

Data Science SQL Mini-Project



BUSINESS

INSIGHTS

CARS24

BY KHUSHI

INSIGHT 1

Reading the whole table.

```
SELECT * FROM cars24;
```

This query returns the result set of records in rows and columns from table 'cars24'. It provides insight into all the fields and records in the table.

```
2
3  -- Reading the whole table.
4 • SELECT * FROM cars24;
5
6
```

	name	year	selling_price	km_driven	fuel	seller_type	transmission	owner	mileage	engine [CC]	max_power	seats
▶	Hyundai i20 Asta 1.2	2007	550000	2360457	Petrol	Individual	Manual	Second Owner	18.6	1197	81.83	5
	Maruti Wagon R LXI Minor	2010	194000	577414	Petrol	Individual	Manual	Second Owner	18.9	1061	67	5
	Maruti Wagon R VXI BS IV	2011	229999	500000	Petrol	Individual	Manual	Second Owner	18.9	998	67.1	5
	Maruti Wagon R LXI BS IV	2012	220000	360003	Petrol	Individual	Manual	Second Owner	18.9	998	67.1	5
	Hyundai Sonata 2.4 GDI MT	2012	550000	330000	Petrol	Individual	Manual	Second Owner	13.44	2359	198.25	5
	Hyundai Sonata 2.4 GDI MT	2012	500000	330000	Petrol	Individual	Manual	Second Owner	13.44	2359	198.25	5
	Maruti Ertiga BSIV VXI	2017	700000	227000	Petrol	Individual	Manual	First Owner	17.5	1373	91.1	7
	Hyundai i20 1.2 Asta	2011	220000	220000	Petrol	Individual	Manual	Fourth & Above Owner	17	1197	80	5
	Maruti 800 EX	2004	70000	220000	Petrol	Individual	Manual	Second Owner	16.1	796	37	4
	Honda Civic 1.8 S AT	2007	175000	218463	Petrol	Individual	Automatic	First Owner	12.9	1799	130	5
	Hyundai Verna XXI ABS (Pe...	2009	340000	214000	Petrol	Individual	Manual	Second Owner	13.9	1599	103.2	5
	Renault KWID RXT	2015	210000	210000	Petrol	Individual	Manual	Second Owner	25.17	799	53.3	5
	Maruti Alto LX	2000	108000	206000	Petrol	Individual	Manual	Fourth & Above Owner	19.7	796	46.3	5
	Hyundai i10 Magna 1.1L	2010	187000	200400	Petrol	Individual	Manual	Second Owner	19.81	1086	68.05	5
	Ford Fiesta 1.4 Duratec ZXI	2008	136000	200185	Petrol	Individual	Manual	First Owner	16.6	1388	68	5
	Maruti Swift Dzire 1.2 Vxi ...	2010	210000	200000	Petrol	Individual	Manual	First Owner	17.5	1197	85.8	5
	Maruti Zen Estilo VXI BSIV	2010	160000	200000	Petrol	Individual	Manual	First Owner	19	998	67.1	5
	Honda CR-V 2.0L 2WD AT	2006	125000	200000	Petrol	Individual	Automatic	Third Owner	13.1	1997	141.1	5
	Maruti Wagon R LXI	2005	65000	108000	Petrol	Individual	Manual	Second Owner	18.0	998	67.1	5

cars24 3 x

Read Only

INSIGHT 2

Counting the total number of cars present in the data set.

```
SELECT COUNT(*) AS Count FROM cars24;
```

This query returns the count of the rows from table 'cars24'. It shows the number of car records present in the table.

```
5
6  -- Counting the total number cars present in the data set.
7  • SELECT COUNT(*) as count FROM cars24;
8
9
```

Result Grid			Filter Rows: <input type="text"/>	Export: 	Wrap Cell Content: 
	count				
▶	8128				

INSIGHT 3

Counting the number of cars Sold by each Seller type.

```
SELECT seller_type, COUNT(*) AS count FROM cars24 GROUP BY seller_type;
```

This query provides insight into the distribution of cars sold based on the type of seller. It shows the total number of cars sold by individual sellers, dealers, and Trustmark dealers.

```
76
77 -- Counting the number of cars manufactured per Year and their Average Selling Price.
78 • SELECT year, COUNT(*), AVG(selling_price) FROM cars24 GROUP BY 1 ORDER BY 1;
79
80
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
year	COUNT(*)	AVG(selling_price)	
1983	1	300000.0000	
1991	1	55000.0000	
1994	3	88000.0000	
1995	2	107500.0000	
1996	3	81666.6667	
1997	11	90181.7273	
1998	10	73100.0000	
1999	18	75833.3333	
2000	22	93041.5455	
2001	10	48498.3000	
2002	27	98999.9630	
2003	49	95636.6939	
2004	62	110965.4032	
2005	97	141159.7835	
2006	124	163904.4113	
2007	183	177718.2131	
2008	214	207488.3879	

Result 5 x

INSIGHT 4

Average Selling Price of cars with High Mileage.

```
SELECT fuel, AVG(selling_price) AS avg_selling_price FROM cars24 WHERE  
mileage > 20 GROUP BY 1 ORDER BY 2 DESC;
```

This query calculates the average selling price of cars with a mileage of more than 20 kilometers per liter. It provides insight into the price range of fuel-efficient cars.

```
11  
12  -- Average Selling Price of Cars with High Mileage.  
13 • SELECT Fuel, AVG(selling_price) AS avg_selling_price FROM cars24 WHERE mileage > 20 GROUP BY 1 ORDER BY 2 DESC;  
14
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

	Fuel	avg_selling_price
▶	Diesel	567526.2723
	Petrol	512759.5545
	CNG	331531.8511
	LPG	236300.0000

INSIGHT 5

Name, Year of manufacturing and Selling Price of the cars of Honda.

```
SELECT name, year, selling_price FROM cars24 WHERE name LIKE '%Honda%'
ORDER BY 2,3;
```

This query returns the name, manufacturing year and selling price of cars which includes Honda in their name. It shows the selling price of cars of Honda based on year.

```
14
15  -- Name, Year of manufacturing and Selling Price of the Cars of Honda.
16 •  SELECT name, year, selling_price FROM cars24 WHERE name LIKE '%Honda%' ORDER BY 2,3;
17
18
```

	name	year	selling_price
▶	Honda City 1.5 EXI	2002	81000
	Honda City 1.3 EXI	2004	50000
	Honda City 1.3 EXI	2004	135000
	Honda City 1.5 GXI	2004	198000
	Honda City 1.5 GXI	2004	198000
	Honda Accord V6 AT	2004	275000
	Honda CR-V 2.4 4WD AT	2004	325000
	Honda City 1.3 EXI	2005	55000
	Honda City 1.5 EXI	2005	75000
	Honda City 1.5 EXI	2005	100000
	Honda City ZXi AT	2005	110000
	Honda City 1.5 GXI CVT	2005	250000
	Honda Accord V6 AT	2005	285000
	Honda CR-V 2.4L 4WD	2005	476999
	Honda City 2017-2020 GXi	2006	93150
	Honda Civic 1.8 S MT	2006	121000
	Honda CR-V 2.0L 2WD AT	2006	125000
	Honda City 2017-2020 EXi	2006	150000
	Honda City 2017-2020 ...	2006	150000
	Honda City 2017-2020 ...	2006	150000

cars24 11 x

INSIGHT 6

Count of cars based on different types of owners and Average Kilometer Driven.

```
SELECT owner, Count(*), AVG(km_driven) FROM cars24 GROUP BY 1 ORDER BY 2 DESC;
```

This query returns the count of cars based on owner type along with average kilometer driven by the cars. It provides insight into the number of cars owned by each owner type and the average distance covered by the cars.

```
20 -- Count of cars based on different types owners and average kilometer driven.
21 • SELECT owner, Count(*), AVG(km_driven) FROM cars24 GROUP BY 1 ORDER BY 2 DESC;
22
23
```

owner	Count(*)	AVG(km_driven)
First Owner	5289	57508.8000
Second Owner	2105	89861.5325
Third Owner	555	100239.5730
Fourth & Above Owner	174	106116.6379
Test Drive Car	5	14631.4000

INSIGHT 7

Calculating Minimum Selling Price based on the number of Seats.

```
SELECT seats, MIN(selling_price) FROM cars24 GROUP BY 1 ORDER BY 1;
```

This query calculates the minimum selling price on the basis of the number of seats present in the cars. It provides insight into the minimum price of the cars based on the count of seats present in the cars.

```
22
23  -- Minimum Price of cars based on Seat number of each car.
24 •  SELECT seats, MIN(selling_price) from cars24 GROUP BY 1 ORDER BY 1;
25
```

	seats	MIN(selling_price)
▶	2	679000
	4	29999
	5	30000
	6	280000
	7	95000
	8	80000
	9	150000
	10	95000
	14	235000

INSIGHT 8

Calculating the Maximum Power Output by Transmission Type.

```
SELECT name, transmission, MAX(max_power) AS max_power_output FROM  
cars24 GROUP BY name, transmission HAVING max_power_output > 200;
```

This query returns the name and transmission type of the cars with a maximum power output of more than 200. It provides insight into the transmission type of the cars having high power output.

```
25
26 -- Calculating the Maximum Power Output by Transmission Type.
27 • SELECT name, transmission, MAX(max_power) AS max_power_output
28 FROM cars24
29 GROUP BY name, transmission
30 HAVING max_power_output > 200;
31
```

	name	transmission	max_power_output
▶	Honda Accord V6 AT	Automatic	218
	Mercedes-Benz E-Class E 250 Elegance	Automatic	204
	Mercedes-Benz E-Class E350 Petrol	Automatic	272
	Volvo XC90 T8 Excellence BSIV	Automatic	400
	Lexus ES 300h	Automatic	214.56
	Jeep Wrangler 2016-2019 3.6 4X4	Automatic	280
	Audi Q7 3.0 TDI Quattro	Automatic	241.4
	Audi Q5 45 TDI quattro Technology	Automatic	241.4
	Mercedes-Benz M-Class ML 250 CDI	Automatic	203.2
	BMW 7 Series 730Ld	Automatic	258
	Mercedes-Benz New C-Class C 250 CD...	Automatic	204
	Audi Q5 3.0 TDI Quattro	Automatic	241.4
	Mercedes-Benz GL-Class 350 CDI Luxury	Automatic	224
	Mercedes-Benz M-Class ML 350 CDI	Automatic	254.8
	Audi Q7 3.0 TDI Quattro Premium Plus	Automatic	241.4
	Mercedes-Benz E-Class E250 CDI Eleg...	Automatic	203
	BMW 5 Series 530d	Automatic	235
	Mercedes-Benz E-Class E250 CDI Ava...	Automatic	201.1
	BMW 5 Series 525d	Automatic	218

Result 35 × ⓘ Read On

INSIGHT 9

Calculating the Average Selling Price by Transmission Type and Fuel Type.

```
SELECT transmission, fuel, AVG(selling_price) AS avg_selling_price FROM  
cars24 GROUP BY transmission, fuel;
```

This query calculates the average selling price for cars based on both the transmission type and fuel type. It provides insight into the price variation based on the combination of these two factors.

```
30  
31  -- Calculating the Average Selling Price by Transmission Type and Fuel Type.  
32 •  SELECT transmission, fuel, AVG(selling_price) AS avg_selling_price  
33  FROM cars24  
34  GROUP BY transmission, fuel;  
35  
36
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
transmission	fuel	avg_selling_price	
Manual	Petrol	344147.1923	
Automatic	Petrol	1176560.0601	
Manual	LPG	200421.0526	
Manual	Diesel	549822.0703	
Automatic	Diesel	2541692.8708	
Manual	CNG	301017.4912	






INSIGHT 10

Year with Highest Count of cars manufactured.

```
SELECT year, COUNT(*) AS count FROM cars24 GROUP BY 1 ORDER BY 2 DESC  
LIMIT 1;
```

This query provides insight into the year in which the production of the cars was highest. It shows the year with the highest total number of cars.

```
35  
36 -- Year with highest number of cars manufactured.  
37 • SELECT year, COUNT(*) AS count FROM cars24  
38 GROUP BY 1  
39 ORDER BY 2 DESC  
40 LIMIT 1;  
41
```

Result Grid			Filter Rows: <input type="text"/>	Export: 	Wrap Cell Content: 	Fetch rows: 
	year	count				
▶	2017	1018				

INSIGHT 11

Calculating the different Selling Price and Count of cars based on Fuel type.

```
SELECT fuel, AVG(selling_price) AS avg_selling_price, MAX(selling_price) AS  
max_selling_price, MIN(selling_price) AS min_selling_price, SUM(selling_price)  
AS total_selling_price, COUNT(*) AS total_cars FROM cars24 GROUP BY 1  
ORDER BY 2 DESC;
```

This query calculates the average, maximum, minimum and total selling price, and the count of cars based on the fuel type. It provides insight into the price variation and number of cars based on the fuel type.

```
41  
42 -- Calculating the different Selling Price and Count of cars based on Fuel type.  
43 • SELECT fuel,  
44     AVG(selling_price) AS avg_selling_price,  
45     MAX(selling_price) AS max_selling_price,  
46     MIN(selling_price) AS min_selling_price,  
47     SUM(selling_price) AS total_selling_price,  
48     COUNT(*) AS total_cars  
49 FROM cars24  
50 GROUP BY 1  
51 ORDER BY 2 DESC;  
52  
53
```

	fuel	avg_selling_price	max_selling_price	min_selling_price	total_selling_price	total_cars
►	Diesel	791452.9216	7200000	40000	3483975761	4402
	Petrol	462441.0617	10000000	29999	1679123495	3631
	CNG	301017.4912	545000	80000	17157997	57
	LPG	200421.0526	375000	54000	7616000	38

INSIGHT 12

Count of cars having High Engine [CC]

```
SELECT COUNT(*) cars_count  
FROM (SELECT distinct name FROM cars24 where (`engine [CC]`)>2000;) as  
a;
```

This query returns the count of the cars with engine of more than 2000 CC. It provides the insight into the count of cars with high engine CC.

```
53  -- Count of cars having High Engine [CC]  
54  •  SELECT COUNT(*) cars_count  
55  FROM (SELECT distinct name FROM cars24 where (`engine [CC]`)>2000) as a;  
56  
57  
58
```

Result Grid |  Filter Rows: | Export:  | Wrap Cell Content: 

	cars_count
▶	358

INSIGHT 13

Count and Type of cars based on Seats as Small, Medium and Large.

```
SELECT CASE WHEN seats < 6 THEN 'Small' WHEN seats BETWEEN 6 AND 8  
THEN 'Medium' WHEN seats > 8 THEN 'Large' END as Type, COUNT(*) as Count  
FROM cars24 GROUP BY 1;
```

This query returns the type (small, medium and large) and count of cars based on the number of seats. It provides the insight into the count of size category of cars with different number of seats.

```
56  
57 -- Count and Type of cars based on Seats as Small, Medium and Large.  
58 • SELECT  
59 CASE WHEN seats < 6 THEN 'Small'  
60 WHEN seats BETWEEN 6 AND 8 THEN 'Medium'  
61 WHEN seats > 8 THEN 'Large'  
62 END as Type,  
63 COUNT(*) as Count  
64 FROM cars24  
65 GROUP BY 1;  
66
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
Type	Count		
Small	6610		
Medium	1418		
Large	100		

INSIGHT 14

Counting the type of cars based on Year of manufacturing as Old, Middle Aged and New, and their fuel type.

```
SELECT CASE WHEN year < 2000 THEN 'Old' WHEN year BETWEEN 2000 AND 2015 THEN 'Middle Aged' WHEN year > 2015 THEN 'New' END as Type, COUNT(*) as Count, fuel FROM cars24 GROUP BY 1,3;
```

This query returns the type (old, middle aged and new) and count of cars based on the year of manufacturing. It provides the insight into the count of cars of different age category and their fuel type.

```
66
67  -- Counting the type of cars based on Year of manufacturing as Old, Middle Aged and New, and their fuel type.
68 • SELECT
69  CASE WHEN year < 2000 THEN 'Old'
70    WHEN year BETWEEN 2000 AND 2015 THEN 'Middle Aged'
71    WHEN year > 2015 THEN 'New'
72  END as Type,
73  COUNT(*) as Count, fuel
74  FROM cars24
75  GROUP BY 1,3;
76
```

Type	Count	fuel
Middle Aged	1938	Petrol
New	1658	Petrol
Old	35	Petrol
Middle Aged	36	LPG
Old	2	LPG
Middle Aged	2737	Diesel
New	1653	Diesel
Old	12	Diesel
Middle Aged	27	CNG
New	30	CNG

Result 4 x Read Only

INSIGHT 15

Counting the number of cars Sold by each Seller type.

```
SELECT seller_type, COUNT(*) AS count FROM cars24 GROUP BY seller_type;
```

This query provides insight into the distribution of cars sold based on the type of seller. It shows the total number of cars sold by individual sellers, dealers, and Trustmark dealers.



```
9
10  -- Counting the number of cars sold by each seller type.
11 • SELECT seller_type, COUNT(*) AS count FROM cars24 GROUP BY seller_type;
12
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	seller_type	count
▶	Individual	6766
	Dealer	1126
	Trustmark Dealer	236