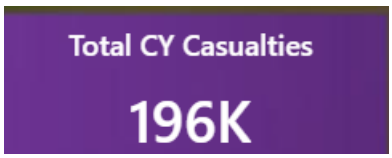
ROAD ACCIDENT REPORT SQL QUERIES

This document showcases the SQL queries performed to analyze road accident data and the corresponding Power BI dashboard outputs. The SQL results are included alongside the visuals to verify accuracy and demonstrate the process of validating dashboard insights using database queries.

1. **CY Casualties**

```sql
--CY Casualties --
SELECT SUM(number_of_casualties) AS CY_casualties
FROM road_accidents
WHERE EXTRACT(YEAR FROM accident_date) = 2022;
```

	cy_casualties bigint
1	195737



2. **CY Accidents**

```sql
--CY Accidents--
SELECT COUNT (DISTINCT accident_index) AS CY_Accidents
FROM road_accidents
WHERE EXTRACT(YEAR FROM accident_date) = 2022;
```

	cy_accidents bigint
1	144419

3. **CY Fatal Casualties**

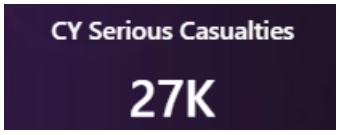
```sql
--CY Fatal Casualties--
SELECT SUM(number_of_casualties) AS CY_Fatal_Casualties
FROM road_accidents
WHERE EXTRACT(YEAR FROM accident_date) = 2022 AND accident_severity = 'Fatal';
```

	cy_fatal_casualties bigint
1	2855

4. CY Serious Casualties

```
--CY Serious Casualties--
SELECT SUM(number_of_casualties) AS CY_Serious_Casualties
FROM road_accidents
WHERE EXTRACT(YEAR FROM accident_date) = 2022 AND accident_severity = 'Serious';
```

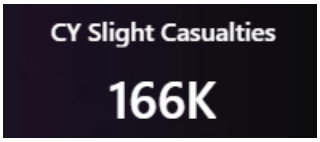
	cy_serious_casualties bigint
1	27045



5. CY Slight Casualties

```
--CY Slight Casualties--
SELECT SUM(number_of_casualties) AS CY_Slight_Casualties
FROM road_accidents
WHERE EXTRACT(YEAR FROM accident_date) = 2022 AND accident_severity = 'Slight';
```

	cy_slight_casualties bigint
1	165837



6. Casualties by Vehicle type

--Casualties by Vehicle type--

SELECT

CASE

WHEN vehicle_type IN ('Agricultural vehicle') THEN 'Agricultural'

WHEN vehicle_type IN ('Car','Taxi/Private hire car') THEN 'Cars'

WHEN vehicle_type IN ('Motorcycle 125cc and under','Motorcycle 50cc and under','Motorcycle over 125cc and up to 500cc','Motorcycle over 500cc','Pedal cycle') THEN 'Bike'

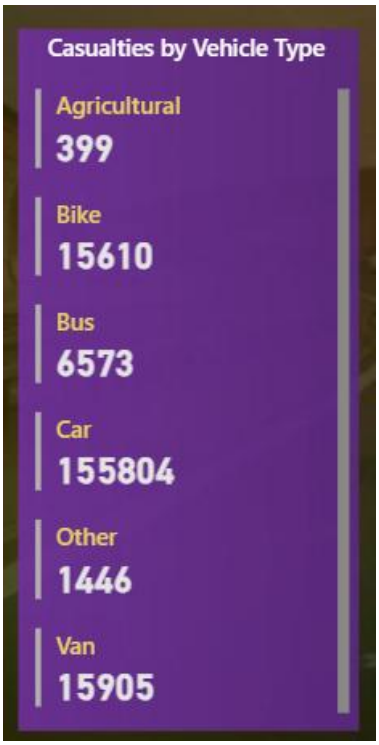
WHEN vehicle_type IN ('Bus or coach (17 or more pass seats)','Minibus (8 - 16 passenger seats)') THEN 'Bus'

WHEN vehicle_type IN ('Goods 7.5 tonnes mgw and over','Goods over 3.5t. and under 7.5t','Van / Goods 3.5 tonnes mgw or under') THEN 'Van'

ELSE 'Other'

```
        END As vehicle_group,
        SUM(number_of_Casualties) AS CY_Casualties
FROM road_accidents
WHERE EXTRACT(YEAR FROM accident_date) = 2022
GROUP BY
        CASE
                WHEN vehicle_type IN ('Agricultural vehicle') THEN 'Agricultural'
                WHEN vehicle_type IN ('Car','Taxi/Private hire car') THEN 'Cars'
                WHEN vehicle_type IN ('Motorcycle 125cc and under','Motorcycle 50cc and under','Motorcycle over 125cc and up to 500cc','Motorcycle over 500cc','Pedal cycle') THEN 'Bike'
                WHEN vehicle_type IN ('Bus or coach (17 or more pass seats)','Minibus (8 - 16 passenger seats)') THEN 'Bus'
                WHEN vehicle_type IN ('Goods 7.5 tonnes mgw and over','Goods over 3.5t. and under 7.5t','Van / Goods 3.5 tonnes mgw or under') THEN 'Van'
                ELSE 'Other'
        END
```

	vehicle_group text	cy_casualties bigint
1	Agricultural	399
2	Bike	15610
3	Bus	6573
4	Cars	155804
5	Other	1446
6	Van	15905



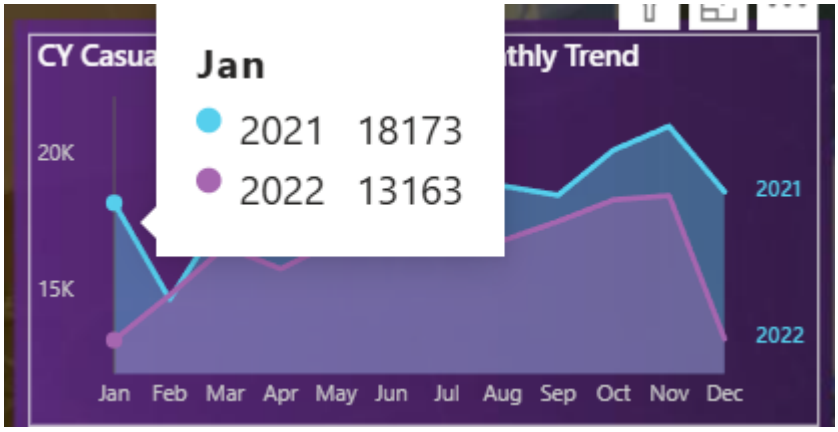
7. CY Casualties VS PY Casualties Monthly Trend

```
-- CY Casualties VS PY Casualties Monthly Trend --
SELECT
    TO_CHAR(accident_date, 'Mon') AS month_name,
    SUM(number_of_casualties) AS CY_casualties
FROM road_accidents
WHERE EXTRACT(YEAR FROM accident_date) = 2022
GROUP BY TO_CHAR(accident_date, 'Mon'),
         EXTRACT(MONTH FROM accident_date)
ORDER BY EXTRACT(MONTH FROM accident_date);
```

```
SELECT
    TO_CHAR(accident_date, 'Mon') AS month_name,
    SUM(number_of_casualties) AS PY_casualties
FROM road_accidents
WHERE EXTRACT(YEAR FROM accident_date) = 2021
GROUP BY TO_CHAR(accident_date, 'Mon'),
         EXTRACT(MONTH FROM accident_date)
ORDER BY EXTRACT(MONTH FROM accident_date);
```

	month_name text	cy_casualties bigint
1	Jan	13163
2	Feb	14804
3	Mar	16575
4	Apr	15767
5	May	16775
6	Jun	17230
7	Jul	17201
8	Aug	16796
9	Sep	17500
10	Oct	18287
11	Nov	18439
12	Dec	13200

	month_name text	py_casualties bigint
1	Jan	18173
2	Feb	14648
3	Mar	17815
4	Apr	17335
5	May	18852
6	Jun	18728
7	Jul	19682
8	Aug	18797
9	Sep	18456
10	Oct	20109
11	Nov	20975
12	Dec	18576



8. Casualties by Road Type

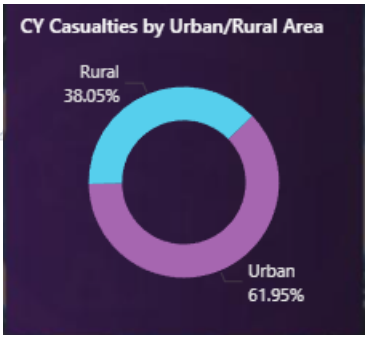
```sql
-- Casualties by Road Type --
SELECT road_type, SUM(number_of_casualties) AS CY_Casualties
FROM road_accidents
WHERE EXTRACT(YEAR FROM accident_date) = 2022
GROUP BY road_type
```

	road_type character varying (50)	cy_casualties bigint
1	Dual carriageway	31912
2	One way street	3499
3	Roundabout	12683
4	Single carriageway	144653
5	Slip road	2990

9. CY Casualties by Urban/Rural Area

```
--CY Casualties by Urban/Rural Area--
SELECT urban_or_rural_area, SUM(number_of_Casualties)* 100 /
(SELECT SUM(number_of_Casualties) FROM road_accidents WHERE EXTRACT(YEAR FROM accident_date) = 2022) As percentage
FROM road_accidents
WHERE EXTRACT(YEAR FROM accident_date) = 2022
GROUP BY urban_or_rural_area
```

	urban_or_rural_area character varying (20)	percentage bigint
1	Rural	38
2	Urban	61



10. Casualties by Light Condition

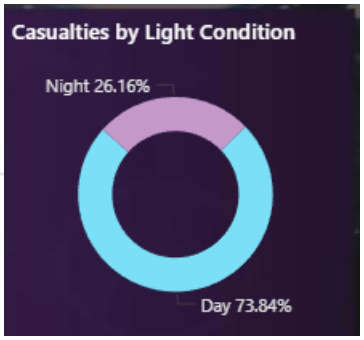
```
-- Casualties by Light Condition--
SELECT
    CASE
        WHEN light_conditions IN ('Daylight') THEN 'Day'
        WHEN light_conditions IN (
            'Darkness - lighting unknown',
            'Darkness - lights lit',
            'Darkness - lights unlit',
            'Darkness - no lighting'
        ) THEN 'Night'
    END AS light_condition,

    ROUND(
        (SUM(number_of_casualties) * 100.0) /
        (
            SELECT SUM(number_of_casualties)
            FROM road_accidents
            WHERE EXTRACT(YEAR FROM accident_date) = 2022
        ),
        2
    ) AS cy_casualties_pct

FROM road_accidents
WHERE EXTRACT(YEAR FROM accident_date) = 2022

GROUP BY
    CASE
        WHEN light_conditions IN ('Daylight') THEN 'Day'
        WHEN light_conditions IN (
            'Darkness - lighting unknown',
            'Darkness - lights lit',
            'Darkness - lights unlit',
            'Darkness - no lighting'
        ) THEN 'Night'
    END;
```

	light_condition text	cy_casualties_pct numeric
1	Day	73.84
2	Night	26.16



11. Top 10 Location by No of Casualties

```
-- Top 10 Location by No of Casualties--
SELECT local_authority, SUM(number_of_Casualties) AS Total_Casualties
FROM road_accidents
GROUP BY local_authority
ORDER BY Total_Casualties DESC
LIMIT 10;
```

	local_authority character varying (100)	total_casualties bigint
1	Birmingham	8611
2	Leeds	5821
3	Bradford	4431
4	Manchester	4366
5	Liverpool	4052
6	Cornwall	3820
7	Sheffield	3737
8	Kirklees	3312
9	County Durham	3295
10	Westminster	3169