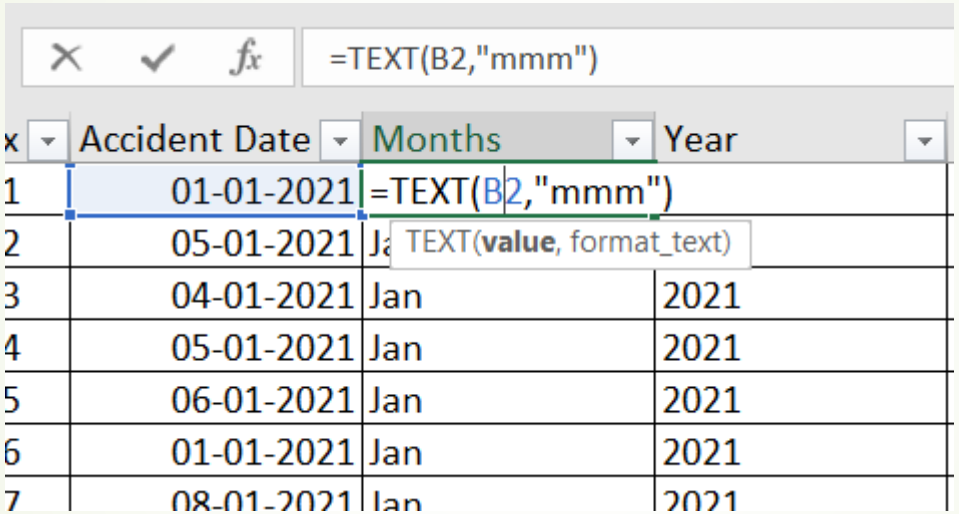
ROAD ACCIDENT ANALYSIS EXCEL

MADE BY: MOHAMMAD AMIL KHAN

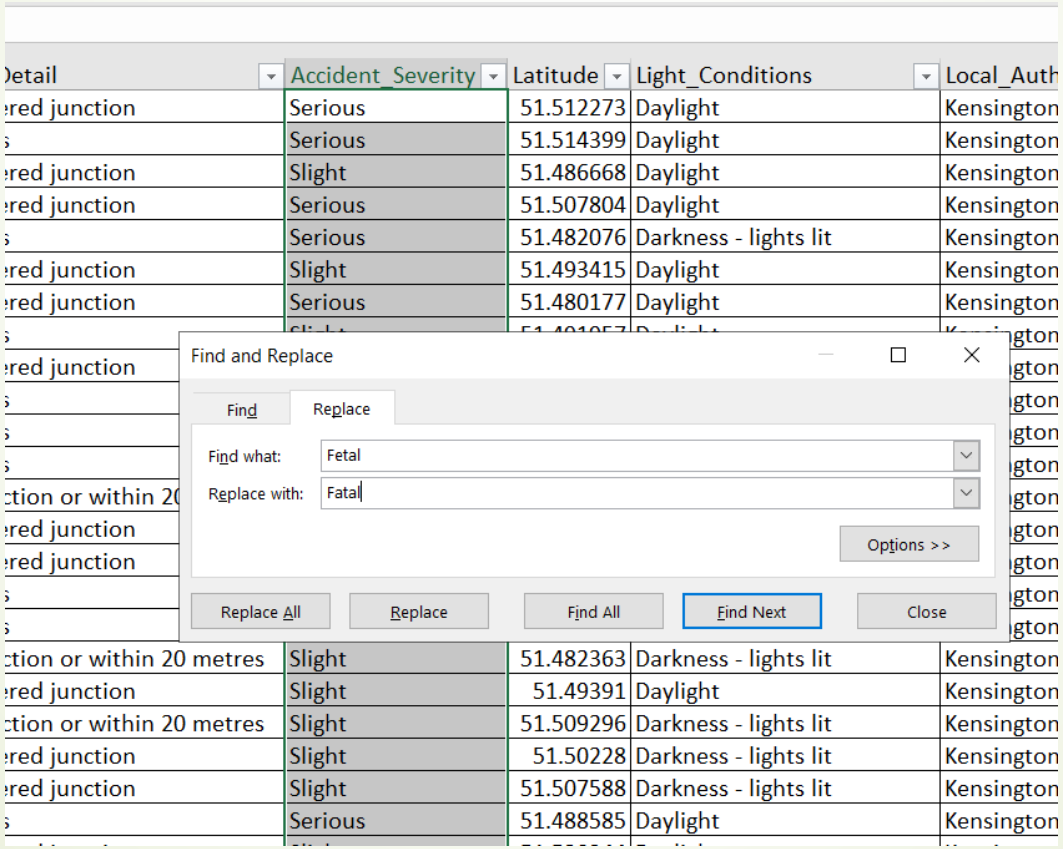
Data Cleaning & Preprocessing

- **Created "Month" and "Year" columns from the Accident_Date field using the TEXT function to enable time-based analysis.**



Data Cleaning & Preprocessing

- **Corrected a typographical error in the Accident_Severity column, where "Fetal" was mistakenly written instead of "Fatal," using the Find and Replace function.**



Detail	Accident_Severity	Latitude	Light_Conditions	Local_Auth
ered junction	Serious	51.512273	Daylight	Kensington
s	Serious	51.514399	Daylight	Kensington
ered junction	Slight	51.486668	Daylight	Kensington
ered junction	Serious	51.507804	Daylight	Kensington
s	Serious	51.482076	Darkness - lights lit	Kensington
ered junction	Slight	51.493415	Daylight	Kensington
ered junction	Serious	51.480177	Daylight	Kensington
s				gton
ered junction				gton
s				gton
s				gton
s				gton
ction or within 20				gton
ered junction				gton
ered junction				gton
s				gton
s				gton
ction or within 20 metres	Slight	51.482363	Darkness - lights lit	Kensington
ered junction	Slight	51.49391	Daylight	Kensington
ction or within 20 metres	Slight	51.509296	Darkness - lights lit	Kensington
ered junction	Slight	51.50228	Darkness - lights lit	Kensington
ered junction	Slight	51.507588	Darkness - lights lit	Kensington
s	Serious	51.488585	Daylight	Kensington

KPI

Determine the total number of casualties resulting from road accidents.

Sum of Number_of_	sum of number of casualties
417883	417883

KPI

- Analyze casualty distribution by accident severity and calculate the percentage of casualties within each severity category.

Row Labels	Sum of Number_of_Casualties
Fatal	7135
Serious	59312
Slight	351436
Grand Total	**417883**

Fatal Severity			Serious Severity			Slight Severity		
Fatal	7135	1.71%	Serious	59312	14.19%	Serious	351436	84.10%
other	417883	98.29%	other	417883	85.81%	other	417883	15.90%

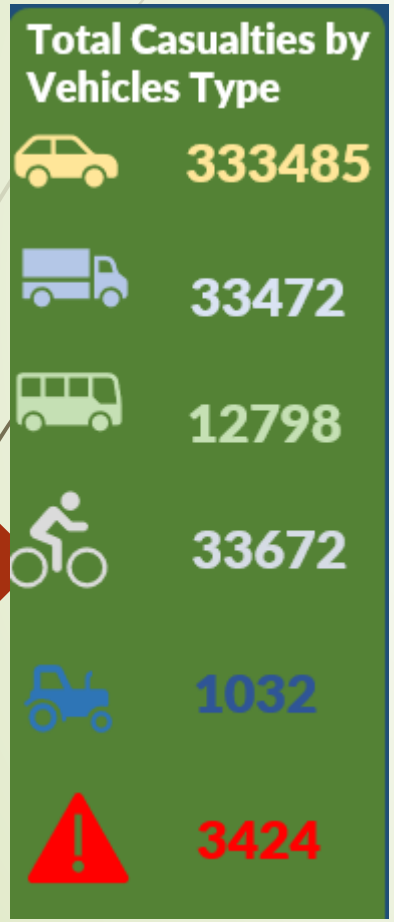
KPI

- Identify the vehicle type with the highest number of casualties and its overall contribution to the total.

Row Labels	Sum of Number_of_Casualties		Car Casulaties		
Agricultural vehicle	1032	1032	car	333485	79.80%
Cars	333485	333485	other	84398	20.20%
Bus	12798	12798			
Van	33472	33472			
Bike	33672	33672			
Other	3424	3424			
Grand Total	**417883**				

KPI

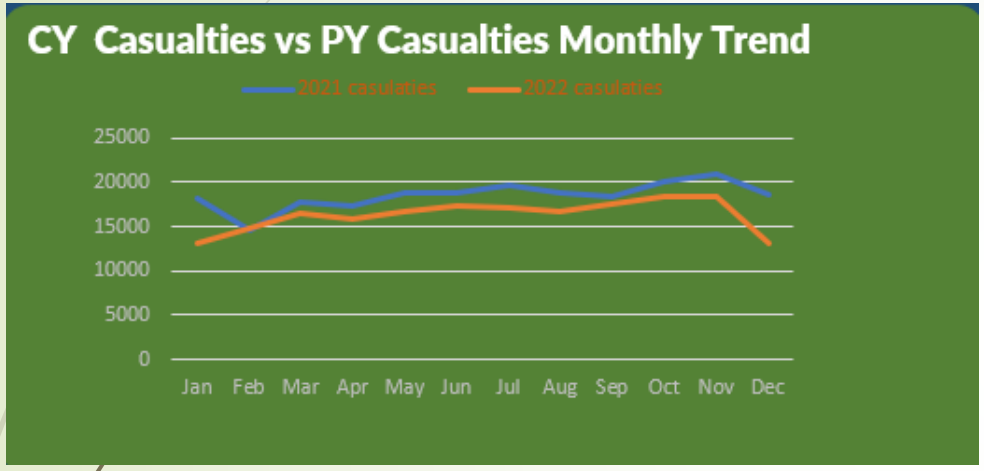
- Evaluate the total casualties for each vehicle type to understand risk distribution.



Row Labels	Sum of Number_of_Casualties
Agricultural vehicle	1032
Cars	333485
Bus	12798
Van	33472
Bike	33672
Other	3424
Grand Total	**417883**

Chart

- Analyze the monthly trend of casualties, comparing data from 2021 and 2022 to identify patterns or anomalies.



Year	2021

Row Labels	Sum of Number_of_Casualties
Jan	18173
Feb	14648
Mar	17815
Apr	17335
May	18852
Jun	18728
Jul	19682
Aug	18797
Sep	18456
Oct	20109
Nov	20975
Dec	18576
Grand Total	**222146**

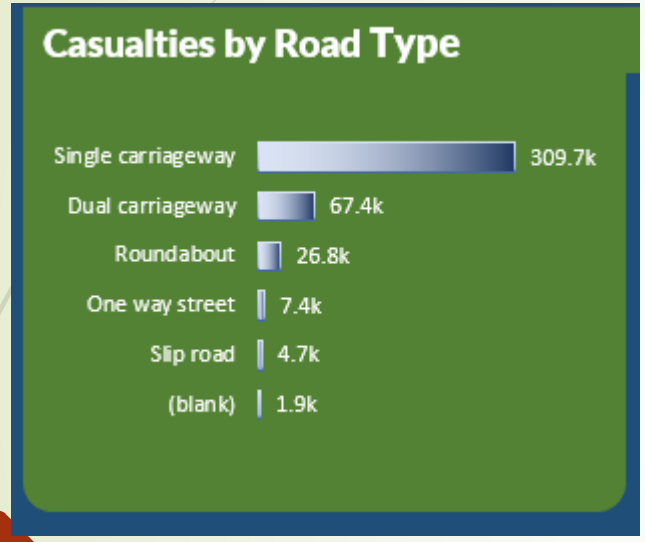
Year	2022

Row Labels	Sum of Number_of_Casualties
Jan	13163
Feb	14804
Mar	16575
Apr	15767
May	16775
Jun	17230
Jul	17201
Aug	16796
Sep	17500
Oct	18287
Nov	18439
Dec	13200
Grand Total	**195737**

Month	2021 casulaties	2022 casulaties
Jan	18173	13163
Feb	14648	14804
Mar	17815	16575
Apr	17335	15767
May	18852	16775
Jun	18728	17230
Jul	19682	17201
Aug	18797	16796
Sep	18456	17500
Oct	20109	18287
Nov	20975	18439
Dec	18576	13200

Chart

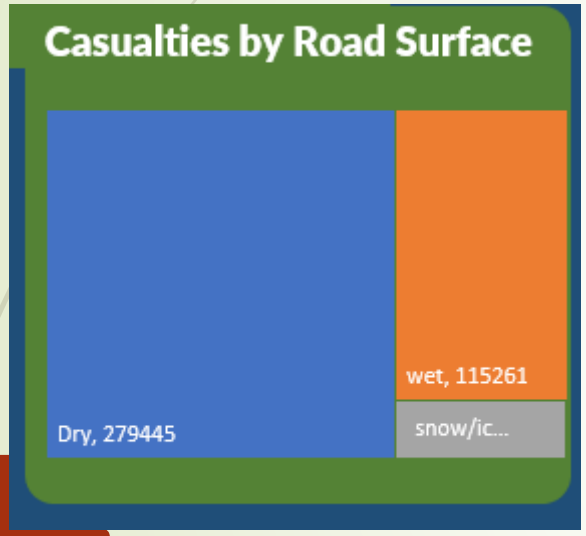
- Identify the road type with the highest number of casualties to assess infrastructure-related risks.



Row Labels	Sum of Number_of_Casualties
(blank)	1.9k
Slip road	4.7k
One way stree	7.4k
Roundabout	26.8k
Dual carriagew	67.4k
Single carriage	309.7k
Grand Total	**417883**

Chart

- Examine the distribution of casualties based on road surface conditions to understand environmental factors affecting accidents.

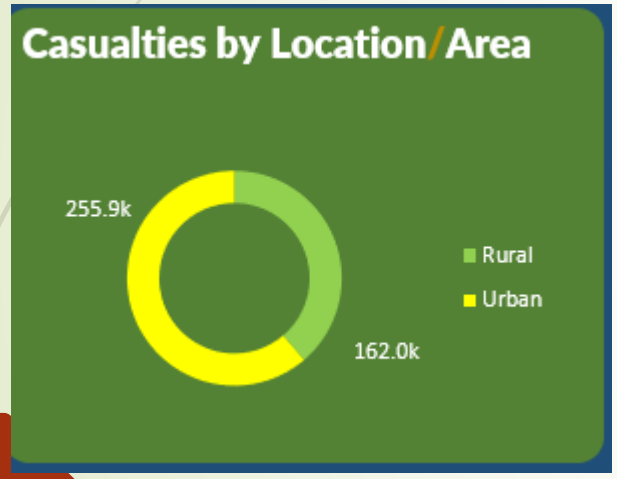


Row Labels	Sum of Number_of_Casualties
Dry	279445
(blank)	396
wet	115261
snow/ice	22781
Grand Total	**417883**

Road Surafce	No of Casualties
Dry	279445
(blank)	396
wet	115261
snow/ice	22781

Chart

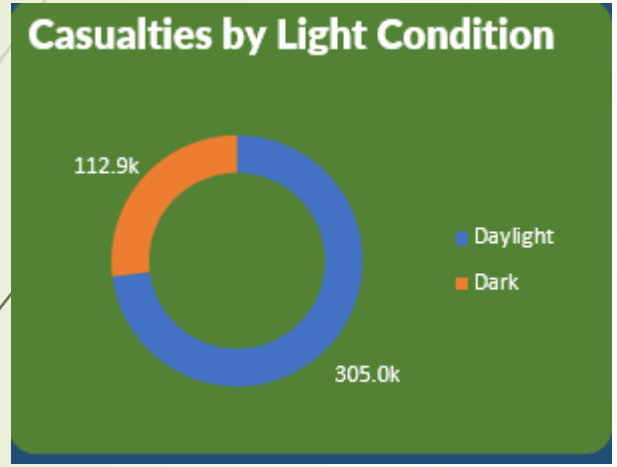
- Casualties by accident locations (urban/rural)



Row Labels	Sum of Number_of_Casualties
Rural	162.0k
Urban	255.9k
Grand Total	**417883**

Chart

- Casualties by accident light Condition (Daylight/Dark)



Row Labels	Sum of Number_of_Casualties
Daylight	305.0k
Dark	112.9k
Grand Total	**417883**

Key Findings & Recommendations

1. Casualty Reduction Trend: 2022 saw a decline in casualties, indicating better road safety measures.

2. Casualties by Severity: 84% were slight injuries, 14.19% serious, and 1.71% fatal—over 7,000 deaths still require attention.

3. Vehicle-Type Impact: Cars contribute to nearly 80% of casualties, requiring stricter safety enforcement.

4. Factors Behind 2022 Decline: Improved policies, reduced traffic in some months, and better vehicle safety.

5. Enhancing Road Safety: Stricter speed regulations, automated enforcement, and driver training programs.

6. High-Risk Time Periods: Target accident-prone months with seasonal campaigns and enforcement.

7. Improving Road Conditions: Better lighting, anti-skid surfaces, and drainage systems for safer roads.

8. Data-Driven Policy Making: Use AI, IoT, and real-time monitoring to predict and prevent accidents.

Conclusion

The data suggests a positive trend in casualty reduction in 2022, but inconsistencies in some months and high-risk vehicle types require targeted interventions. By focusing on enforcement, infrastructure improvements, and public awareness, further reductions in casualties can be achieved. A data-driven approach will ensure continuous improvements in road safety policies, making roads safer for all users.