Traffic Accident Analysis Dashboard

Title: " 🚦 City Traffic Accidents Analysis Dashboard "

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Project Overview

Purpose of the Report:
This dashboard analyzes Swiggy's order trends, revenue generation, and customer purchase patterns across different cities, cuisines, and payment modes, enabling data-driven decisions to improve delivery operations and strategic planning.

Dataset Summary

- **Source:** Traffic Accident Dataset
- **Number of Records**: 10,000+ accidents
- **Number of Features:** 15
- **Key Columns:** District Name, Neighborhood Name, Weekday, Month, Hour, Victims, Vehicles Involved, Latitude, Longitude
- **Preprocessing:** Verified date and time formats, ensured numerical columns for victims and vehicles, handled missing coordinates.

Objectives

✅ Track total orders and revenue generation across cities and cuisines.
✅ Identify peak ordering times to optimize delivery resources.
✅ Analyze payment mode preferences for business strategy.
✅ Understand order value distributions and discount impacts.

Key KPIs

✅ **Total Accidents:** Count of reported accidents.
✅ **Total Victims:** Total number of individuals impacted.
✅ **Total Vehicles Involved:** Sum of vehicles in accidents.
✅ **Average Accidents per Day:** Calculated to identify risk periods.

Visuals Implemented

	Visual	**Purpose**
1.	Map	Show accidents geographically by district using latitude and longitude.
2.	Bar Chart	Display accidents by part of the day for pattern detection.
3.	Bar Chart	Compare accident frequency by weekday.
4.	Line Chart	Visualize accident trends by hour across a day.
5.	Scatter Plot	Analyze victims vs vehicles involved for severity analysis.
6.	Bar Chart	Highlight top 10 streets with the highest accident rates.

Filters and Interactivity

- ✅ District filter for localized analysis.
- ✅ Month filter to view seasonal accident trends.
- ✅ Part of the day filter to analyze specific periods.
- ✅ Interactivity across visuals to cross-filter and drill down for detailed insights.

Insights & Analysis

- ✅ Peak accident hours observed during morning and evening rush hours.
- ✅ Fridays and Mondays show higher accident frequencies.
- ✅ Specific districts and streets consistently report higher accidents.
- ✅ Most accidents involve 1-2 vehicles, with mild to moderate victim counts.

Recommendations

✅ Deploy additional traffic control during identified peak hours.
✅ Focus safety campaigns in districts with high accident rates.
✅ Investigate top accident-prone streets for structural or traffic flow improvements.
✅ Use seasonal trends to plan targeted interventions.

Learnings & Skills Applied

✅ Learned advanced Tableau visualization and dashboarding for geospatial data.
✅ Applied data cleaning, mapping, and calculated fields effectively.
✅ Designed interactive dashboards with slicers and filters for dynamic exploration.
✅ Strengthened pattern recognition and analytical storytelling through visualization.