Geeks of Gurukul

Tittle

Car Analysis

SQL Project

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Description

This project involves analyzing the fuel type distribution across four major car brands: Audi, BMW, Hyundai, and Mercedes. The goal is to understand the prevalence of different fuel types within each brand and compare them to see if any patterns or trends emerge. The analysis is conducted using SQL to aggregate and join data from different tables representing each car brand.

01

Each Car brand How many car

```
SELECT 'audi' AS brand,  count(Distinct ID) AS count_of_Car FROM audi1
UNION ALL
SELECT 'bmw', count(Distinct ID) FROM bmw1
UNION ALL
SELECT 'hyndai', count(Distinct ID) FROM hyndai1
UNION ALL
SELECT 'merc', count(Distinct ID) FROM merc1;
```

	brand	count_of_Car
1	audi	1000
2	bmw	999
3	hyndai	1000
4	merc	1000

Brand Wise highest_price Compare Each other

```
SELECT 'audi' AS brand, MAX(price) AS highest_price FROM audi1
UNION ALL
SELECT 'bmw', MAX(price) FROM bmw1
UNION ALL
SELECT 'hyndai', MAX(price) FROM hyndai1
UNION ALL
SELECT 'merc', MAX(price) FROM merc1;
```

	brand	highest_price
1	audi	83995
2	bmw	84898
3	hyndai	34998
4	merc	149948

Each car brand find no of car use of type of fuel

```sql
SELECT
    COALESCE(audi.fueltype, bmw.fueltype, hyundai.fueltype, merc.fueltype) AS fueltype,
    COALESCE(audi.brand, 'Audi') AS audi_brand, COALESCE(audi.audi_Id, 0) AS audi_Id,
    COALESCE(bmw.brand, 'BMW') AS bmw_brand, COALESCE(bmw.bmw_Id, 0) AS bmw_Id,
    COALESCE(hyundai.brand, 'Hyndai') AS hyundai_brand, COALESCE(hyundai.hyundai_Id, 0) AS hyundai_Id,
    COALESCE(merc.brand, 'Mercedes') AS merc_brand, COALESCE(merc.merc_Id, 0) AS merc_Id
FROM
    (SELECT 'Audi' AS brand, COUNT(audi1.ID) AS audi_Id, fueltype.fueltype
     FROM audi1
     JOIN fueltype ON audi1.fuel_ID = fueltype.fuel_ID
     GROUP BY fueltype.fueltype) AS audi
FULL OUTER JOIN
    (SELECT 'BMW' AS brand, COUNT(bmw1.ID) AS bmw_Id, fueltype.fueltype
     FROM bmw1
     JOIN fueltype ON bmw1.fuel_ID = fueltype.fuel_ID
     GROUP BY fueltype.fueltype) AS bmw
ON audi.fueltype = bmw.fueltype
FULL OUTER JOIN
    (SELECT 'Hyndai' AS brand, COUNT(hyndai1.ID) AS hyundai_Id, fueltype.fueltype
     FROM hyndai1
     JOIN fueltype ON hyndai1.fuel_ID = fueltype.fuel_ID
     GROUP BY fueltype.fueltype) AS hyundai
ON COALESCE(audi.fueltype, bmw.fueltype) = hyundai.fueltype
FULL OUTER JOIN
    (SELECT 'Mercedes' AS brand, COUNT(merc1.ID) AS merc_Id, fueltype.fueltype
     FROM merc1
     JOIN fueltype ON merc1.fuel_ID = fueltype.fuel_ID
     GROUP BY fueltype.fueltype) AS merc
ON COALESCE(audi.fueltype, bmw.fueltype, hyundai.fueltype) = merc.fueltype;
```

	fueltype	audi_brand	audi_Id	bmw_brand	bmw_Id	hyundai_brand	hyundai_Id	merc_brand	merc_Id
1	Diesel	Audi	536	BMW	710	Hyndai	425	Mercedes	766
2	Hybrid	Audi	1	BMW	18	Hyndai	56	Mercedes	14
3	Other	Audi	0	BMW	7	Hyundai	0	Mercedes	0
4	Petrol	Audi	463	BMW	264	Hyndai	519	Mercedes	220

Each car brand yearly wise highest price(Top 5)

```sql
SELECT top 5 'audi' AS brand, model_name,year,max(price) AS year_wise_highest_price FROM audi1 join models
on audi1.model_ID=models.model_ID
group by model_name,year
UNION ALL
SELECT top 5 'bmw',model_name, year, max(price) FROM bmw1 join models
on bmw1.model_ID=models.model_ID
group by model_name,year
UNION ALL
SELECT top 5 'hyndai',model_name, year,max(price) FROM hyndai1 join models
on hyndai1.model_ID  = models.model_ID
group by model_name, year
UNION ALL
SELECT   top 5 'merc', model_name,year,max(price) FROM merc1 join models
on merc1.model_ID= models.model_ID
group by model_name,year;
```

	brand	model_name	year	year_wise_highest_price
1	audi	A1	2013	9998
2	audi	A3	2013	14995
3	audi	A4	2013	12990
4	audi	A6	2013	12495
5	audi	Q3	2013	11998
6	bmw	1 Series	2013	14498
7	bmw	3 Series	2013	15500
8	bmw	5 Series	2013	12791
9	bmw	X1	2013	8750
10	bmw	X3	2013	14000
11	hyn...	IX35	2011	7799
12	hyn...	I10	2012	3799
13	hyn...	IX35	2012	5000
14	hyn...	Veloster	2012	6300
15	hyn...	I10	2013	5000
16	merc	SLK	2004	4890
17	merc	SLK	2005	5200
18	merc	A Class	2006	2880
19	merc	C Class	2007	3890
20	merc	E Class	2007	4880

Brand wise total revenue

```
Select 'auidi'As brand,
sum(price) As revenue from audi1
union all
Select 'bmw'As brand,
sum(price) As revenue from bmw1
union all
Select 'hyndai'As brand,
sum(price) As revenue from hyndai1
Union all
Select 'merc'As brand,
sum(price) As revenue from merc1
```

	brand	revenue
1	auidi	23012499
2	bmw	21856224
3	hyndai	12026239
4	merc	23201557

Brand and yearly wise total revenue

```sql
Select 'auidi'As brand,year,
sum(price) As revenue from audi1
group by year
Union all
Select 'bmw'As brand,year,
sum(price) As revenue from bmw1
group by year
union all
Select 'hyndai'As brand,year,
sum(price) As revenue from hyndai1
group by year
union all
Select 'merc'As brand,year,
sum(price) As revenue from merc1
group by year
```

	brand	year	revenue
1	auidi	2013	225046
2	auidi	2016	3537848
3	auidi	2019	8620470
4	auidi	2014	587359
5	auidi	2020	1373373
6	auidi	2017	4330611
7	auidi	2018	2709833
8	auidi	2015	1627959
9	bmw	2013	425459
10	bmw	2016	3610009
11	bmw	2019	7861529
12	bmw	2014	623669
13	bmw	2020	1227004
14	bmw	2017	4316148
15	bmw	2018	2600545
16	bmw	2015	1191861
17	hyndai	2013	180213
18	hyndai	2016	2180561
19	hyndai	2019	2762293
20	hyndai	2014	330635
21	hyndai	2020	313700
22	hyndai	2011	14735
23	hyndai	2017	2883318
24	hyndai	2012	15099
25	hyndai	2018	2668022
26	hyndai	2015	677663
27	merc	2004	4890
28	merc	2010	41235
29	merc	2007	28390
30	merc	2013	336281
31	merc	2008	11970
32	merc	2016	4141136
33	merc	2005	5200
34	merc	2019	6837067
35	merc	2020	1058182
36	merc	2014	860821
37	merc	2011	163118
38	merc	2017	4684502
39	merc	2006	2880
40	merc	2012	10948
41	merc	2018	2795270
42	merc	2009	8680
43	merc	2015	2210987

7.Brand according highest mileage with year and ID

```
Select 'Auidi' as BRAND, ID, year, mileage from audi1 where mileage=
(Select max(mileage) from audi1)
Union all
Select 'BMW' as brand, ID, year, mileage from bmw1 where mileage=
(Select max(mileage)from bmw1)
Union all
Select 'HYNDAI' as brand, ID, year, mileage from hyndai1 where mileage=
(Select max(mileage)from hyndai1)
Union all
Select 'MERC' as brand, ID, year, mileage from merc1 where mileage=
(Select max(mileage)from merc1)
```

	BRAND	ID	year	mileage
1	Auidi	152	2013	98940
2	BMW	27715	2016	96213
3	HYNDAI	38564	2012	119050
4	MERC	14644	2009	130000

How many car brand type of transmission

```
Select'auidi' as brand, transmission ,count(audi1.ID)  as brand_count from audi1 join transmission
ON audi1.transmission_ID= transmission.ID
group by transmission
Union all
Select 'bmw' as  brand, transmission ,count(bmw1.ID)  as brand_count from  bmw1 join transmission
ON bmw1.transmission_ID= transmission.ID
group by transmission
Union all
Select 'hyndai' as brand, transmission ,count(hyndai1.ID)  as brand_count from hyndai1 join transmission
ON hyndai1.transmission_ID= transmission.ID
group by transmission
Union all
Select 'merc' as brand, transmission ,count(merc1.ID)  as brand_count from merc1 join transmission
ON merc1.transmission_ID= transmission.ID
group by transmission
```

	brand	transmission	brand_count
1	auidi	Automatic	195
2	auidi	Manual	424
3	auidi	Semi-Auto	381
4	bmw	Automatic	171
5	bmw	Manual	234
6	bmw	Semi-Auto	594
7	hyndai	Automatic	100
8	hyndai	Manual	832
9	hyndai	Semi-Auto	68
10	merc	Automatic	224
11	merc	Manual	100
12	merc	Semi-Auto	676

Conclusion

This analysis provides a comprehensive view of fuel type distribution across four major car brands. By leveraging SQL, we were able to effectively aggregate and compare the data. The findings can help manufacturers and marketers understand market trends and consumer preferences for different fuel types within each brand.

Thank You