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Career Foundry Project 6

Sourcing Open Data

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**UK ROAD SAFETY: TRAFFIC ACCIDENTS & VEHICLES DATA SET**

**Source**: The dataset originates from the Open Data website of the UK government, specifically published by the Department of Transport.

**Collection**: The data is collected from reported traffic accidents across the UK. It comprises two CSV files: Accident\_Information.csv and Vehicle\_Information.csv.

The former contains information on unique traffic accidents, while the latter contains details about vehicles involved in those accidents. Both datasets span different date ranges, providing a comprehensive view of accidents from 2005 to 2017 for accidents and 2004 to 2016 for vehicle information.

**Contents:**

Accident\_Information.csv: This file contains data on individual traffic accidents, identified by the unique column "Accident Index." It includes various properties related to the accidents, such as geographical locations, weather conditions, vehicle manoeuvres, casualties, etc.

Vehicle\_Information.csv: This file pertains to the involvement of vehicles in accidents. It includes details about vehicles and passengers involved, providing a more detailed insight into the vehicles' characteristics and involvement in accidents.

**Limitations:**

Temporal Range: The dataset covers a specific period, limiting analysis to this timeframe.

Data Completeness: There might be missing or incomplete information in some records, affecting the overall analysis.

Scope of Data: While detailed, there might be additional variables or factors not included that could contribute to a more comprehensive understanding of traffic accidents.

**Ethics and Relevance**:

Ethical Considerations: Handling sensitive information about accidents and casualties requires ethical considerations to ensure respectful and responsible usage.

Relevance: The dataset holds significant relevance for various purposes, such as traffic safety research, policymaking, urban planning, and predictive analysis to prevent accidents.

Understanding and utilizing such data must be done ethically and responsibly, ensuring privacy and respect for the individuals involved in these accidents.

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| --- | --- | --- | --- | --- | --- |
| Variable | Description | Time variant/Invariant | Structured/Unstructured | Quantitative/Qualitative | Nominal/Ordinal  /Discrete/Continuo  us |
| Accident  Index | Unique identifier for each traffic accident | Invariant | Structured | Qualitative | Nominal |
| Accident  Severity | Level of severity of the accident | Invariant | Structured | Qualitative | Ordinal |
| Carriage way hazards | Hazards present on the road surface | Invariant | Structured | Qualitative | Nominal |
| Junction Detail | Specific detail about the junction where the accident occurred | Invariant | Structured | Qualitative | Nominal |
| Road Conditions | Condition of the road surface during the accident | Invariant | Structured | Qualitative | Nominal |
| Special conditions  At site | Special conditions present at the accident site | Invariant | Structured | Qualitative | Nominal |
| Weather  conditions | Weather conditions during the time of the accident | Invariant | Structured | Qualitative | Nominal |
| Age band of driver | Age group or band of the driver involved in the accident | Invariant | Structured | Qualitative | Ordinal |
| Age of Vehicle | Age of the vehicle involved in the accident | Invariant | Structured | Qualitative | Continuous |
| Journey purpose of the driver | Purpose of the driver's journey at the time of the accident | Invariant | Structured | Qualitative | Nominal |
| Hit Object in / off carriageway | Object struck by the vehicle, either on or off the road | Invariant | Structured | Qualitative | Nominal |
| Junction Location | Location description of the junction where the accident occurred | Invariant | Structured | Qualitative | Nominal |
| Make / Model | Make and model of the vehicle involved in the accident | Invariant | Structured | Qualitative | Nominal |
| Skidding & overturning | Type of vehicle movement during the accident | Invariant | Structured | Qualitative | Nominal |
| Towing &Articulation | Details about towing or articulation of vehicles involved in the accident | Invariant | Structured | Qualitative | Nominal |
| Vehicle leaving Carriageway | Circumstances when the vehicle left the carriageway | Invariant | Structured | Qualitative | Nominal |
| Vehicle Manoeuvre | Action or manoeuvre performed by the vehicle | Invariant | Structured | Qualitative | Nominal |
| Vehicle type | Type or category of the vehicle involved in the accident | Invariant | Structured | Qualitative | Nominal |
| Was vehicle left hand drive | Whether the vehicle was left-hand drive | Invariant | Structured | Qualitative | Nominal |
| 1st point of impact | Location of the first point of impact on the vehicle | Invariant | Structured | Qualitative | Nominal |
| Year | Year in which the accident occurred | Variant | Structured | Quantitative | Discrete |

**Questions to Explore:**

* What are the most common types of traffic accidents, and have certain types shown a consistent increase or decrease over the years?
* Can we determine which vehicle types are most involved in accidents? Are there specific vehicle makes or models associated with higher accident frequencies?
* Is there a correlation between the time of day or specific days of the week and the likelihood of accidents?
* What is the distribution of accidents across different regions in the UK, and can we identify regions with notably higher or lower accident rates?
* What are the primary contributing factors to traffic accidents? (weather conditions, weekdays, rush-hours, traffic, manoeuvre)
* Can historical data be used to identify long- term trends and make predictions about future accident rates?
* What are the age and gender of the driver who cause an accident?
* What is the trend in the fatal accident over the years increasing or decreasing?