Road Accident Analysis Dashboard

Purpose of the Dashboard

This dashboard is created to **analyze and visualize road accident data** across different factors such as accident severity, vehicle type, road type, lighting condition, and area type (urban/rural). It helps in identifying patterns and supporting data-driven decision-making for road safety initiatives.

Step-by-Step Structure to Build the Dashboard

PART 1: Primary KPIs Section

What we are making:

Visual blocks with key performance indicators (KPIs) to give a quick summary.

🔧 **KPIs to Create:**

1. **Total Casualties**
2. **Fatal Casualties (Severe Deaths)**
3. **Serious Casualties (Critical Injuries)**
4. **Slight Casualties (Minor Injuries)**
5. **Casualties by Cars**

Visualizations:

- Use **number cards** (big bold values)
- Add **donut charts** (Data Labels ON, No Legends, % formatting)
- Insert **icons or shapes** to visually represent each KPI

PART 2: Secondary KPIs – Casualties by Vehicle Type

What we are making:

A summary of casualties grouped by type of vehicle.

🔗 **Vehicle Groups:**

- Cars
- Motorcycles
- Buses
- Trucks
- Tractors
- Others

Visualizations:

- Use **icon + label** combinations (SmartArt or manual shapes)
- Add small **number cards** below or beside each icon
- Use **shapes or images** of vehicle types from Excel Icons or Insert → Pictures

---

PART 3: CY vs PY Casualty Trend (Monthly)

What we are making:

A line chart comparing current year (CY) vs previous year (PY) month-wise data.

Visualizations:

- Use **Line Chart**
- X-axis: Month names (Jan to Dec)
- Y-axis: Casualty numbers
- Use two series: one for 2021, one for 2022
- Add **Data Labels and Legend**

PART 4: Casualties by Road Type

What we are making:

Compare accident counts across different road types.

Visualizations:

- Use **Horizontal Bar Chart**
- Categories: Single carriageway, Dual carriageway, Roundabout, One-way, Slip road, etc.
- Sort by descending order

PART 5: Casualties by Road Surface Condition

What we are making:

Show how many casualties occurred on dry, wet, or snow-covered roads.

Visualizations:

- Use **Tree Map** or **100% Stacked Bar**
- Categories: Dry, Wet, Snow/Ice

PART 6: Urban vs Rural Casualties

What we are making:

Compare how many accidents happened in Urban vs Rural areas.

Visualizations:

- Use **Donut Chart**
- Two categories: Urban, Rural
- Highlight with contrasting colors (e.g., brown vs light beige)

PART 7: Light Condition Analysis (Day vs Night)

What we are making:

Determine when most accidents happen — during daylight or darkness.

Visualizations:

- Use **Donut Chart**
- Categories: Daylight, Darkness
- Show both count and percentage

PART 8: Filter Panel

What we are making:

Interactive panel to filter data based on:

1. **Urban or Rural**
2. **Years (2021, 2022, 2023)**
3. **Day of Week (Mon–Sun)**

Visualizations:

- Use **Slicers** (Insert > Slicer from Pivot Table)
- Style them with custom colors matching your theme

PART 9: Linked Image Navigation

What we are making:

Clickable icons that navigate to the dataset or pivot pages.

How to do it:

1. Insert image or icon (Insert > Icons or Pictures)
2. Right-click > Link > Place in this Document > Select Sheet (e.g., Dataset)
3. Add a small hover effect using formatting

Data Setup Recommendation

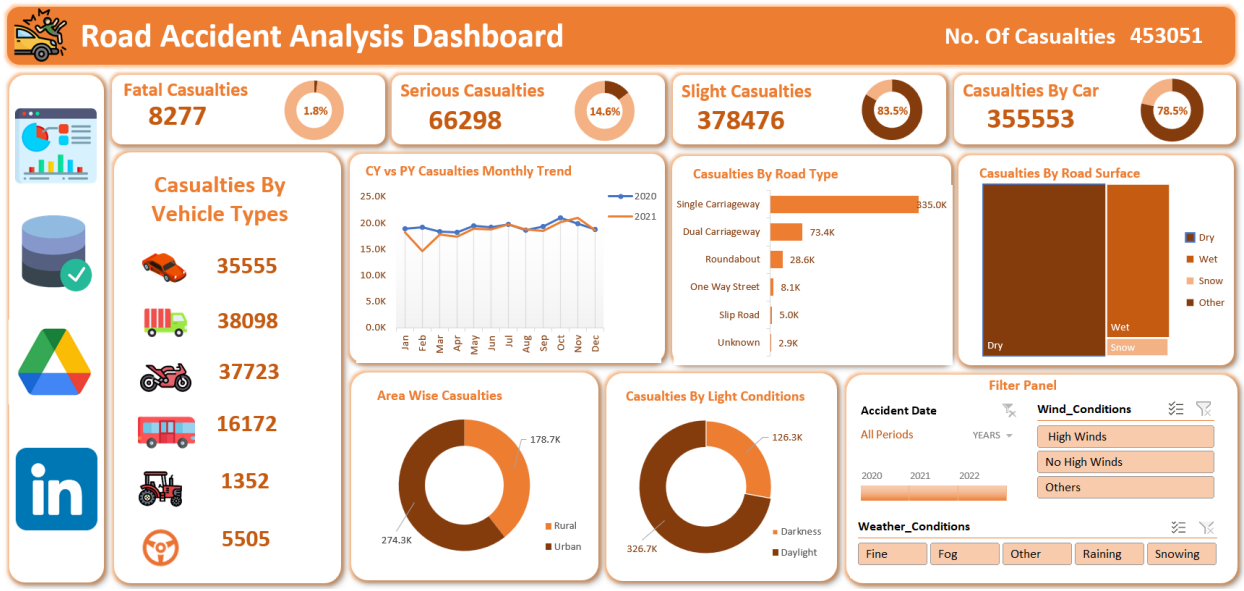
- Use **Pivot Tables** behind all visuals
- Store raw data in one clean sheet (RoadAccidentData)
- Name your ranges or use Excel Tables
- Use helper columns (e.g., Year, Month, Light, Road Type Group) for better analysis

---

Tools & Features Used

Feature	Use Case
Pivot Tables	Aggregating accident data
Pivot Charts	Creating dynamic visuals
Donut Charts	For % comparison
Line Charts	Time-series (month) analysis
Bar Charts	Category-wise comparisons
Slicers	Interactive filtering
Shapes/Icons	Visual storytelling & linking
Conditional Formatting	For color indicators

Dashboard



Primary KPIs

Sum of Number_of_Casualties
453051

Row Labels	Sum of Number_of_Casualties
Fatal	8277
Serious	66298
Slight	378476
Grand Total	**453051**

Secondary KPIs

Row Labels	Sum of Number_of_Casualties
Car	355553
Goods Van	38098
Bike	37723
Bus	16172
Other	5505
Grand Total	**453051**

Casualties By Area

Row Labels	Sum of Number_of_Casualties
Rural	178.7K
Urban	274.3K

Casualties By Road Type

Row Labels	Sum of Number_of_Casualties
Single Carriageway	335.0K
Dual Carriageway	73.4K
Roundabout	28.6K
One Way Street	8.1K
Slip Road	5.0K
Unknown	2.9K

Casualties By Light Condititons

Row Labels	Sum of Number_of_Casualties
Darkness	126.3K
Daylight	326.7K

CY vs PY Casualties Monthly Trend

Sum of Numb	Column Labels	
Row Labels	2020	2021
Jan	18.9K	18.2K
Feb	19.2K	14.6K
Mar	18.3K	17.8K
Apr	18.3K	17.3K
May	19.4K	18.9K
Jun	19.1K	18.7K
Jul	19.8K	19.7K
Aug	18.7K	18.8K
Sep	19.4K	18.5K
Oct	21.0K	20.1K
Nov	19.9K	21.0K
Dec	18.8K	18.6K

Casualties By Road Surface

Row Labels	Sum of Number_of_Casualties
Dry	298.4K
Wet	138.6K
Snow	15.6K
Other	0.5K