

**22.73K**

avg\_price

**56.40**

avg mpg

**25.50K**

avg\_mileage

**11K**

Total Cars

model

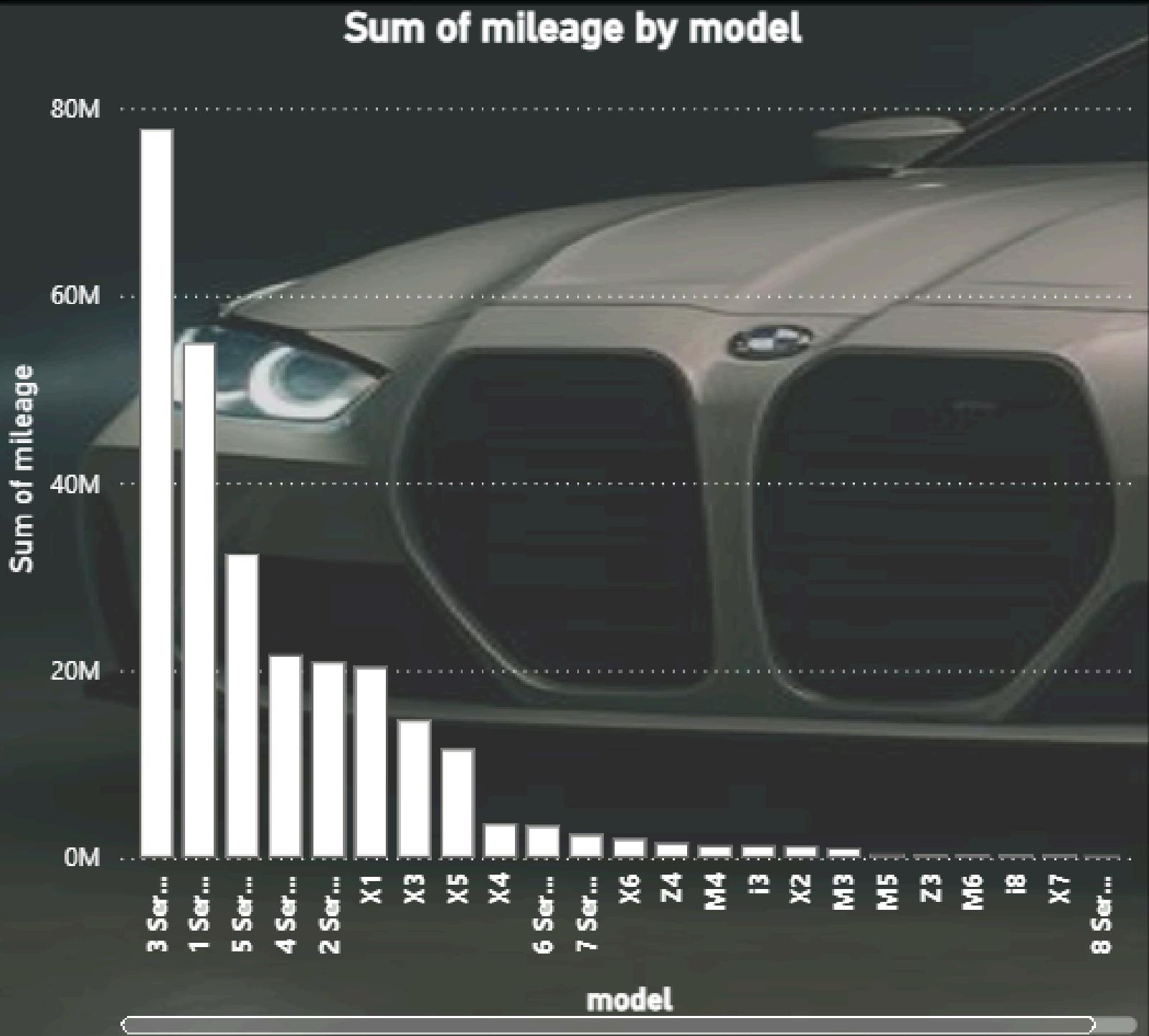
Z4

Z3

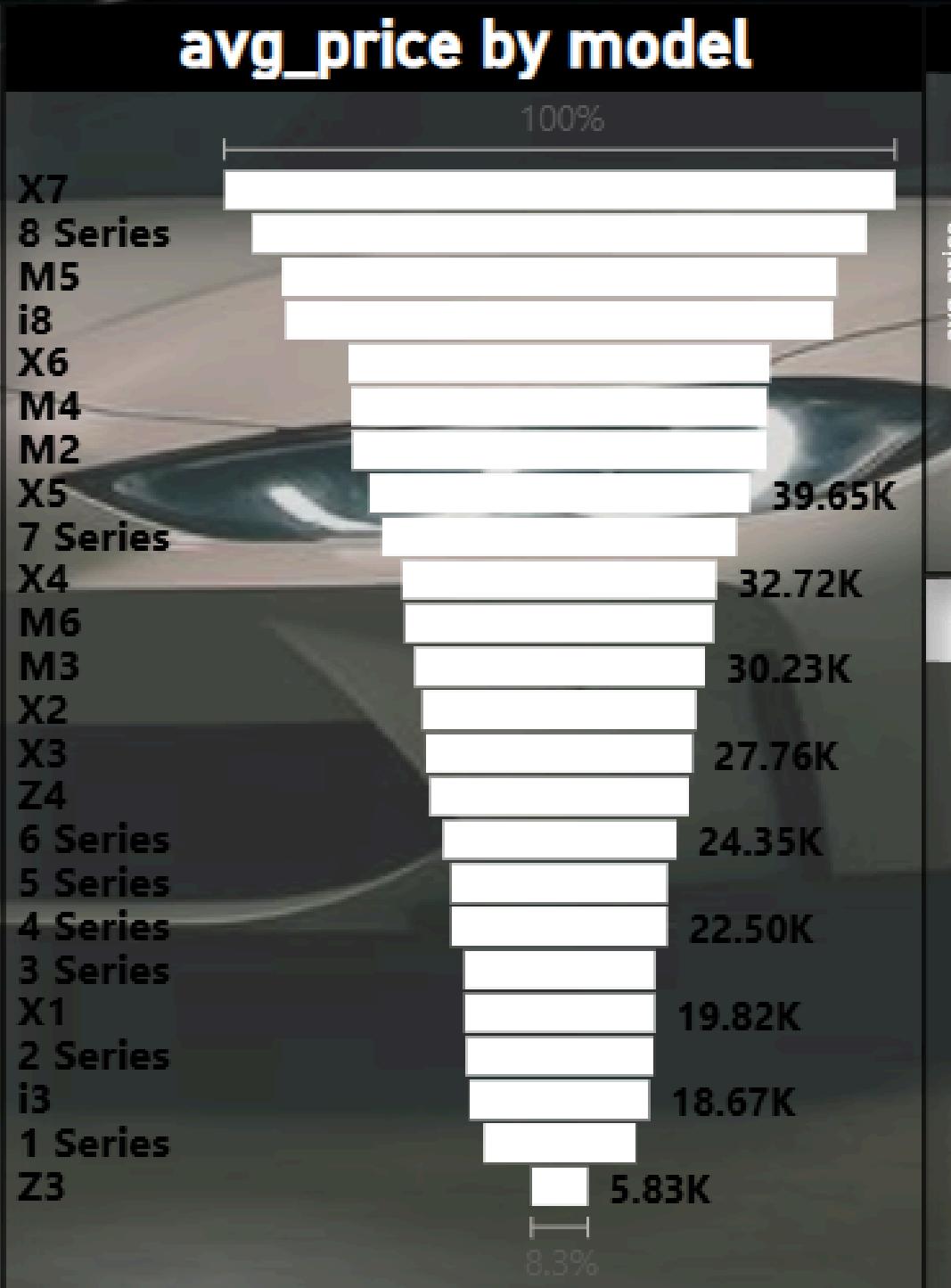
X7

X6

**Sum of mileage by model**



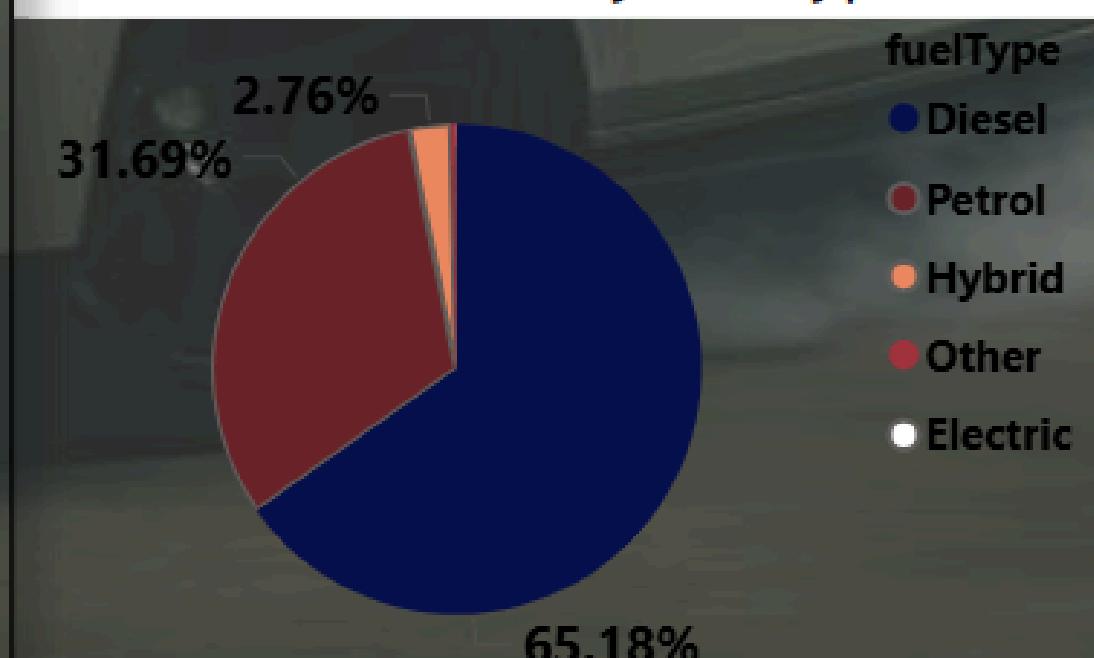
**avg\_price by model**



**avg\_price by year**



**Total Cars by fuelType**





 BMW

# MySQL Project !!

DIVYA THAKUR, Data Analyst

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DIVYA

-- 1) total no. of cars recorded in dataset?

```
select model, count((model))as no_of_cars,  
sum(count(model)) over(order by model)as total
```

| model    | no_of_cars | total |
|----------|------------|-------|
| 1 Series | 1969       | 1969  |
| 2 Series | 1229       | 3198  |
| 3 Series | 2443       | 5641  |
| 4 Series | 995        | 6636  |
| 5 Series | 1056       | 7692  |
| 6 Series | 108        | 7800  |
| 7 Series | 106        | 7906  |
| 8 Series | 39         | 7945  |
| i3       | 43         | 7988  |
| i8       | 17         | 8005  |
| M2       | 21         | 8026  |
| M3       | 27         | 8053  |
| M4       | 125        | 8178  |
| M5       | 29         | 8207  |
| M6       | 8          | 8215  |
| X1       | 804        | 9019  |
| X2       | 288        | 9307  |
| X3       | 551        | 9858  |
| X4       | 179        | 10037 |
| X5       | 468        | 10505 |
| X6       | 106        | 10611 |
| X7       | 55         | 10666 |
| Z3       | 7          | 10673 |
| Z4       | 108        | 10781 |

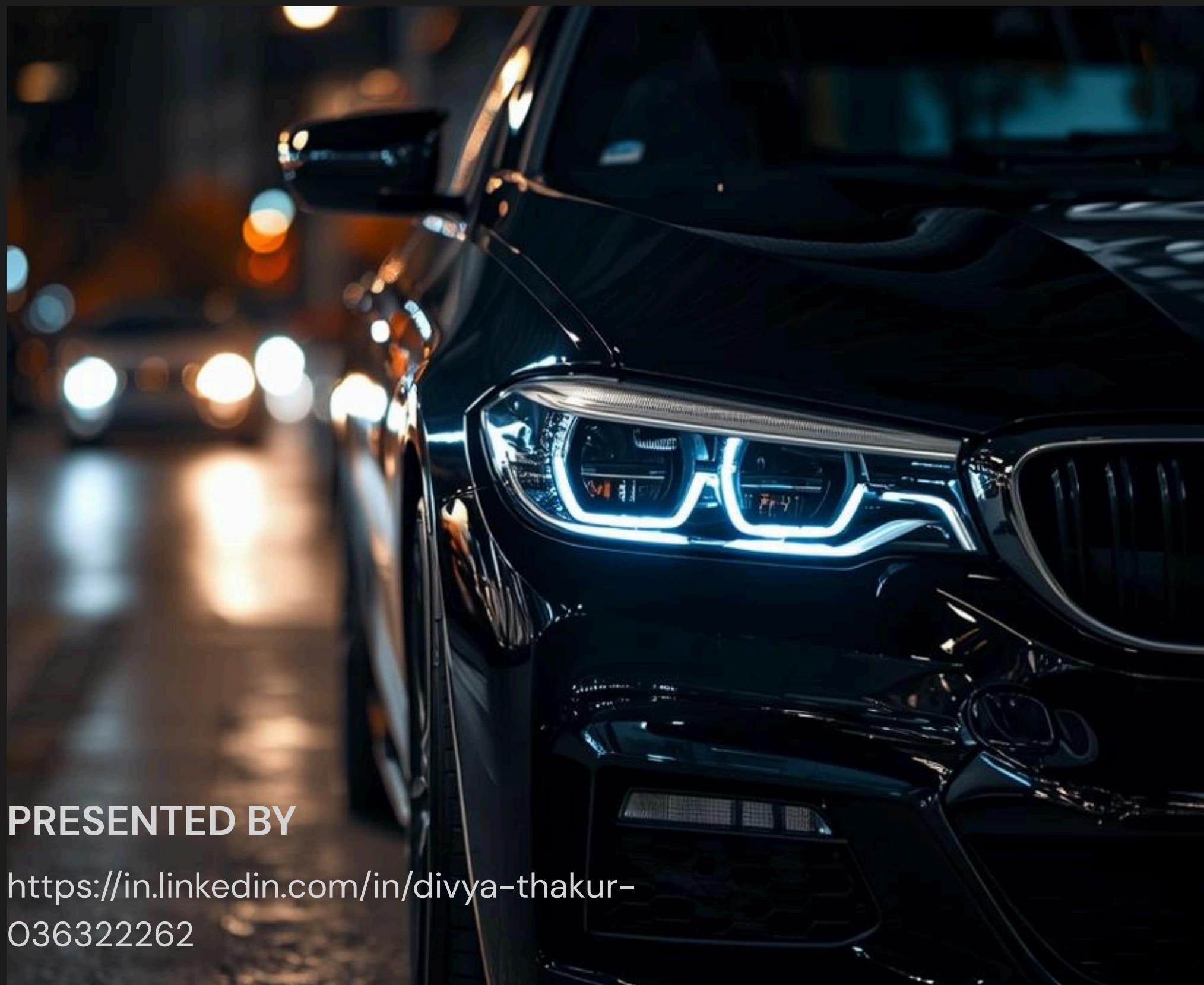
# BMW Project !!!



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# Project Timeline



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-- 2)list all unique available models?

`select distinct(model) from bmw;`

| model    |
|----------|
| 5 Series |
| 6 Series |
| 1 Series |
| 7 Series |
| 2 Series |
| 4 Series |
| X3       |
| 3 Series |
| X5       |
| X4       |
| i3       |
| X1       |

|          |
|----------|
| X2       |
| X6       |
| 8 Series |
| Z4       |
| X7       |
| M5       |
| i8       |
| M2       |
| M3       |
| M6       |
| Z3       |

# Key Benefits of BMW

-- 3) show how many cars are available per fuel type?

**SELECT**

**fueltype, COUNT(\*) AS cars\_available**

**FROM**

**bmw**

**GROUP BY fueltype;**

|   | <b>fueltype</b> | <b>cars_available</b> |
|---|-----------------|-----------------------|
| ▶ | Diesel          | 7027                  |
|   | Petrol          | 3417                  |
|   | Other           | 36                    |
|   | Hybrid          | 298                   |
|   | Electric        | 3                     |



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-- 4)find the minimum and maximum price in the dataset?

SELECT

MAX(price) AS max\_price, MIN(price) AS min\_price

FROM

bmw;

| max_price | min_price |
|-----------|-----------|
| 123456    | 1200      |



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Divya

-- 5) show all cars where price is missing or null?

SELECT

model, price

FROM

bmw

WHERE

price IS NULL AND price = 0;

| DESIGN GRID | GRID  | PICTURE | HTML |
|-------------|-------|---------|------|
| model       | price |         |      |

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-- 6) calculate the average price of each bmw model?

SELECT

model, ROUND(AVG(price), 2) AS avg\_price

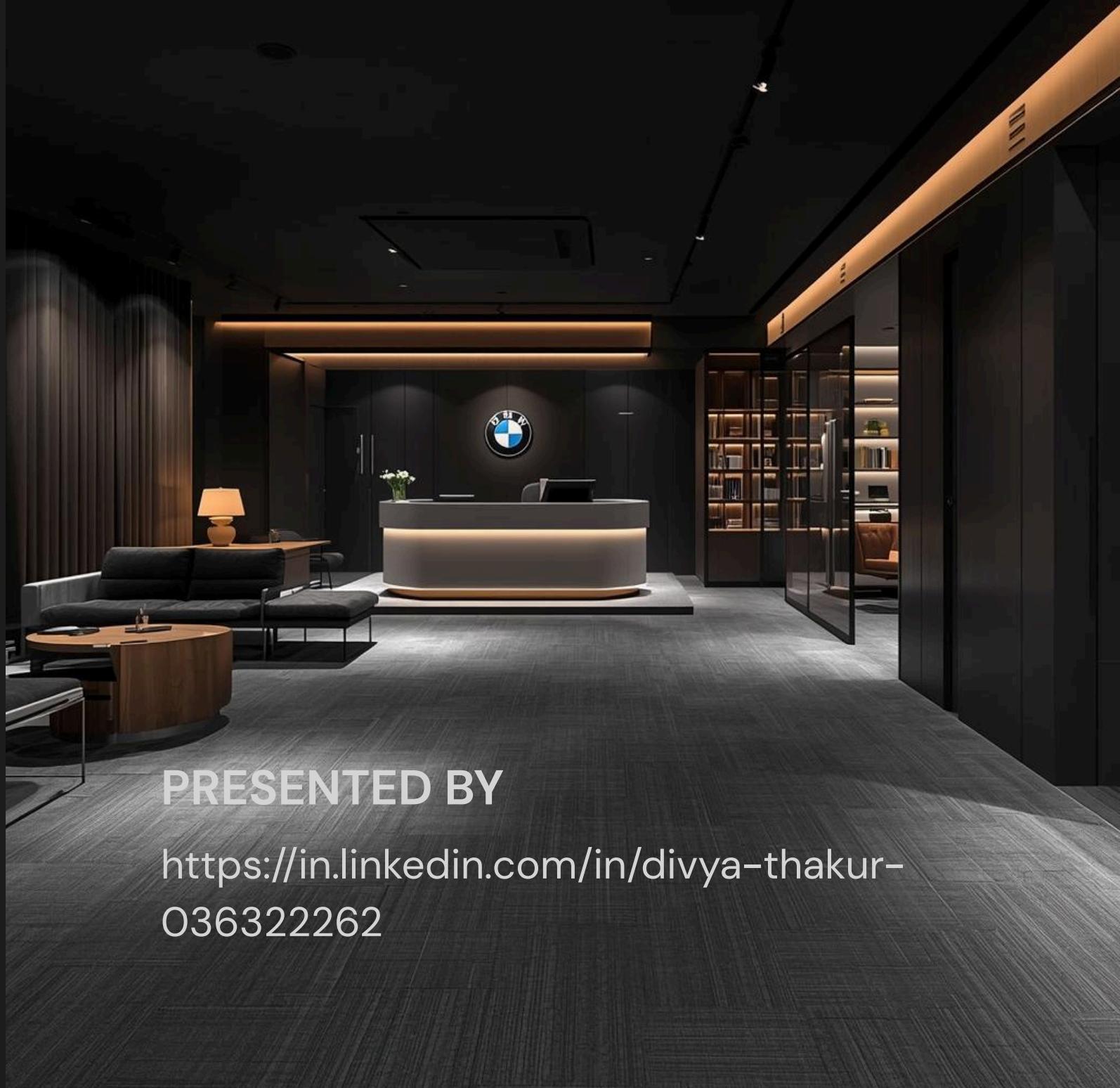
FROM

bmw

GROUP BY model;

| model    | avg_price |
|----------|-----------|
| 5 Series | 22537.43  |
| 6 Series | 24354.37  |
| 1 Series | 15821.67  |
| 7 Series | 36934.32  |
| 2 Series | 19539.37  |
| 4 Series | 22498.42  |
| X3       | 27758.31  |
| 3 Series | 19880.86  |
| X5       | 39651.20  |
| X4       | 32721.34  |
| i3       | 18667.12  |
| X1       | 19816.56  |

| model    | avg_price |
|----------|-----------|
| M4       | 43274.23  |
| X2       | 28486.66  |
| X6       | 43838.61  |
| 8 Series | 63997.79  |
| Z4       | 27001.94  |
| X7       | 69842.76  |
| M5       | 57760.00  |
| i8       | 57012.59  |
| M2       | 43140.33  |
| M3       | 30229.78  |
| M6       | 32190.00  |
| Z3       | 5826.43   |



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```
GROUP BY model;  
-- 7)find the most expensive model and its price?  
SELECT  
    model, MAX(price) AS most_expensive_model  
FROM  
    bmw  
GROUP BY model  
LIMIT 1;
```

| model    | most_expensive_model |
|----------|----------------------|
| 5 Series | 54845                |

– BMW



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-- 8)list models with an average mpg greater than 50?

SELECT

model, ROUND(AVG(mpg), 2) AS avg\_mpg

FROM

bmw

WHERE

(mpg) > 50

GROUP BY model;

- BMW

| model    | avg_mpg |
|----------|---------|
| 5 Series | 65.11   |
| 1 Series | 64.89   |
| 7 Series | 57.67   |
| 2 Series | 63.04   |
| 4 Series | 60.74   |
| X3       | 53.84   |
| 3 Series | 63.83   |
| X5       | 86.3    |
| X4       | 54      |
| i3       | 470.8   |
| X1       | 58.75   |
| i8       | 137.26  |
| 6 Series | 51.54   |
| X2       | 57.12   |



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-- 9)find the average engine size for deisel vs petrol?

SELECT DISTINCT

(fueltype), ROUND(AVG(engineSize), 2) AS avg\_engine\_type

FROM

bmw

GROUP BY fueltype;

| fueltype | avg_engine_type |
|----------|-----------------|
| Diesel   | 2.2             |
| Petrol   | 2.15            |
| Other    | 1.67            |
| Hybrid   | 1.72            |
| Electric | 0.33            |

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--- 10) retrieve all cars with automatic transmission and price above 20lp?

SELECT

```
COUNT(model) AS total, transmission
```

FROM

```
bmw
```

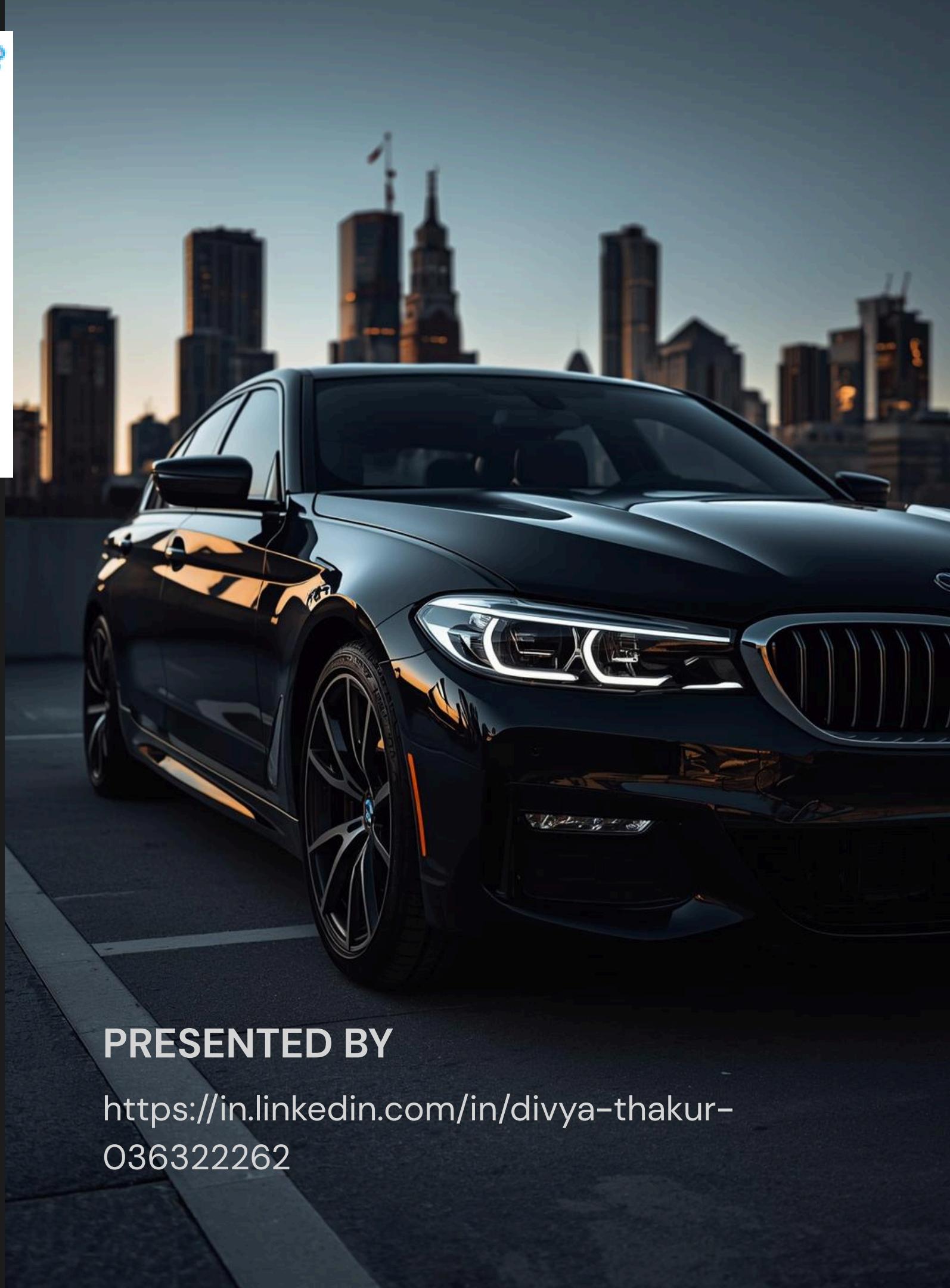
WHERE

```
price >= 20000
```

```
AND transmission = 'Automatic';
```

| total | transmission |
|-------|--------------|
| 1669  | Automatic    |

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AND transmission = 'Automatic'

-- 11) find which model year has the highest avg price?

SELECT

```
year, COUNT(model), AVG(price) AS max_avg_price
```

FROM

```
bmw
```

GROUP BY year

ORDER BY max\_avg\_price

LIMIT 5;

| year | COUNT(model) | max_avg_price |
|------|--------------|---------------|
| 2000 | 2            | 1624.5000     |
| 1999 | 4            | 3285.0000     |
| 1997 | 1            | 3950.0000     |
| 1998 | 1            | 3950.0000     |
| 2007 | 16           | 4830.5000     |



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-- 12)rank the top 5 model year has the highest avg price?

```
select model,avg(price),  
rank() over(order by avg(price) desc)  
from bmw group by model  
order by avg(price) desc limit 5;
```

| model    | avg(price) | rank() over(order by avg(price) desc) |
|----------|------------|---------------------------------------|
| X7       | 69842.7636 | 1                                     |
| 8 Series | 63997.7949 | 2                                     |
| M5       | 57760.0000 | 3                                     |
| i8       | 57012.5882 | 4                                     |
| X6       | 43838.6132 | 5                                     |

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-- 13)find avg mileage for each model?

SELECT

model, ROUND(AVG(mileage), 1) AS avg\_mileage

FROM

bmw

GROUP BY model;

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| model    | avg_mileage |
|----------|-------------|
| 5 Series | 30761.4     |
| 6 Series | 31685.2     |
| 1 Series | 27916.2     |
| 7 Series | 23687.3     |
| 2 Series | 17042.6     |
| 4 Series | 21786.5     |
| X3       | 26768.9     |
| 3 Series | 31858.4     |
| X5       | 24837.0     |
| X4       | 20409.9     |
| i3       | 30856.5     |
| X1       | 25390.6     |
| M4       | 10622.0     |
| X2       | 4426.2      |
| X6       | 19614.0     |
| 8 Series | 3832.9      |
| Z4       | 14817.6     |
| X7       | 5271.1      |
| ME       | 11752.0     |





```
-- 14)show all how tax value relates to engine size ?  
SELECT  
    model, enginesize, SUM(tax)  
FROM  
    bmw  
GROUP BY model , enginesize;  
-- 15)count how many cars have mileage above 60000 km and price below 15000?  
SELECT  
    model, mileage, SUM(price), COUNT(model)  
FROM  
    bmw  
WHERE  
    mileage > 60000 AND price < 15000  
GROUP BY model , mileage;
```

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| model    | enginesize | SUM(tax) |
|----------|------------|----------|
| 5 Series | 2          | 94165    |
| 6 Series | 2          | 2190     |
| 5 Series | 3          | 34760    |
| 1 Series | 1.5        | 80025    |
| 7 Series | 3          | 14755    |
| 2 Series | 1.5        | 58795    |
| 4 Series | 2          | 93925    |
| X3       | 2          | 63120    |
| 1 Series | 2          | 75165    |
| 2 Series | 2          | 80490    |
| 3 Series | 2          | 214360   |
| X5       | 2          | 3605     |
| X3       | 3          | 20960    |
| X4       | 2          | 12105    |
| i3       | 0.6        | 270      |
| 1 Series | 3          | 47340    |
| X1       | 2          | 97625    |
| 3 Series | 3          | 76710    |

| model    | mileage | SUM(price) | COUNT(model) |
|----------|---------|------------|--------------|
| 5 Series | 62794   | 16000      | 1            |
| X3       | 74907   | 15500      | 1            |
| X3       | 77823   | 15500      | 1            |
| X5       | 96213   | 19750      | 1            |
| X3       | 74852   | 18000      | 1            |
| X5       | 71626   | 21000      | 1            |
| 4 Series | 62943   | 15998      | 1            |
| 4 Series | 87597   | 15990      | 1            |
| 5 Series | 64194   | 16000      | 1            |
| X3       | 63000   | 36545      | 2            |
| X5       | 83269   | 24998      | 1            |
| X4       | 62862   | 20998      | 1            |
| 6 Series | 64215   | 17898      | 1            |
| X5       | 84512   | 18998      | 1            |
| X3       | 73312   | 16998      | 1            |
| X5       | 62839   | 19991      | 1            |
| X3       | 63589   | 16998      | 1            |
| 4 Series | 64473   | 16998      | 1            |

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