**QUESTIONS AND ANSWERS ON**

**Road Safety Analysis**

**1. What is the total number of accidents recorded in the dataset?**

SELECT COUNT(\*) AS TotalAccidents FROM accidents;

**2.What is the average age of drivers involved in accidents?**

select Avg(Age) as Avrg\_age\_of\_drivers from drivers;

**3.Find the total number of accidents that occurred in each region?**

SELECT Region,COUNT(\*) AS TotalAccidents FROM locations

group by Region;

**4.What is the maximum and minimum number of years of experience among the drivers involved in accidents?**

select min(ExperienceYears) as MinExperience,max(ExperienceYears) as MaxExperience from drivers;

**5.Calculate the total number of vehicles involved in accidents?**

select count(VehicleID) as TotalVehiclesInvolved from accidentdetails;

**6.Rank the locations by the number of accidents in descending order?**

select LocationName, COUNT(\*) AS AccidentCount,

rank() over(order by COUNT(\*)) as NO\_of\_accidents

from accidents A

join locations on locations.LocationID=A.LocationID

group by LocationName;

**7.Find the cumulative count of accidents by date?**

SELECT AccidentDate,count(\*) AS Count\_Acidents,

Sum(count(\*)) over(order by AccidentDate) as CummulativeSum from accidents

group by AccidentDate;

**8.List each driver's experience years along with the difference from the average experience?**

select DriverID,Name,ExperienceYears,

ExperienceYears-avg(ExperienceYears) over() as driver\_avg

from drivers;

**9.Create a view to display the details of accidents including location names?**

create view accdientsinc as

select A.AccidentID, A.AccidentDate, L.LocationName, A.Severity, A.WeatherConditions, A.RoadSurface

from accidents A join locations L on A.LocationID=L.LocationID;

**select \* from accdientsinc;**

**10.Use the view AccidentDetailsView to retrieve all major accidents?**

select \* from accdientsinc;

**11.Create a view to show the total number of accidents per vehicle type?**

create view total\_no\_of\_accidents as

select V.VehicleType,count(a.AccidentID) as AccidentCount from accidentdetails ac

join accidents a on ac.AccidentID=a.AccidentID

join vehicles V ON ac.VehicleID=V.VehicleID

group by V.VehicleType;

select \* from total\_no\_of\_accidents;

**12. Create a view that shows the number of accidents each driver was involved in?**

CREATE VIEW DriverAccidentCount AS

SELECT D.DriverID, D.Name, COUNT(\*) AS AccidentCount

FROM AccidentDetails AD

JOIN Drivers D ON AD.DriverID = D.DriverID

GROUP BY D.DriverID, D.Name;

select \* from DriverAccidentCount;

**#13.Rank the locations by the number of accidents in descending order?**

select L.LocationName,count(\*) as No\_of\_accidents,

rank() over(order by count(\*)) as Accdients\_Rank

from accidentdetails AC join accidents A on AC.AccidentID=A.AccidentID

join locations L on A.LocationID=L.LocationID

group by L.LocationName;

**14.Find the cumulative count of accidents by date?**

select A.AccidentDate,Count(A.AccidentDate) as AccidentCount,

sum(count(\*)) over(order by A.AccidentDate )as Cummulative\_Accdients\_rANK

from accidents A JOIN locations L ON A.LocationID=L.LocationID

group by A.AccidentDate;

**15.Use a CTE to calculate the average number of accidents per location?**

with AVG\_ACCIDENTS as(

select L.LocationID,count(\*) as No\_of\_accidents

from accidentdetails AC join accidents A on AC.AccidentID=A.AccidentID

join locations L on A.LocationID=L.LocationID

group by L.LocationID)

SELECT AVG(No\_of\_accidents) AS AvgAccidentsPerLocation FROM AVG\_ACCIDENTS ;

**16.Use a CTE to list all fatal accidents and the drivers involved?**

WITH FatalAccidents AS (

SELECT AccidentID FROM Accidents WHERE Severity = 'Fatal'

)

SELECT FA.AccidentID, D.Name, D.LicenseNumber

FROM FatalAccidents FA

JOIN AccidentDetails AD ON FA.AccidentID = AD.AccidentID

JOIN Drivers D ON AD.DriverID = D.DriverID;

**17. Classify accidents as 'Low Risk', 'Medium Risk', or 'High Risk' based on severity?**

select

CASE WHEN Severity='Minor' then 'Low Risk'

WHEN Severity= 'Major' then 'Meduim Risk'

WHEN Severity='Fatal' then 'High Risk'

END AS 'RISK LEVEL'

FROM accidents;

**18.Categorize drivers into 'Novice', 'Intermediate', or 'Experienced' based on years of experience?**

select

CASE WHEN ExperienceYears between 7 and 10 then 'NOVICE'

WHEN ExperienceYears between 11 and 15 then 'Intermediate'

WHEN ExperienceYears between 16 and 20 then 'Experienced'

else 'not available'

END AS 'Experience In Years'

FROM drivers;

**19.Determine if each accident occurred under 'Good' or 'Bad' weather conditions?**

select

case

when WeatherConditions ='Clear' then 'Good'

when WeatherConditions in('Fog','Rain') then 'Bad'

End as ' WeatherCategory'

from accidents;

**20. Label vehicles as 'Old' or 'New' based on their manufacturing year?**

select VehicleID, Manufacturer, Model, Year,

case when Year between 2018 and 2020 then 'Old'

when Year between 2021 and 2023 then 'New'

end as 'VehicleAgeCategory'

FROM vehicles;