

An illustration featuring a man with glasses and a backpack riding a bicycle on the left, and an orange car with a yellow lightning bolt on its side on the right. The background is a dark green cityscape with a large yellow sun and blue clouds in the upper left, and a red starburst in the upper right. A large white rectangle contains the main title and a quote.

ROAD ACCIDENT SQL ANALYSIS

“Environmentally Friendly Solutions
for the Future”

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

- *Fatal Accident Count*
- *Year-wise Accident Count (2024)*
- *Severity-wise Summary*
- *Severity Percentage Calculation*
- *Weekday Analysis*
- *Severity Classification (CASE Statement)*
- *Running Total using Window Function*
- *Reason-wise Accident Count*



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
1	1267

Count accidents happened in year 2024

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

	count bigint 
1	1655

--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

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
6	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

THANK YOU

