Road Accident Analysis Dashboard (Excel Interactive Dashboard)

Project Description:

I designed an interactive **Road Accident Dashboard** using Microsoft Excel to provide key insights into accident trends, casualty severity, and influencing factors.
The dashboard enables dynamic filtering based on **accident date**, **speed limits**, **urban/rural areas**, and **vehicle count**, offering a comprehensive view for stakeholders aiming to improve road safety measures.
Key visualizations include time-series trends, vehicle type breakdowns, road type impacts, and comparisons between rural and urban incidents.

About Dataset:

Column	Description
Accident_Index	Unique ID for each accident case.
Accident Date	Date on which the accident occurred.
Month	Month of the accident.
Year	Year when the accident took place.
Day_of_Week	Day of the week on which the accident happened.
Junction_Control	Type of control at the junction (e.g., signals, give way).
Junction_Detail	Specific details about the junction layout.
Accident_Severity	Severity classification (Fatal, Serious, Slight).
Latitude	Latitude coordinate of the accident location.
Light_Conditions	Lighting conditions during the accident (daylight, darkness, etc.).
Local_Authority_(District)	Name of the district or local authority where the accident occurred.
Carriageway_Hazards	Hazards present on the carriageway at the time (if any).
Longitude	Longitude coordinate of the accident location.
Number_of_Casualties	Total number of casualties in the accident.
Number_of_Vehicles	Total number of vehicles involved.
Police_Force	Police force that recorded the accident.
Road_Surface_Conditions	Road condition at the time (dry, wet, icy, etc.).

Road_Type	Type of road where the accident occurred (e.g., single carriageway).
Speed_limit	Speed limit (in mph) at the accident location.
Time	Exact time when the accident took place.
Urban_or_Rural_Area	Whether the accident occurred in an urban or rural area.
Weather_Conditions	Weather during the accident (e.g., fine, raining).
Vehicle_Type	Type of vehicle involved in the accident.

Questions Addressed Through the Dashboard:

1. What is the total number of road casualties, and how are they distributed by severity (fatal, serious, slight)?
2. Which type of vehicle is involved in the highest number of accidents?
3. How have monthly casualty trends changed between 2021 and 2022?
4. Which types of roads witness the most accidents (e.g., single carriageway, dual carriageway, roundabouts)?
5. What is the distribution of casualties across different road surface conditions (dry, wet, snow/ice)?
6. Are road accidents more prevalent in rural areas or urban areas?
7. Is there a significant difference in casualties occurring during daylight versus dark hours?
8. How do speed limits and the number of vehicles involved correlate with accident severity? (via dynamic filters)

Skills Used:

- Microsoft Excel Advanced Functions
- Pivot Tables and Pivot Charts
- Slicers and Timeline Filters

- Data Cleaning and Transformation
- Dashboard Design and Layout Optimization
- Visual Storytelling with Data

Link to Dashboard