Project: Austin Traffic Incident Analysis Dashboard

Objective: This dashboard provides a comprehensive analysis of real-time traffic incidents, visualizing key insights such as the types of incidents, geographic distribution, trends over time, and agency involvement. It offers interactive filtering to allow users to focus on specific areas of interest, such as incident type or status.

Source:
https://data.austintexas.gov/Transportation-and-Mobility/Real-Time-Traffic-Incident-Reports/dx9v-zd7x/about_data

Key Visualizations:

1. **Heatmap of Traffic Incidents by Location**:
    ○ A geographic heatmap that visualizes traffic incidents based on latitude and longitude, highlighting high-density areas where incidents frequently occur. This helps identify potential traffic hot spots in the city.
2. **Incidents by Type**:
    ○ A bar chart displaying the most common types of traffic incidents, helping users quickly see the predominant causes of traffic disruptions.
3. **Traffic Incidents Over Time**:
    ○ A line chart that tracks the number of traffic incidents over time, providing insights into whether incidents are increasing or decreasing, as well as identifying any seasonal patterns or trends.
4. **Agency Handling Traffic Incidents**:
    ○ A bar chart that breaks down the number of incidents handled by each agency, giving insight into which agencies are the most involved in managing traffic incidents.

Tools and Techniques:

- **Data Cleaning**: The raw data was cleaned using Python (pandas), where missing values were handled, and dates and text fields were standardized.
- **Visualization**: Tableau was used to create interactive visualizations, allowing users to filter by date, incident type, or status to focus on specific insights.
- **Analysis**: The dashboard offers actionable insights, such as identifying high-incident areas, understanding trends over time, and monitoring the resolution of traffic incidents.

Skills Demonstrated:

- Data Cleaning and Preparation
- Interactive Data Visualization
- Trend Analysis
- Geospatial Analysis (Heatmaps)
- Dashboard Design