

Road Accident Dashboard Project

Project Overview

This project focuses on creating and analyzing a dashboard that visualizes road accident statistics. The purpose of the dashboard is to help identify key metrics and trends in road accidents, such as total casualties, breakdown by vehicle type, road surface conditions, and accident distribution by day and month. The dashboard provides stakeholders with a comprehensive view of how road accidents are influenced by various factors.

Objectives

- Visualize Road Accident Data: Create a dashboard to display crucial accident metrics such as total casualties, severity (fatal, serious, slight), and breakdown by vehicle type and road conditions.
- Analyze Patterns: Identify patterns in road accidents by examining the time, road surface, light conditions, and accident type.
- Assist Decision Making: Provide insights to help reduce road accidents by highlighting high-risk conditions and areas.

Data Source

The dataset used includes:

- Casualties by type: Fatal, Serious, Slight
- Vehicle type: Car, Bicycle, Motorcycle, Bus, Tractor, etc.
- Road conditions: Dry, Wet, Snow, etc.
- Time-based data: Days of the week, Months, Light conditions (Daylight, Dark), Road type
- Geographic data: Casualties by area (Urban, Rural)

Tools Used

- Data Visualization Tool: Tableau
- Data Processing Tools: SQL or Excel for data cleaning and preparation

Key Metrics Visualized in the Dashboard

1. Total Casualties: 417,883 total casualties categorized by severity: Fatal (7,135), Serious (59,312), Slight (351,436).
2. Vehicle Type Casualties: Breakdown by vehicle type, with cars accounting for 333,485 casualties.
3. Trend Analysis: A monthly trend comparison of casualties in 2021 vs. 2022.
4. Casualties by Road Type: Most accidents occur on single carriageways.
5. Casualties by Road Surface Condition: Road surface conditions are predominantly dry.
6. Casualties by Area: Higher accidents in urban areas.
7. Casualties by Light Conditions: Majority of accidents occur in daylight.
8. Casualties by Day of the Week: Accidents are distributed across the week, with some days having higher occurrences.

Insights and Analysis

- Cars are the most involved vehicles in accidents, suggesting targeted interventions for car drivers.
- Most accidents occur in daylight, indicating other factors like traffic volume may play a role.
- Casualties on weekends or weekdays can highlight specific traffic behaviors leading to accidents.
- Single carriageways and dry road surfaces are common in accidents, indicating the need for road safety improvements.

Recommendations

- Target car drivers with safety campaigns to reduce road casualties.
- Implement road safety measures on single carriageways.

- Investigate causes of daylight accidents and introduce traffic control measures.

Future Work

- Implement predictive analytics to anticipate accident hotspots.
- Conduct geospatial analysis to map accident-prone areas.
- Dive deeper into vehicle-specific factors influencing accidents.

Conclusion

This project provides a thorough analysis of road accident data, revealing trends and offering actionable insights for reducing road casualties and improving road safety.