**ASSIGNMENT#2(MINI PROJECT)**

**MA.A.Harinesh**

**1. Countries and their continents. Order the results by continent names.**

**Ans:** select con.countryname,cn.continent

from continents cn

inner join countries con on con.continent=cn.contid

order by 2;

**2. Number of countries within each continent.**

**Ans:** select cn.continent,count(\*)

from continents cn

inner join COUNTRIES con on cn.contid=con.CONTINENT

group by cn.continent;

**3. countries with no car makers?**

**Ans:** select con.countryname

from countries con

left join car\_makers cm on con.countryid=cm.country

where cm.country is null

order by 1;

**4. List of Car makers from Japan**

**Ans:** select cn.continent, con.countryname, cm.maker, cm.fullname

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

where con.countryname ='japan'

order by 1,2,3;

**5. List of Car makers from France and USA**

**Ans:** select cn.continent, con.countryname, cm.maker, cm.fullname

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

where con.countryname ='france' or con.countryname ='usa'

order by 1,2,3;

**6. Country and continent of Volvo car maker**

**Ans:** select cn.continent, con.countryname, cm.maker, cm.fullname

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

where cm.maker ='volvo';

**7. Car models from 'Ford Motor Company'**

**Ans:** select cn.continent, con.countryname, cm.maker, cm.fullname ,md.model

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

inner join model\_details md on cm.id=md.maker

where cm.maker ='ford';

**8. How many car models are made by Germany?**

**Ans:** select cn.continent, con.countryname, cm.maker, cm.fullname ,md.model

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

inner join model\_details md on cm.id=md.maker

where con.countryname ='germany';

**9. Car models made by Japan along with maker details.**

**Ans:** select cn.continent, con.countryname, cm.maker, cm.fullname ,md.model

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

inner join model\_details md on cm.id=md.maker

where con.countryname ='japan';

**10. Which car models have highest and lowest values of below attributes. Extract the car maker and geography (country and continent) information also:**

**a. Mpg**

**Ans:** select cn.continent,con.countryName,cm.maker,md.model,cd.mpg

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

inner join model\_details md on cm.id=md.maker

inner join car\_names cna on md.model=cna.model

inner join car\_details cd on cna.id=cd.id

where cd.mpg = (select min(mpg) from car\_details) or cd.mpg = (select max(mpg) from car\_details)

order by 5;

**b. Cylinders**

**Ans:** select cn.continent,con.countryName,cm.maker,md.model,cd.cylinders

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

inner join model\_details md on cm.id=md.maker

inner join car\_names cna on md.model=cna.model

inner join car\_details cd on cna.id=cd.id

where cd.cylinders = (select min(cylinders) from car\_details) or cd.cylinders = (select max(cylinders) from car\_details)

order by 5;

**c. Edispl**

**Ans:** select cn.continent,con.countryName,cm.maker,md.model,cd.edispl

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

inner join model\_details md on cm.id=md.maker

inner join car\_names cna on md.model=cna.model

inner join car\_details cd on cna.id=cd.id

where cd.edispl = (select min(edispl) from car\_details) or cd.edispl = (select max(edispl) from car\_details)

order by 5;

**d. Horsepower**

**Ans:** select cn.continent,con.countryName,cm.maker,md.model,cd.horsepower

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

inner join model\_details md on cm.id=md.maker

inner join car\_names cna on md.model=cna.model

inner join car\_details cd on cna.id=cd.id

where cd.horsepower = (select min(horsepower) from car\_details) or cd.horsepower = (select max(horsepower) from car\_details)

order by 5;

**e. Weight**

**Ans:** select cn.continent,con.countryName,cm.maker,md.model,cd.weight

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

inner join model\_details md on cm.id=md.maker

inner join car\_names cna on md.model=cna.model

inner join car\_details cd on cna.id=cd.id

where cd.weight = (select min(weight) from car\_details) or cd.weight = (select max(weight) from car\_details)

order by 5;

**f. Accel**

**Ans:** select cn.continent,con.countryName,cm.maker,md.model,cd.accel

from continents cn

inner join countries con on cn.contid=con.continent

inner join car\_makers cm on con.countryid=cm.country

inner join model\_details md on cm.id=md.maker

inner join car\_names cna on md.model=cna.model

inner join car\_details cd on cna.id=cd.id

where cd.accel = (select min(accel) from car\_details) or cd.accel = (select max(accel) from car\_details)

order by 5;

**11. In which year most cars were made?**

**Ans:** select year,count(\*)

from car\_details cd

group by year

order by sum(year) desc

fetch first 1 row only;

**12. Which year had less cars made?**

**Ans:** select year,count(\*)

from car\_details cd

group by year

order by sum(year) asc

fetch first 1 row only;

**13. Min, Max and Average of below attributes around the year(s)**

**a. Mpg**

**Ans:** select year,min(mpg),max(mpg),avg(mpg)

from car\_details

group by year;

**b. Cylinders**

**Ans:** select year,min(cylinders),max(cylinders),avg(cylinders)

from car\_details

group by year;

**c. Edispl**

**Ans:** select year,min(edispl),max(edispl),avg(edispl)

from car\_details

group by year;

**d. Horsepower**

**Ans:** select year,min(horsepower),max(horsepower),avg(horsepower)

from car\_details

group by year;

**e. Weight**

**Ans:** select year,min(weight),max(weight),avg(weight)

from car\_details

group by year;

**f. Acel**

**Ans:** select year,min(accel),max(accel),avg(accel)

from car\_details

group by year;

**14. Please carry out a small statistical analysis around (1) Horsepower (2) Weight (3) Accel. Try calculating the mean, median and standard deviation. Use SQL queries to extract these measures. What do these measures convey about horsepower and weight of the cars data? Share SQLs and few bullets on your understanding on the values captured for mean, median and standard deviation.**

**Ans:** select median(horsepower),

median(weight),

median(accel)

from car\_details;

select avg(horsepower) "mean hp",

avg(weight) "mean weight",

avg(accel) "mean accel"

from car\_details;

select stddev(horsepower),

stddev(weight),

stddev(accel)

from car\_details;

There is a slight numerical difference between the mean and standard deviation of horsepower to the respected vehicles where 155 vehicles are above mean of horsepower and 257 vehicles are below the mean of horsepower.(highest hp=230 and lowest hp=46).

There is a huge numerical difference between the mean and standard deviation of weight to the respected vehicles where 177 vehicles are above mean of weight and 230 vehicles are below the mean of weight.(highest weight=5140 and lowest weight=1613).

**15. Draw the entity-relationship (ER) model depicting car database tables, PK and FK (i.e., relationships between them) on a plain paper using pen/pencil. Share the screenshot (ensure picture is clearly visible) and share.**

**Ans:**

**A paper with writing on it

Description automatically generated**