Time Traffic Analysis Dashboard – Documentation

1. Project Title

Time Traffic Analysis Dashboard

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2. Overview

This dashboard provides a comprehensive analysis of traffic anomalies over time.

It helps identify congestion levels, speed variations, anomaly distribution, and location-based traffic behavior.

The goal is to support decision-making by giving clear insights into how traffic patterns change throughout the day and across different locations.

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3. Data Sources

The dashboard is built using the following data fields :

EventID – Unique identifier for each traffic event

DetectedAt – Timestamp of the detected anomaly

AnomalyType – Category of traffic anomaly

(high_congestion, high_speed, minor_incident, volatile_traffic)

LocationName / LocationID – Name and ID of the traffic location

Latitude, Longitude – Coordinates used for mapping

MinSpeed, AvgSpeed, MaxSpeed – Speed-related metrics

MaxCongestion – Maximum congestion level

Severity – Severity level of each anomaly event

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4. Dashboard Sections & Visualizations

4.1 KPI Cards

Located at the top of the dashboard:

1. Total Anomalies

Shows the total number of detected anomaly events.

2. Avg Speed

Displays the average speed across all traffic events.

3. Max Congestion

Shows the maximum recorded congestion value.

Purpose:

Quick, high-level overview of traffic performance.

4.2 Line Chart – Count of EventID Over Time

Visual: Line chart showing anomaly event counts across Year → Quarter → Month → Day.

Breakdown by AnomalyType.

Purpose:

Shows how each type of anomaly changes over time, highlighting peak periods or decreasing trends.

4.3 Table – Severity Summary

This table summarizes:

Severity level

AnomalyType

Total anomalies

Count of EventID

Average speed for each anomaly type

Purpose:

Gives a structured, comparable view for different anomaly types and severity levels.

4.4 Map – Max Capacity by Location

Interactive map showing locations using Latitude, Longitude.

Displays MaxCapacity or anomalies per area.

Purpose:

Helps identify which areas experience the highest congestion or events geographically.

4.5 Area Chart – Speed Insights

This visualization shows:

Sum of MaxSpeed

Sum of MinSpeed

Sum of AvgSpeed

Sum of MaxCongestion

Severity and AnomalyType trends over time

Purpose:

To understand changes in speeds and congestion through the day across all anomaly types.

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5. Slicers (Filters)

The dashboard includes the following slicers:

DetectedAt (Date/Time)

AnomalyType

LocationName

Severity

Purpose of Slicers:

They allow the viewer to filter the report dynamically to analyze:

Specific time periods

Specific anomaly types

Specific locations

Specific severity levels

This makes the dashboard fully interactive and customizable.

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6. Problems & Anomalies Solved by the Dashboard

This dashboard helps identify and analyze:

High congestion areas and times

Speed anomalies (unusually high or low speeds)

Volatile traffic zones

Incident-prone locations

Severe vs. minor issues

Time ranges with the most traffic disturbances

This enables better traffic management decisions and improvements in road safety.

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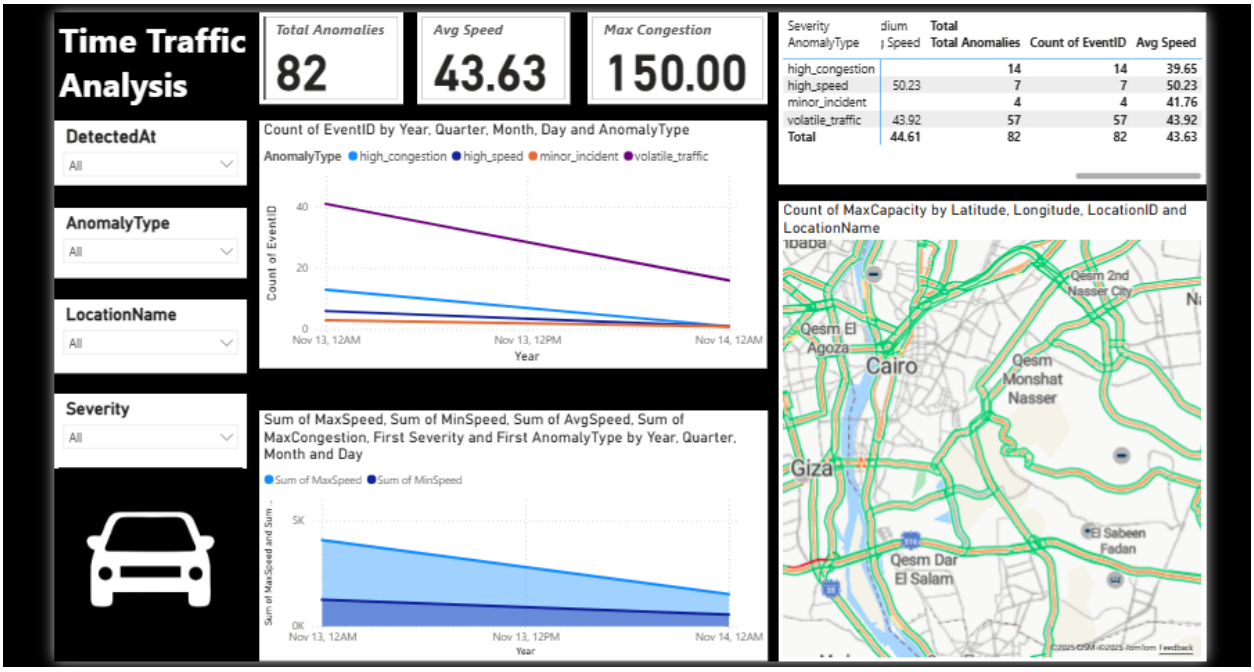
7. Dashboard Screenshot



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8. Conclusion

The Time Traffic Analysis Dashboard provides a clear and interactive way to monitor and understand traffic behavior.

It supports quick decision-making by breaking down anomalies, speeds, locations, and severity levels into easy-to-interpret insights.