Road Accident Analyis

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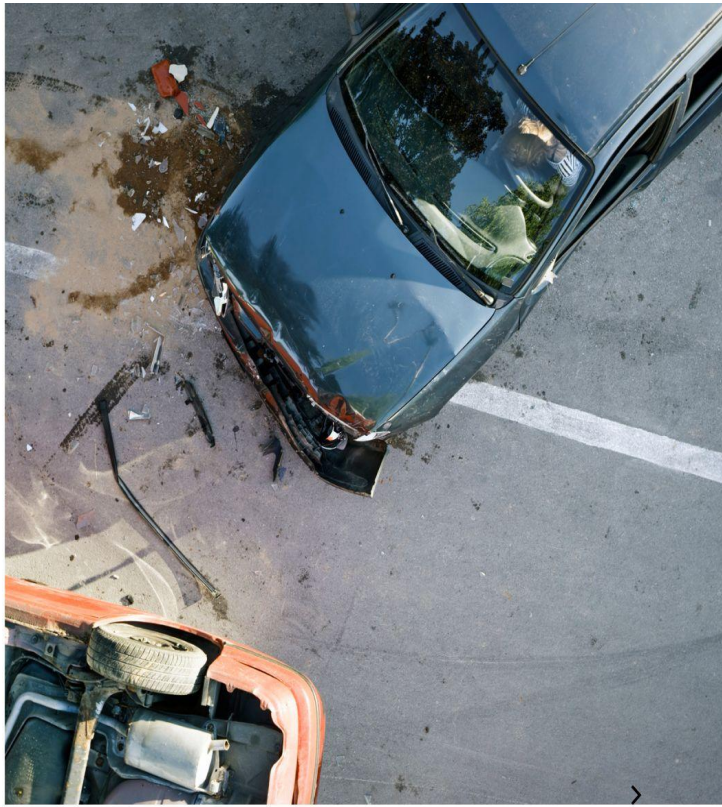
Problem Statement

Road traffic accidents are a serious public safety issue, resulting in injuries, deaths, and economic losses. Even with various efforts to enhance road safety, it remains difficult to understand the patterns and trends in these accidents, which is essential for policymakers and urban planners.

This project aims to analyze a dataset of road accidents to identify trends, patterns, and contributing factors. The analysis will focus on important variables such as accident severity, time of occurrence, environmental conditions, and road characteristics.



Methodology

- **Data sources**

1. SQL
2. AWS
3. Data Scraping
4. Local data sources

- **Data wrangling**

1. Data understanding
2. Data cleaning
3. Data merging and joining
4. Data manipulation

- **Data analysis**

1. Finding the trends and patterns

- **Data visualization**

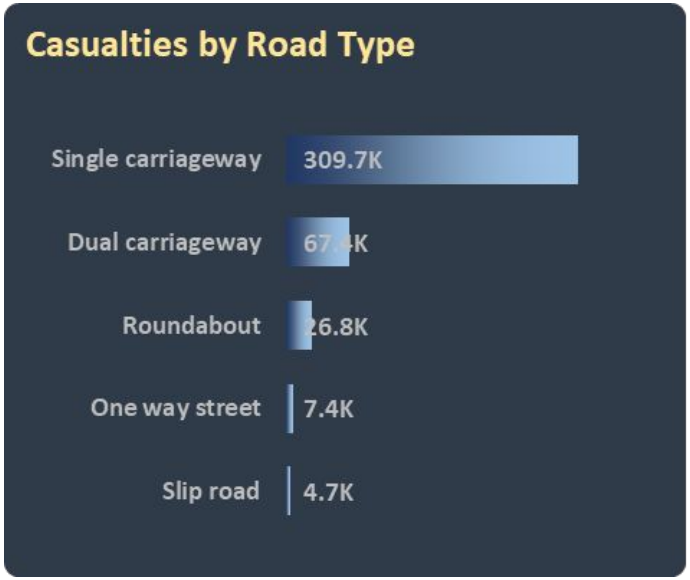
KPI’s (Key Performance Indicator)

Key Insights

- **Total Casualties**: **417,883** across all vehicle types.
- **Majority of Casualties**: The "Others" category has the highest count at **333,485** casualties.
- **Motorcycles**: **33,472** casualties indicate a significant risk associated with motorcycle use.
- **Cars**: Contribute **33,672** casualties, making them the second most involved vehicle type.
- **Vans and Buses**: **12,798** casualties for vans and **3,424** for buses show relatively lower involvement in accidents.
- **Agricultural Vehicles**: Report the fewest casualties at **1,032**.

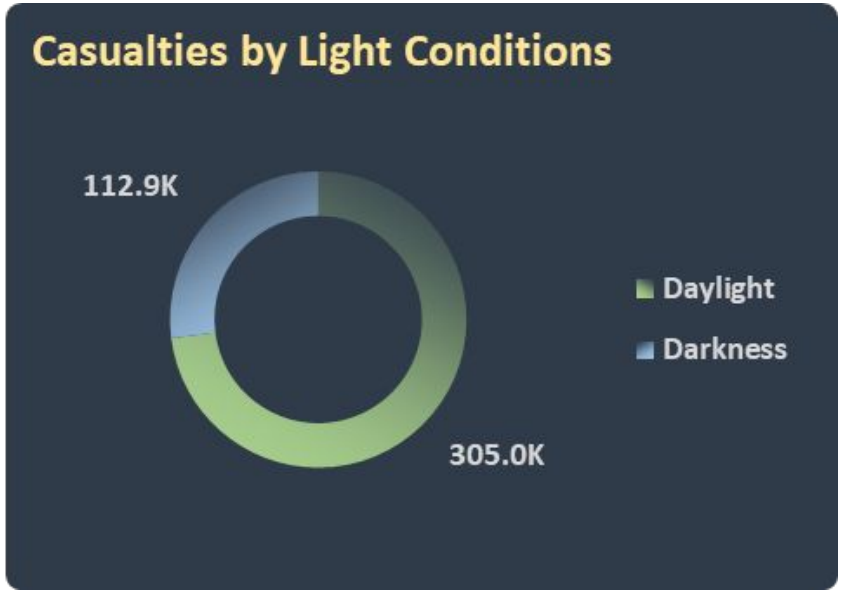
Recommended Analysis

Q1. Which road type has the highest number of casualties in road traffic accidents?



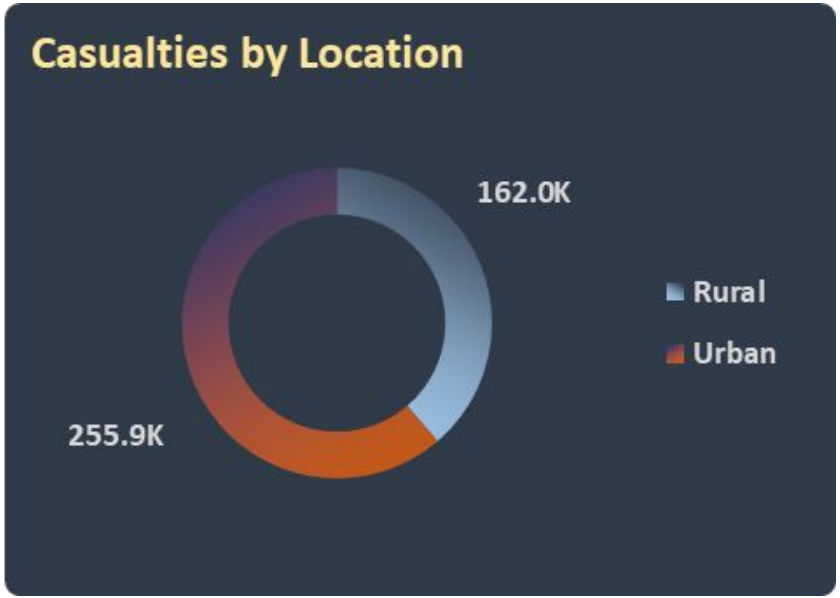
Recommended Analysis

Q2. What are the total casualties reported during daylight conditions?



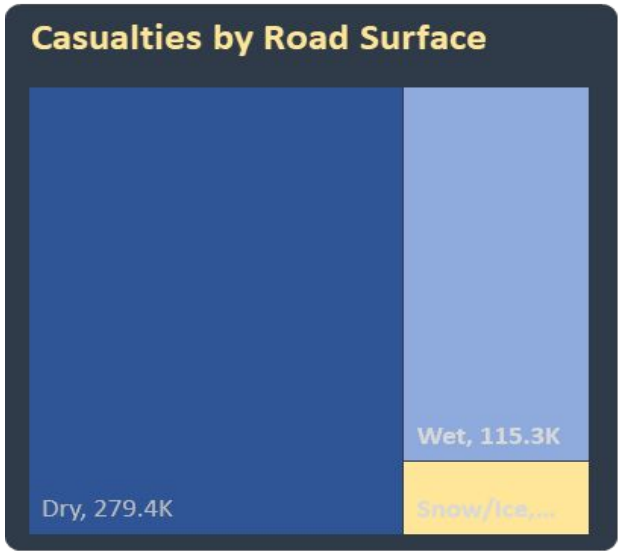
Recommended Analysis

Q3. What is the total number of casualties reported in urban areas?



Recommended Analysis

Q4. What is the total number of casualties reported on dry road surfaces?



Casualties on **dry road surfaces** total **279,400**, on **wet surfaces** total **115,300**, and on **snow/ice** conditions total **22,800**, highlighting varying risks associated with different road conditions.

Road Accident Dashboard

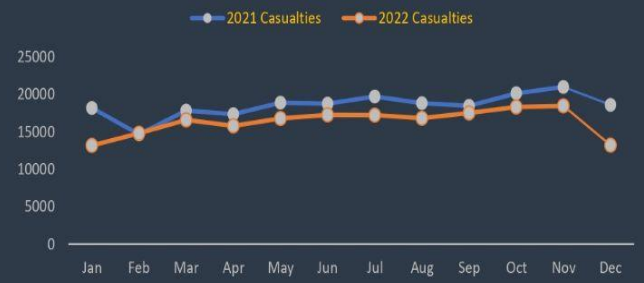
Total Casualties **417883**

Fatal Casualties	Serious Casualties	Slight Casualties	Cars Casualties
7135	59312	351436	33672
1.71%	14.19%	84.10%	8.06%

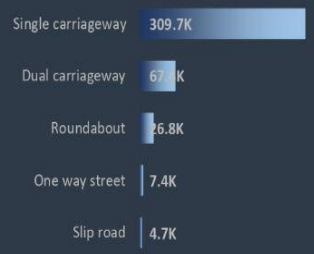
Total Casualties by Vehicle

	33672
	12798
	3424
	33472
	1032
	333485

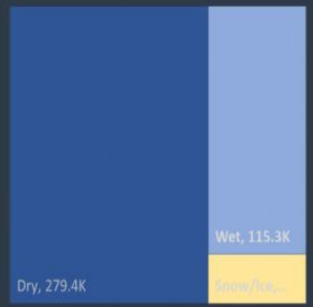
CY Casualties vs PY Casualties



Casualties by Road Type



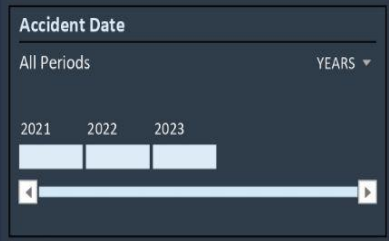
Casualties by Road Surface

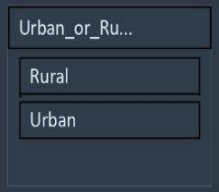


Casualties by Location

Casualties by Light Conditions

Filter Panel





Conclusion

The analysis of road accident data shows that there were **417,883** total casualties, with notable differences across various factors:

- **Vehicle Type**: The "Others" category leads with **333,485** casualties, indicating a need for targeted safety measures.
- **Road Surface Conditions**: Most casualties occur on **dry surfaces** (**279,400**), followed by **wet** (**115,300**) and **snow/ice** conditions (**22,800**), highlighting risks even in optimal conditions.
- **Light Conditions**: Casualties during **daylight** (**305,000**) far exceed those in **darkness** (**112,900**), emphasizing the role of visibility.
- **Geographical Location**: **Urban areas** account for **255,860** casualties, significantly more than **rural areas** (**162,020**), suggesting the need for improved safety measures in cities.

thanks!