

INTRODUCTION

Road accidents are a major public safety concern globally. Every year, thousands of lives are lost, and millions are injured due to various types of road mishaps. The objective of this project is to analyze road accident data using SQL to:

- Identify key factors contributing to accidents.
- Recognize patterns in accident occurrences.
- Understand the distribution of accidents by severity, location, time, and cause.
- Generate data-driven insights to support safety improvements and preventive measures.

Through descriptive statistics, advanced SQL queries, and visualization, this analysis aims to provide actionable findings that can help authorities, policy makers, and communities to reduce accident rates and enhance road safety.



PROBLEM STATEMENT SOLVED



DESCRIPTIVE ANALYSIS

Find total number of fatal accidents

```
SELECT COUNT(*) AS TOTAL_NUMBER_OF_FATAL_ACCIDENTS
FROM ROAD_ACCIDENTS
WHERE SEVERITY = 'Fatal';
Rectangular Snip
```

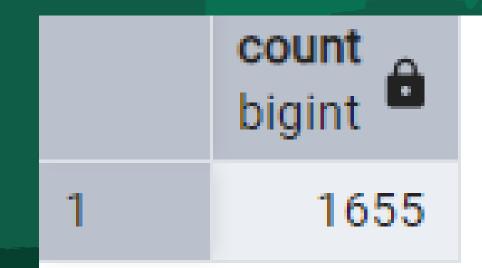


total_number_of_fatal_accidents bigint

1267

Count accidents happened in year 2024

```
SELECT COUNT(*) AS TOTAL_NUMBER_OF_FATAL_ACCIDENTS
FROM ROAD_ACCIDENTS
WHERE SEVERITY = 'Fatal';
```





--What is the total number of accidents, total casualties, and total vehicles involved BY SEVERITY

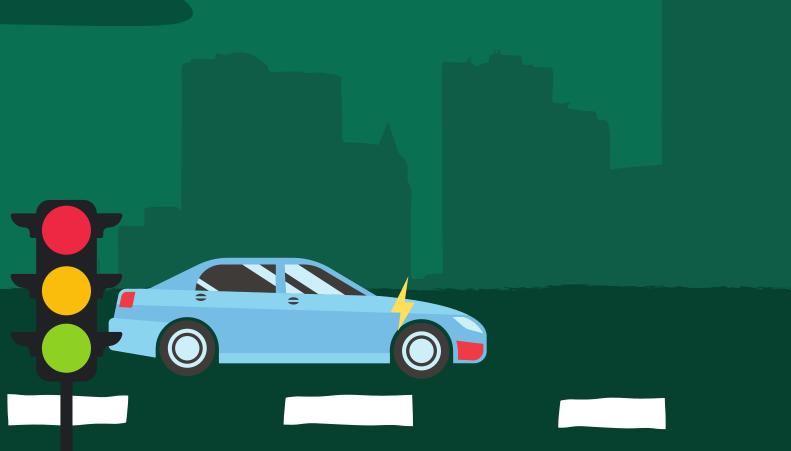
SELECT SEVERITY, COUNT(*) AS TOTAL_NUMBER_OF_ACCIDENTS, SUM(CASUALTIES)
SUM(VEHICLE_COUNT) AS TOTAL_VEHICLE_INVOLVED FROM ROAD_ACCIDENTS
GROUP BY SEVERITY;



severity text	total_number_of_accidents bigint	total_casualties bigint	total_vehicle_involved bigint
Major	1226	6081	3656
Severe	1236	6191	3619
Fatal	1267	6516	3793
Minor	1271	6312	3791

-- What is the percentage of accidents that are fatal, severe, and minor?

```
WITH total AS (SELECT COUNT(*) AS total_accidents FROM ROAD_ACCIDENTS)
SELECT
    severity,
    COUNT(*) AS accident_count,
    ROUND(100.0 * COUNT(*) / (SELECT total_accidents FROM total), 2)
AS percentage FROM ROAD_ACCIDENTS
GROUP BY severity;
```



	severity text	accident_count bigint	percentage numeric
1	Major	1226	24.52
2	Severe	1236	24.72
3	Fatal	1267	25.34
4	Minor	1271	25.42

--Find the weekday on which the most accidents occurred.

```
SELECT accident_id,
    CASE
    WHEN severity = 'Fatal' THEN 'High Risk'
    WHEN severity = 'Severe' THEN 'Medium Risk'
    ELSE 'Low Risk' END AS risk_level FROM ROAD_ACCIDENTS;
```

	accident_id [PK] integer	risk_level text
1	1	Low Risk
2	2	Low Risk
3	3	Low Risk
4	4	Medium Risk
3		[PK] integer 1 2

For each location, calculate running total of accidents (cumulative count)

SELECT location, COUNT(*) OVER(PARTITION BY location ORDER BY date

AS running_total

FROM ROAD_ACCIDENTS;



	location text	running_total bigint
1	Aaronburgh	1
2	Aaronburgh	2
3	Aaronburgh	3
4	Aaronfurt	1
5	Aarontown	1
б	Acevedohaven	1
7	Acostaport	1

Which reasons caused more than 100 accidents?

SELECT WEATHER, COUNT(*) AS total_accidents
FROM ROAD_ACCIDENTS
GROUP BY WEATHER
HAVING COUNT(*) > 100;

		weather text	total_accidents bigint
	1	Snowy	1031
	2	Foggy	1019
	3	Rainy	968
	4	Clear	958
	5	Stormy	1024

