Road Accident Analysis

**Road Accident Dashboard**

**Objective:**  
This dashboard provides an in-depth analysis of road accident data, offering actionable insights into accident trends, vehicle involvement, and road conditions to support road safety initiatives and policymaking.

**Key Highlights:**

1. **Casualty Metrics:**
   * **Total Casualties:** 417,883
   * Breakdown:
     + **Fatal Casualties:** 7,135 (1.7%)
     + **Serious Casualties:** 59,312 (14.2%)
     + **Slight Casualties:** 351,436 (84.1%)
2. **Vehicle Type Involvement:**
   * Cars account for the majority of casualties (**333,485**, 79.8%).
   * Other vehicles include motorcycles (**33,672**), trucks (**33,472**), and buses (**12,798**).
3. **Accident Trends:**
   * **Monthly Trends:** A year-on-year comparison of casualties for 2021 and 2022 shows relatively consistent trends, with minor seasonal fluctuations.
   * **Casualties by Location:** Rural areas contribute to **162,000 casualties**, compared to urban areas.
4. **Road and Environmental Factors:**
   * **By Road Type:** Most casualties occur on **single carriageways (309.7k)**, followed by dual carriageways and roundabouts.
   * **By Road Surface:** **Dry roads** account for the majority of accidents (**279,445**), while wet or snowy roads contribute significantly (**115,261**).
   * **By Light Conditions:** Accidents predominantly happen in daylight (**305,000**), with a smaller fraction occurring in the dark.
5. **Filters for Granular Analysis:**
   * Users can analyze data by **accident date, road type, light conditions, and location (rural/urban)**.

**Actionable Recommendations:**

1. **Road Safety Measures:**
   * Implement stricter safety regulations for **cars** as they contribute to the majority of casualties.
   * Enhance infrastructure on **single carriageways** to reduce accident risk.
2. **Policy Improvements:**
   * Focus on rural road safety through campaigns and improved traffic management systems.
   * Address accidents during wet road conditions by improving drainage systems and warning systems.
3. **Public Awareness:**
   * Conduct targeted awareness campaigns about road safety during high-casualty months.
   * Promote the use of safety features like reflective signs during night driving.
4. **Technological Interventions:**
   * Leverage advanced monitoring systems for rural areas and high-risk roads.
   * Integrate weather-based alerts to notify drivers about hazardous road conditions.

**Conclusion:**  
This dashboard serves as a vital tool for understanding accident patterns and driving data-driven strategies to improve road safety. By addressing key problem areas identified in the analysis, policymakers and stakeholders can reduce casualties and enhance overall traffic safety.