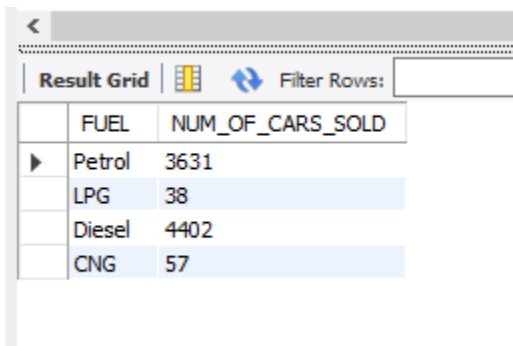


## Data Science SQL Mini-Project



### 1. NUMBER OF CARS SOLD BASED ON FUEL TYPE

```
SELECT FUEL,COUNT(*) AS NUM_OF_CARS_SOLD  
FROM CARS24  
GROUP BY 1;
```

A screenshot of a SQL query result grid. The grid has two columns: "FUEL" and "NUM\_OF\_CARS\_SOLD". The data is as follows:

FUEL	NUM_OF_CARS_SOLD
Petrol	3631
LPG	38
Diesel	4402
CNG	57

- This shows the number of cars sold based on the fuel type.
- Using this we understand the market trend and based on it we can build the inventory.

### 2.AVERAGE SELLING PRICE BY FUEL TYPE

```
SELECT FUEL, ROUND(AVG(SELLING_PRICE)) AS AVG_SELLING_PRICE  
FROM cars24  
GROUP BY FUEL  
ORDER BY AVG_SELLING_PRICE;
```

Result Grid			Filter Rows:
	FUEL	AVG_SELLING_PRICE	
▶	LPG	200421	
	CNG	301017	
	Petrol	462441	
	Diesel	791453	

- This helps understanding pricing across different fuel types, which can help in pricing strategies.
- It optimizes revenue and market positioning for specific fuel types.

### 3. AVERAGE MILEAGE BETWEEN MANUAL AND AUTOMATIC

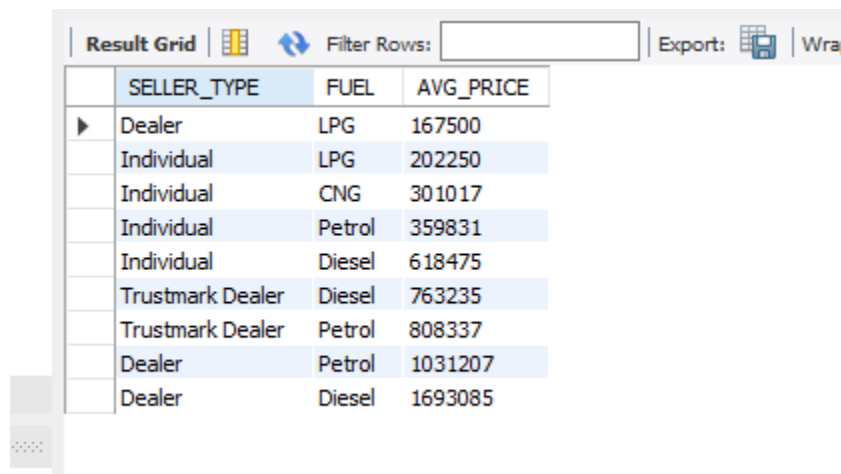
```
SELECT TRANSMISSION, AVG(MILEAGE) AS AVG_MILEAGE
FROM cars24
GROUP BY transmission
ORDER BY AVG_MILEAGE;
```

Result Grid			Filter Rows:	Export:
	TRANSMISSION	AVG_MILEAGE		
▶	Automatic	17.580580952380835		
	Manual	19.691200904210397		

- This offers valuable insights into the fuel efficiency of manual and automatic vehicles.
- This helps in understanding consumer needs and informs marketing strategies
- influencing inventory decisions towards more fuel-efficient models to meet market demand.

#### 4.AVERAGE SELLING PRICE BETWEEN INDIVIDUAL,DEALERS,TRUSTMARK DEALERS

```
SELECT SELLER_TYPE,FUEL,ROUND(AVG(SELLING_PRICE)) AS AVG_PRICE
FROM cars24
GROUP BY SELLER_TYPE,FUEL
ORDER BY AVG_PRICE;
```



The screenshot shows a 'Result Grid' window with a table of query results. The table has four columns: SELLER\_TYPE, FUEL, and AVG\_PRICE. The data is grouped by seller type and fuel type. The results are as follows:

SELLER_TYPE	FUEL	AVG_PRICE
Dealer	LPG	167500
Individual	LPG	202250
Individual	CNG	301017
Individual	Petrol	359831
Individual	Diesel	618475
Trustmark Dealer	Diesel	763235
Trustmark Dealer	Petrol	808337
Dealer	Petrol	1031207
Dealer	Diesel	1693085

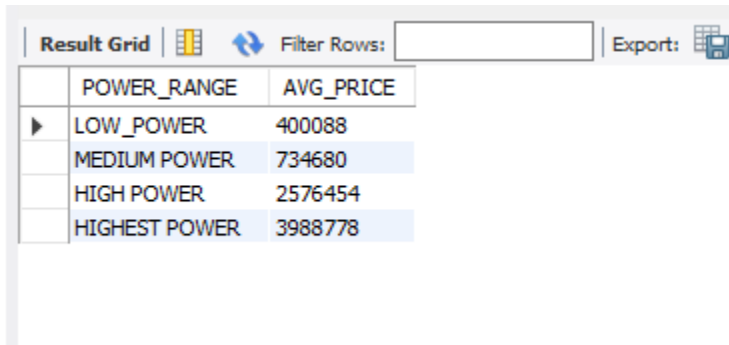
-- This provides an insight which helps in pricing, inventory management.

-- which in turn helps in profitability of the business.

#### 5.CARS PRICES WITH DIFFERENT POWERS

```
SELECT CASE WHEN MAX_POWER <100 THEN 'LOW_POWER' WHEN MAX_POWER
BETWEEN 100 AND 150 THEN 'MEDIUM POWER'
WHEN MAX_POWER BETWEEN 151 AND 200 THEN 'HIGH POWER'
WHEN MAX_POWER >200 THEN 'HIGHEST POWER'
END AS POWER_RANGE,
ROUND(AVG(SELLING_PRICE)) AS AVG_PRICE
FROM CARS24
GROUP BY POWER_RANGE
```

**ORDER BY AVG\_PRICE;**



The screenshot shows a database interface with a 'Result Grid' tab. It includes a 'Filter Rows' search bar and an 'Export' button. The table below displays the average price for different power ranges.

	POWER_RANGE	AVG_PRICE
▶	LOW_POWER	400088
	MEDIUM POWER	734680
	HIGH POWER	2576454
	HIGHEST POWER	3988778

- This provides valuable insights into pricing dynamics w.r.t the power of cars,
- Helps in pricing strategy and inventory management decisions to serve a wide range of customers.

## **6. AVERAGE SELLING PRICES OF CARS WITH DIFF KMS AND THEIR FUEL TYPES**

```
SELECT CASE WHEN KM_DRIVEN < 50000 THEN 'LESS THAN 50000'  
WHEN KM_DRIVEN BETWEEN 50000 AND 100000 THEN '50000-100000'  
WHEN KM_DRIVEN BETWEEN 100000 AND 150000 THEN '100000-150000'  
WHEN KM_DRIVEN > 150000 THEN 'ABOVE 150000'  
END AS KM_RANGE,  
FUEL,ROUND(AVG(SELLING_PRICE)) AS AVG_SELLING_PRICE  
FROM CARS24  
WHERE FUEL IN('PETROL','DIESEL') GROUP BY FUEL,KM_RANGE ORDER BY  
AVG_SELLING_PRICE;
```

Result Grid				Filter Rows:	Export
	KM_RANGE	FUEL	AVG_SELLING_PRICE		
▶	ABOVE 150000	Petrol	193383		
	100000-150000	Petrol	213205		
	50000-100000	Petrol	322355		
	ABOVE 150000	Diesel	437488		
	100000-150000	Diesel	466565		
	50000-100000	Diesel	592649		
	LESS THAN 50000	Petrol	614474		
	LESS THAN 50000	Diesel	1580638		

-- This offers insights into pricing trends relative to mileage,  
 -- helps in understanding customer choices and informing pricing strategies to different mileage across fuel types.

## 7.AVERAGE SELLING PRICE OF CARS BETWEEN MANUAL AND AUTOMATIC CARS, FUEL TYPE

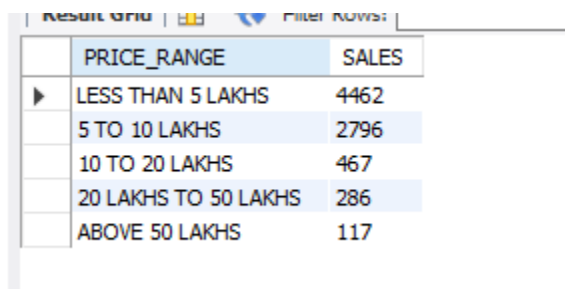
```
SELECT TRANSMISSION,FUEL,ROUND(AVG(SELLING_PRICE)) AS
AVG_SELLING_PRICE FROM CARS24
WHERE FUEL IN('PETROL','DIESEL') GROUP BY FUEL,TRANSMISSION
ORDER BY AVG_SELLING_PRICE;
```

Result Grid				Filter Rows:	Export
	TRANSMISSION	FUEL	AVG_SELLING_PRICE		
▶	Manual	Petrol	344147		
	Manual	Diesel	549822		
	Automatic	Petrol	1176560		
	Automatic	Diesel	2541693		

-- This insight helps in understanding pricing,marketing strategies and inventory management decisions  
 -- to optimize sales and profitability within each category.

## 8.PRICE RANGE AND SALES COUNT

```
SELECT CASE WHEN SELLING_PRICE < 500000 THEN 'LESS THAN 5 LAKHS'
WHEN SELLING_PRICE >= 500000 AND SELLING_PRICE < 1000000 THEN '5 TO
10 LAKHS'
WHEN SELLING_PRICE >= 1000000 AND SELLING_PRICE < 2000000 THEN '10 TO
20 LAKHS'
WHEN SELLING_PRICE >= 2000000 AND SELLING_PRICE < 5000000 THEN '20
LAKHS TO 50 LAKHS'
WHEN SELLING_PRICE >= 5000000 THEN 'ABOVE 50 LAKHS'
END AS 'PRICE_RANGE',
COUNT(*) AS SALES FROM cars24 GROUP BY PRICE_RANGE ORDER BY SALES
DESC;
```





The screenshot shows a database query result with two columns: PRICE\_RANGE and SALES. The data is as follows:

PRICE_RANGE	SALES
LESS THAN 5 LAKHS	4462
5 TO 10 LAKHS	2796
10 TO 20 LAKHS	467
20 LAKHS TO 50 LAKHS	286
ABOVE 50 LAKHS	117

- This helps in understanding customer choices and market demand for cars at different price points
- guiding pricing strategies and inventory management to meet customer needs and maximize sales revenue.

## 9.CAR SALES ACROSS DIFFERENT OWNER TYPES



```
SELECT OWNER,COUNT(*) AS SALES
FROM CARS24
GROUP BY OWNER
ORDER BY SALES DESC;
```

Result Grid     Filter Rows:		
	OWNER	SALES
▶	First Owner	5289
	Second Owner	2105
	Third Owner	555
	Fourth & Above Owner	174
	Test Drive Car	5

- This provides insights into customer preferences with pre-owned vehicles
- guiding inventory management and marketing strategies to maximize sales.

## 10.RELATIONSHIP BETWEEN ENGINE AND THE SELLING PRICE

```
SELECT `engine [CC]`, ROUND(AVG(SELLING_PRICE)) AS AVG_PRICE
FROM CARS24
GROUP BY `engine [CC]`
ORDER BY `engine [CC]` ;
```

Result Grid     Filter Rows: [		
	engine [CC]	AVG_PRICE
▶	624	94640
	793	341667
	796	165162
	799	297544
	814	241595
	909	433333
	936	185583
	993	80500
	995	123175
	998	296451
	999	414493
	1047	476778
	1061	138068
	1086	254210
	1120	424660
	1150	110000
	1172	193000
	1186	515410
	1193	306111
	1194	552111

- This analysis helps in understanding the relationship between engine capacity and price
- helps in pricing strategies and inventory management decisions to optimize sales and profitability.

## 11.TOP 5 BRANDS WITH MOST SALES

```
SELECT SUBSTRING_INDEX(NAME, ' ', 1) AS BRAND,
COUNT(*) AS NUM_OF_CARS_SOLD
FROM CARS24
GROUP BY BRAND
ORDER BY NUM_OF_CARS_SOLD DESC
LIMIT 5;
```

Result Grid			Filter Rows:
	BRAND	NUM_OF_CARS_SOLD	
▶	Maruti	2448	
	Hyundai	1415	
	Mahindra	772	
	Tata	734	
	Toyota	488	

- This helps in understanding the top 5 most sold cars which helps in inventory, sales, pricing, and marketing.
- helping businesses focus on the best-selling brands to maximize sales and meet demand effectively.

## 12.TOP 5 CARS WITH HIGHEST PRICE

```
select name,year,km_driven,fuel,seller_type,transmission,owner,mileage,
max(selling_price) as highest_price
from cars24
group by 1,2,3,4,5,6,7,8
order by highest_price desc
```



limit 5;

Result Grid									
		Filter Rows:		Export:		Wrap Cell Content:		Fetch rows:	
	name	year	km_driven	fuel	seller_type	transmission	owner	mileage	highest_price
▶	Volvo XC90 T8 Excellence BSIV	2017	30000	Petrol	Individual	Automatic	First Owner	42	10000000
	BMW X7 xDrive 30d DPE	2020	5000	Diesel	Individual	Automatic	First Owner	13.38	7200000
	Audi A6 35 TFSI Matrix	2019	23600	Petrol	Dealer	Automatic	Test Drive Car	15.26	6523000
	Audi A6 35 TFSI Matrix	2019	7800	Petrol	Dealer	Automatic	Test Drive Car	15.26	6223000
	BMW 6 Series GT 630d Luxury Line	2018	27000	Diesel	Dealer	Automatic	First Owner	17.09	6000000

- This is the highest price of car from the data and the details of the car
- helps to cater to high-value customers.