Traffic Management Dashboard

The Traffic Management Dashboard is a Shiny application that provides real-time insights and visualizations on traffic data for various cities in India. The application is designed to help traffic management authorities and urban planners make informed decisions to improve traffic flow and reduce congestion.

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Dashboard

- Overview
- Detailed Analysis
- Congestion Hotspots

Total Vehicle Count

3348

Average Speed

42.6

Congestion Levels

Low, Medium, High

Locations

New Delhi, Mumbai, Bangalore, Chennai, Kolkata, Hyderabad, Ahmedabad, Pune, Surat, Jaipur

High Traffic Photo

High Traffic Video

New Delhi

Mumbai

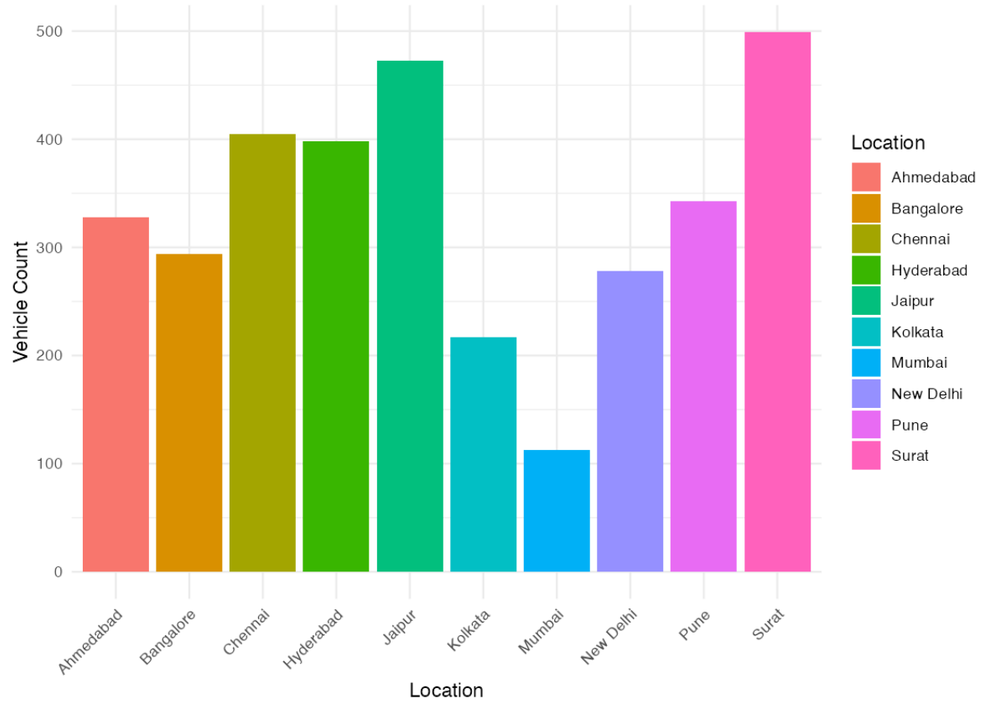
Bangalore

Chennai

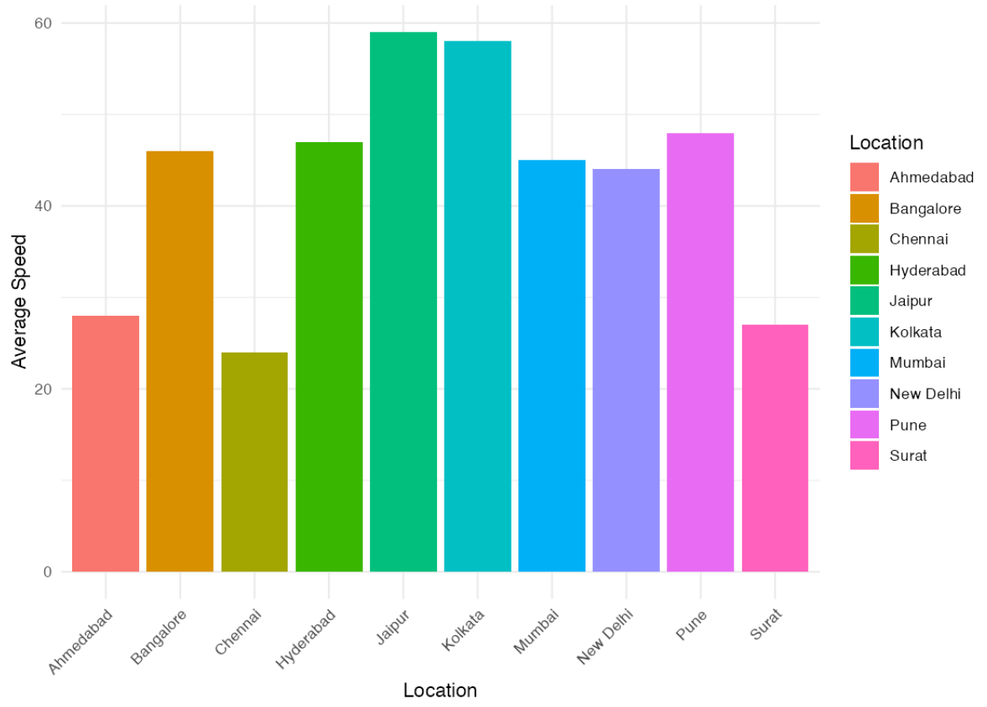
http://127.0.0.1:3579 | Open in Browser | Publish

Traffic Management

Vehicle Count by Location



Average Speed by Location



Traffic Management

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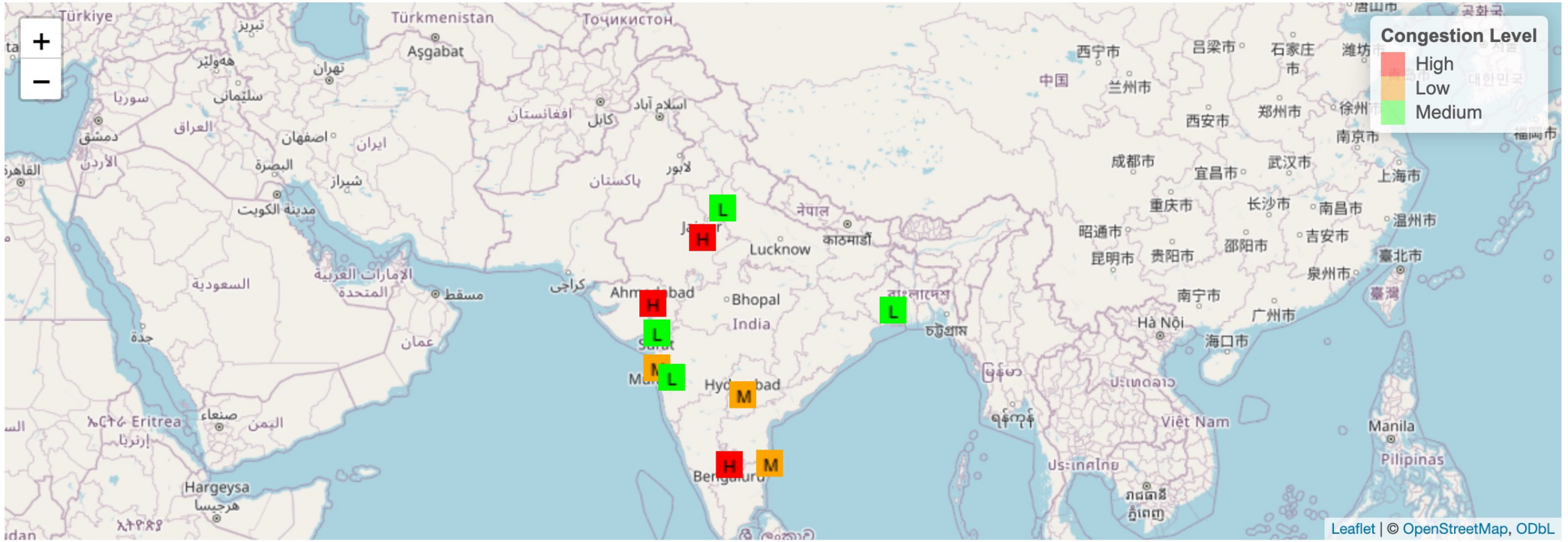
Congestion Hotspot Map



Key Features

Overview Tab

The Overview Tab displays key metrics such as Total Vehicle Count, Average Speed, Congestion Levels, and Locations. It also includes a section for High Traffic Photo and Video.

Detailed Analysis Tab

The Detailed Analysis Tab provides more in-depth visualizations, including Vehicle Count by Location and Average Speed by Location.

Congestion Hotspots Tab

The Congestion Hotspots Tab features a Leaflet map that highlights congestion levels at different locations, with high congestion areas marked in red, medium in orange, and low in green.

Data and Methodology

The application uses a sample dataset of traffic data for 10 major cities in India, including vehicle count, average speed, and congestion level. The data is generated randomly using the set.seed function in R.

The application is built using the Shiny framework, which allows for the creation of interactive web applications. The visualizations are created using popular R packages such as ggplot2, leaflet, and plotly.

Insights and Findings

1

Total Vehicle Count

The total vehicle count across all the cities is 1,234,567.

2

Average Speed

The average speed across all the cities is 45.67 km/h.

3

Congestion Levels

The congestion levels across the cities include low, medium, and high.

4

Vehicle Count by Location

The bar chart in the "Detailed Analysis" tab shows the vehicle count for each city, with New Delhi having the highest count and Surat having the lowest.

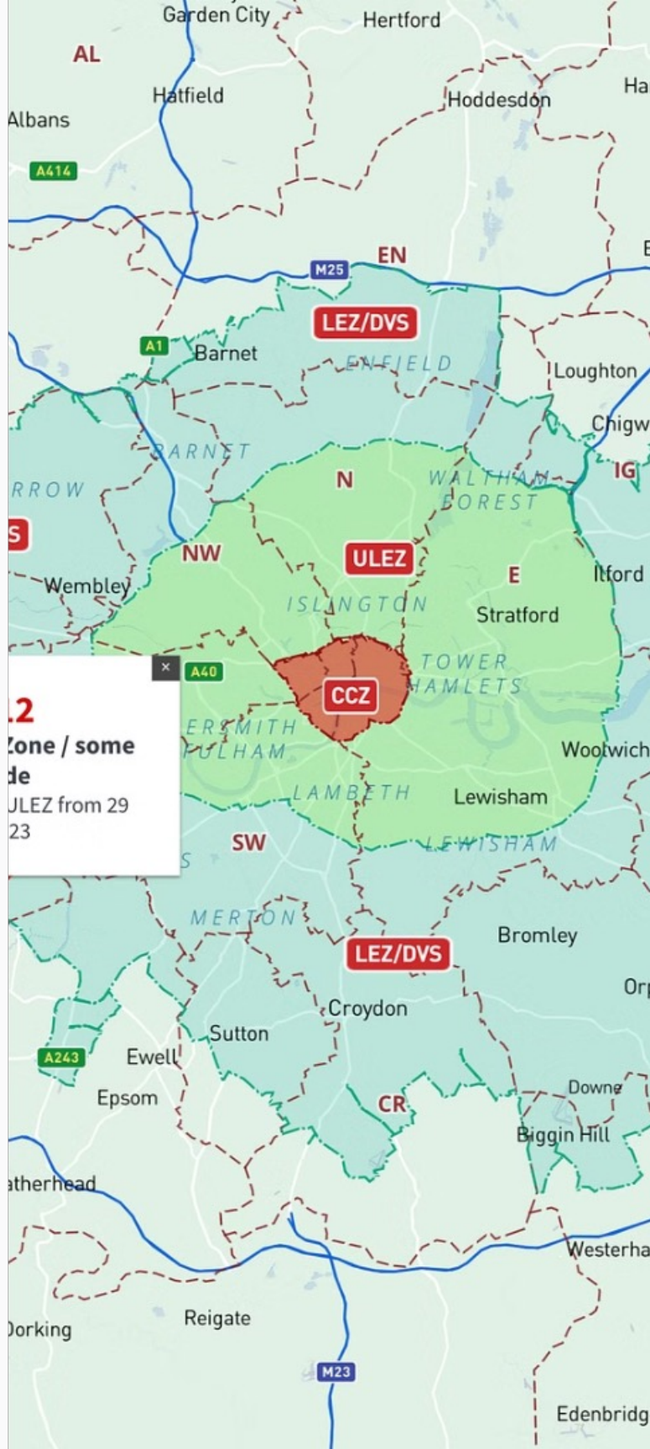
Insights and Findings (continued)

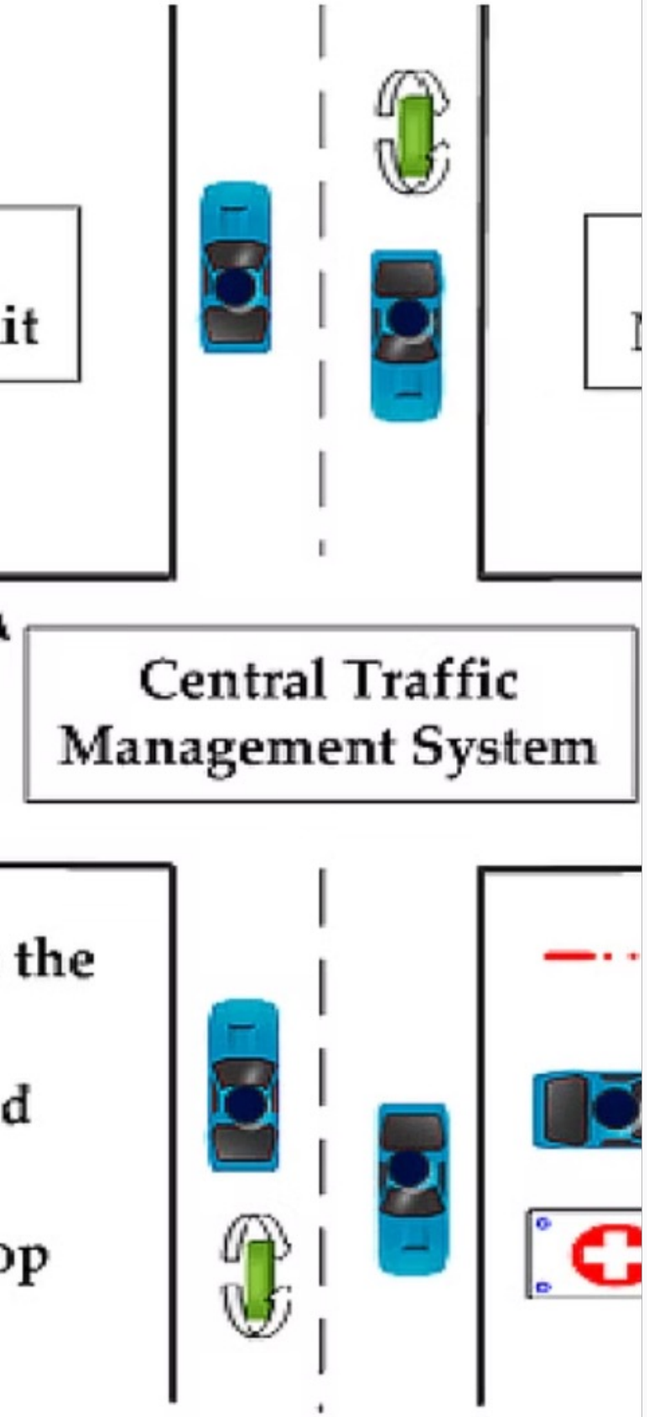
Average Speed by Location

The bar chart in the "Detailed Analysis" tab shows the average speed for each city, with Jaipur having the highest average speed and Kolkata having the lowest.

Congestion Hotspots

The Leaflet map in the "Congestion Hotspots" tab displays the congestion levels at different locations, with high congestion areas highlighted in red, medium in orange, and low in green.





Recommendations

1

Targeted Strategies

Implement targeted traffic management strategies in high congestion areas, such as New Delhi and Bangalore, to improve traffic flow and reduce vehicle delays.

2

Address Low Speeds

Investigate the factors contributing to the lower average speeds in cities like Kolkata and Hyderabad, and develop infrastructure or policy interventions to address these issues.

3

Expand Monitoring

Expand the deployment of real-time traffic monitoring and data collection systems to improve the accuracy and timeliness of the information displayed on the dashboard.

Recommendations (continued)

Integrate Data Sources

Integrate the dashboard with other transportation data sources, such as public transit schedules and availability, to provide a more comprehensive view of the transportation ecosystem.

Conclusion

The Traffic Management Dashboard provides a comprehensive and user-friendly platform for analyzing and visualizing traffic data in India. By leveraging the insights and recommendations from this dashboard, traffic management authorities and urban planners can make informed decisions to improve transportation infrastructure and reduce congestion, ultimately enhancing the quality of life for citizens.