CAR DATA ANALYSIS REPORT

INTRODUCTION:

The given data set contains information regarding different cars with its respective company names, model, manufacturing year, kilometers driven, fuel used, seller type, transmission mode, owner type, mileage, engine, maximum power, torque, number of seats, name of each model.

The primary objective of this analysis is to uncover key insights, trends, and patterns within the dataset, providing valuable information for both consumers and industry stakeholders.

OBJECTIVE:

1. **Data Collection:**

The dataset included details such as company, model names, fuel type, mileage and more. The data was stored in a relational database.

2. **Data Cleaning and Preprocessing:**

Performed data cleaning tasks to handle missing values, duplicate records, and outliers, ensuring the dataset's integrity.

3. **SQL Queries:**

Designed and executed SQL queries to extract relevant information from the database. This involved a range of SQL operations, including SELECT, JOIN, GROUP BY, and aggregation functions.

DATA OVERVIEW:

COLOUMN NAME	DATA TYPE
Company	varchar(50)
Year	int
Selling_price	int
Km_driven	int
Fuel	text
Seller_type	text
Transmission	text
Owner	text
Mileage	int
Engine	int
Max_power	int
Torque	int
Seats	int
Name	text

QUESTIONS:

1.Which company has the most/least number of cars for reselling?

```
SELECT company, COUNT(*)
FROM car_table
GROUP BY company
ORDER BY COUNT(*) DESC;
```

2. Which company has the highest/lowest average max power?

```
SELECT company, AVG(max_power)
FROM car_table
GROUP BY company
ORDER BY AVG(max_power) DESC;
```

3. How does mileage impact the average selling price of cars?

```
SELECT mileage_set, AVG(selling_price)
FROM car_table
GROUP BY mileage_set;
```

4. Which is the most expensive car?

```
SELECT * FROM car_table
ORDER BY selling_price DESC LIMIT 1;
```

5. How does max power impact the mileage of cars?

```
SELECT max_power_cat, AVG(mileage)
FROM car_table
GROUP BY max_power_cat
ORDER BY AVG(mileage);
```

6. What is the relationship between max power, selling price, and mileage?

```
SELECT max_power_cat, AVG(selling_price), AVG(mileage)
FROM car_table
GROUP BY max_power_cat
ORDER BY AVG(selling_price);
```

7. How does km driven affect the selling price of vehicles?

```
SELECT km_driven_cat, AVG(selling_price)
FROM car_table
GROUP BY km_driven_cat;
```

8. What is the distribution of vehicles for sale based on km driven?

```
SELECT km_driven_cat, COUNT(*)
FROM car_table
GROUP BY km_driven_cat;
```

9. How does torque relate to the max power of vehicles?

```
SELECT torque_avg, AVG(max_power)
FROM car_table
GROUP BY torque_avg;
```

10. How does torque affect the selling price of vehicles?

```
SELECT torque_avg, AVG(selling_price)
FROM car_table
GROUP BY torque_avg;
```

11. Which seating capacity is most common among vehicles for sale?

```
SELECT seats, COUNT(*)
```

FROM car_table

GROUP BY seats;

12. Which seating capacity is associated with the highest average selling price?

SELECT seats, COUNT(*), AVG(selling_price)

FROM car_table

GROUP BY seats

ORDER BY AVG(selling_price) DESC

LIMIT 1;

13. How does transmission type affect the selling price of vehicles?

SELECT transmission, AVG(selling_price)

FROM car_table

GROUP BY transmission;

14.Which cars are with automatic transmission and petrol?

SELECT * FROM car_table

WHERE transmission = 'Automatic' and fuel = 'Petrol';

15.Which cars are with low mileage?

SELECT MIN(mileage) AS lowest_mileage FROM car_table;

CONCLUSION:

In this report, we explored the car_table dataset within the car_dekho database, uncovering valuable insights through SQL queries.

- Maruti has the most cars for reselling with 2093 cars.
  Opel, Ashok, and Lexus have the least cars, with 1 each.
- Isuzu has the highest average max power.
  Daewoo has the lowest average max power.
- Cars with lower mileage have a higher average selling price.
- Volvo XC90 T8 Excellence BSIV is the most expensive car.
- Higher power cars have a higher average selling price.
  Lower power cars have a lower average selling price.
- Higher power cars have lower mileage.
  Lower power cars have higher mileage.
- Vehicles with higher power have higher prices but lower mileage.
  Vehicles with lower power have lower prices but higher mileage.
- Vehicles with higher km driven have a lower price.
  Vehicles with lower km driven have a higher price
- Vehicles with higher km driven are for sale more than vehicles with lower km driven.
- Higher torque correlates with a higher average max power
  Higher torque correlates with a higher selling price
- The most vehicles for sale are 5-seaters.
- 7-seater vehicles have the highest average selling price.
- Automatic vehicles are more expensive than manual vehicles.
- 280 car data was identified with automatic transmission as well as petrol used.
- 9 was identified as the lowest mileage.