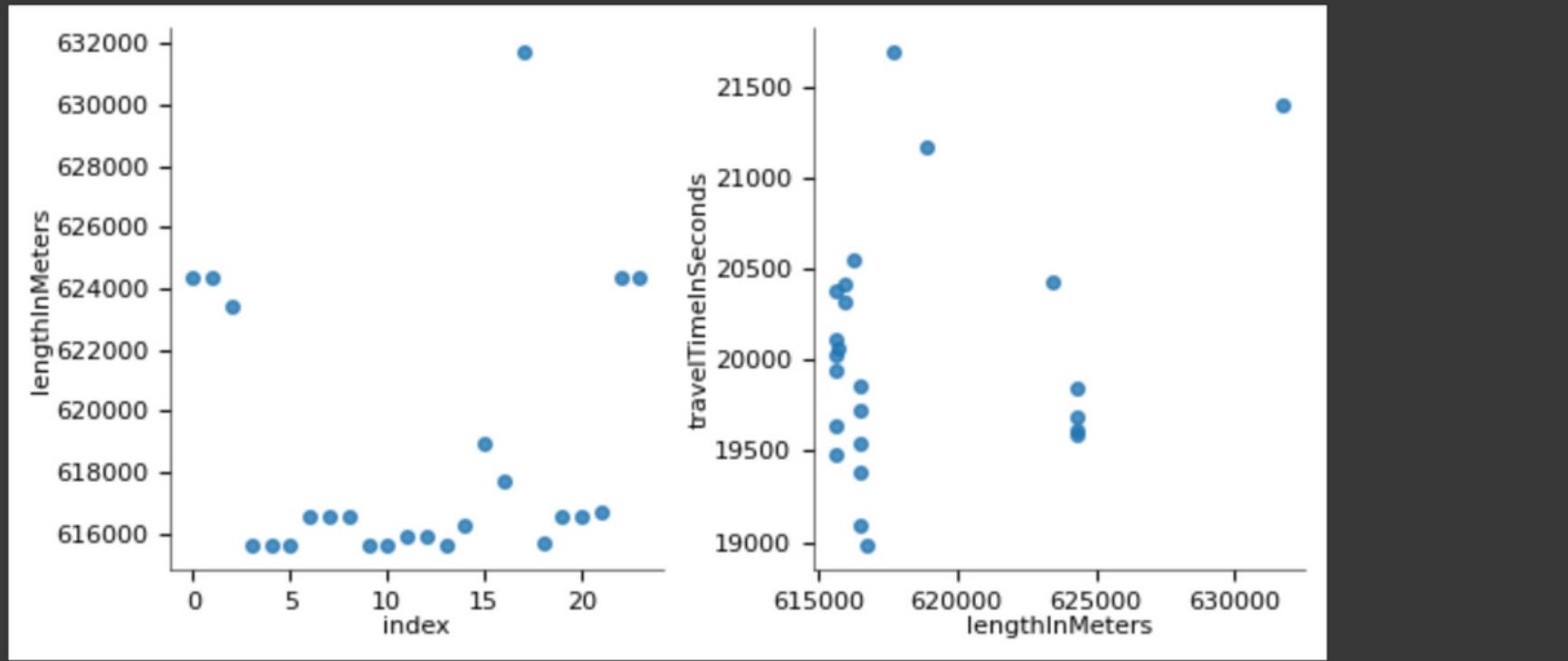
Values



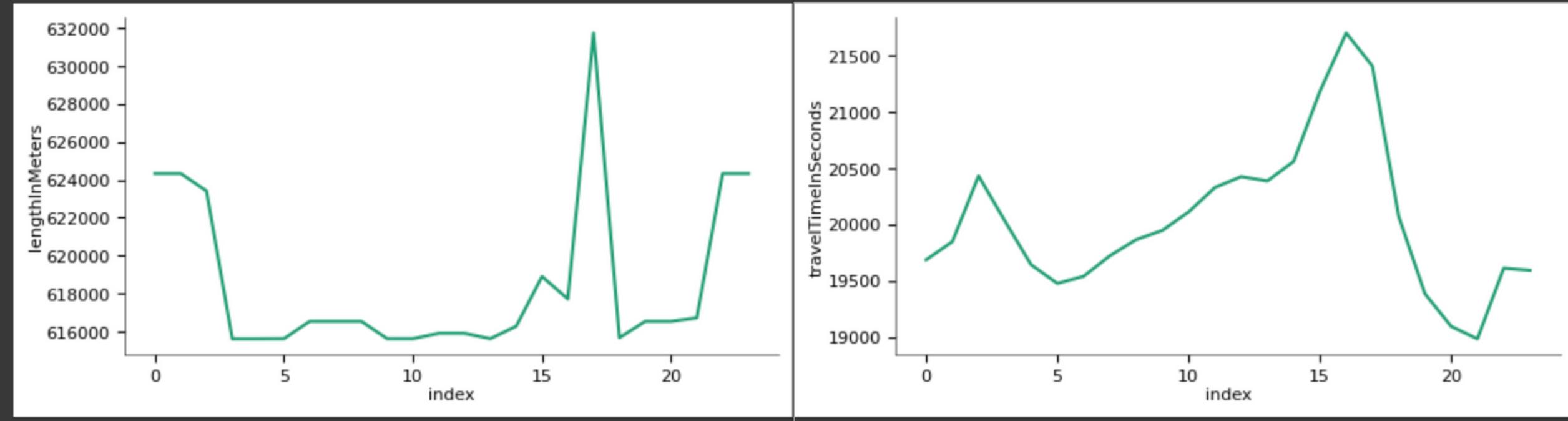
Distributions



2-d distributions

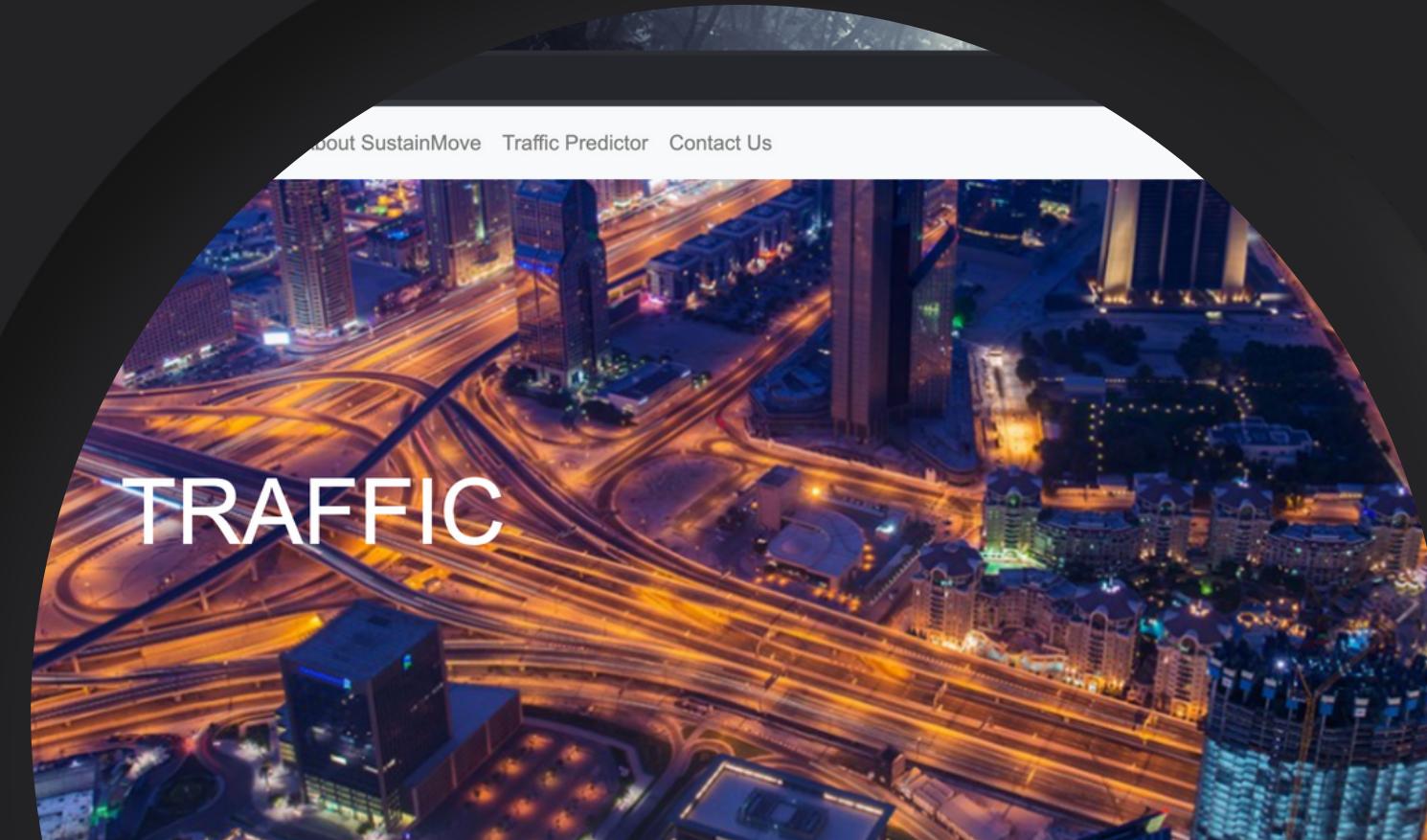


Time series



Demo

Analysis and key findings



Our Motive

A software system for traffic management and optimization involves a combination of planning, data analysis, software development, and collaboration with city authorities.

Our Vision

Objectives of our traffic management and optimization system is to reduce congestion, improve traffic flow, and reduce emissions.

TRAFFIC



Our Motive

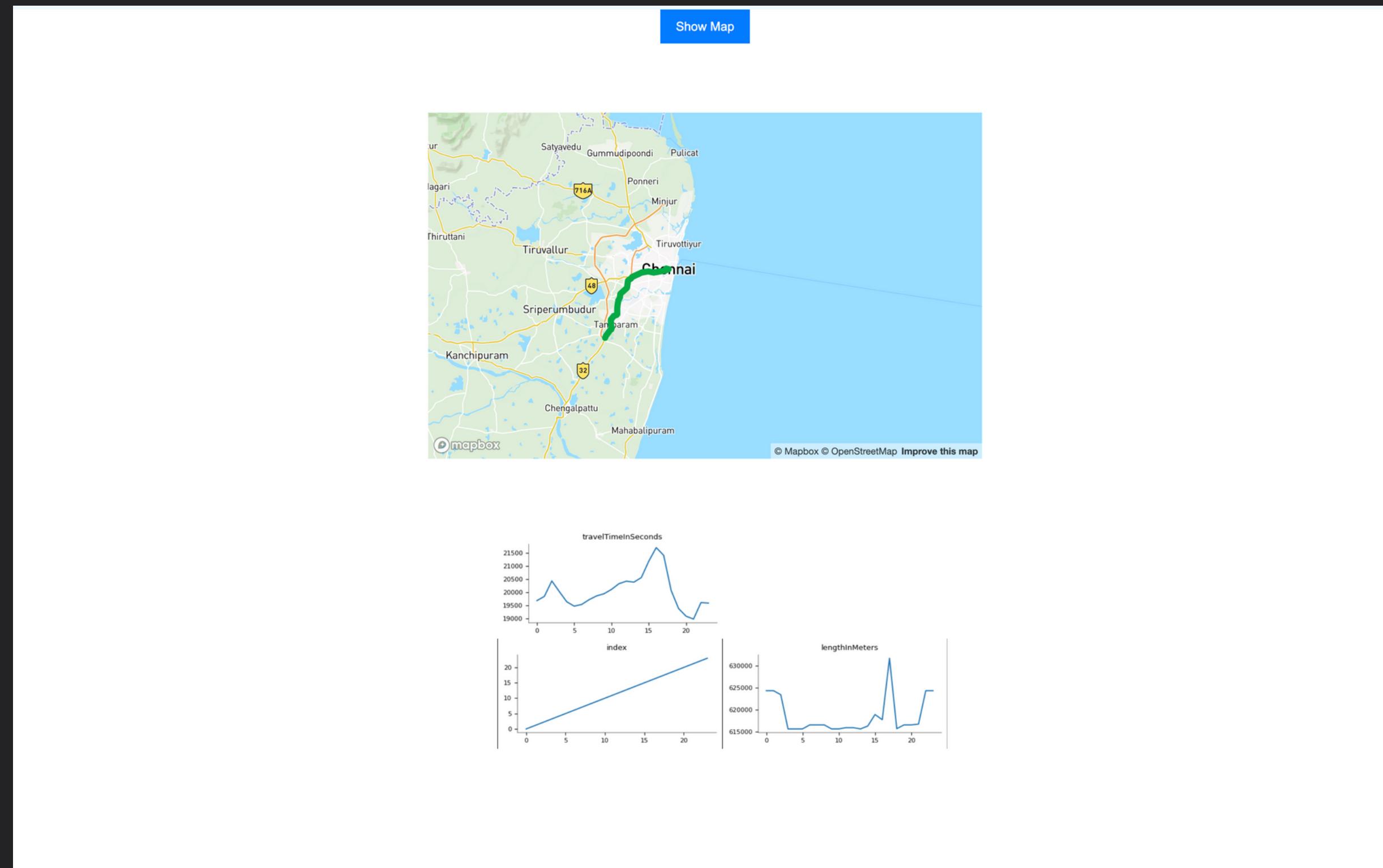
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Tech Used:

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Travel Time (seconds): 3026
Distance (meters): 36163
Start Latitude: 13.08345
Start Longitude: 80.27019
End Latitude: 12.88621
End Longitude: 80.08307
```

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Optimal route
Distance
time

Limitation and Future Scope:

- API Limitation
-
- Traffic Data Integration
- Machine Learning and Predictive Analysis
- User-Friendly Mobile App
- Smart Traffic Signals

Conclusion:

In conclusion, our traffic management and optimization system represent a significant step towards addressing the complex challenges associated with urban traffic. By leveraging real-time data, intelligent algorithms, and user interactions, we have developed a system that not only assists commuters in finding the best routes but also empowers city authorities to make data-driven decisions for traffic management.

The successful implementation of this project has demonstrated the potential for improving traffic flow, reducing congestion, and minimizing environmental impact. While we have achieved notable results, we acknowledge that the field of traffic management is continuously evolving. The future holds exciting opportunities for further enhancements and innovations in this domain.

Thank you!