1.Introduction

In today's competitive automotive industry, effective management of car showrooms is crucial for success. A well-designed database management system (DBMS) can streamline operations, enhance customer experience, and improve decision-making processes. The Car Showroom Management System Database Project aims to develop a comprehensive solution to address the needs of car showroom owners, managers, salespersons, and customers.

1.1Abstract

In today's automotive industry, efficient management of inventory, sales, customer relationships, service scheduling, and employee administration is imperative for success. This project aims to develop a robust and user-friendly platform utilizing database management technology to streamline processes, enhance customer satisfaction, and optimize business performance.

2. Aims and Objectives

The Car Showroom Management System Database Project aims to revolutionize the operations of car showrooms by providing a comprehensive and efficient solution for managing various aspects of the business. The primary aim is to enhance efficiency by automating manual processes and centralizing data management. By utilizing a robust database management system, the project seeks to streamline operations such as inventory management, sales tracking, service scheduling, and employee administration. This automation not only saves time but also ensures data accuracy and integrity, minimizing errors and inconsistencies in data entry and retrieval.

Furthermore, the project aims to improve customer satisfaction by providing a seamless and personalized experience throughout the car buying journey. By capturing and managing customer information effectively, including preferences and feedback, the system enables car showrooms to tailor their services to individual customer needs. Additionally, decision support tools and analytics capabilities are integrated into the system to empower managers and stakeholders to make informed decisions and strategic plans based on insightful reports and analysis.

3.Hardware/Software Requirement

3.1 Hardware Requirement

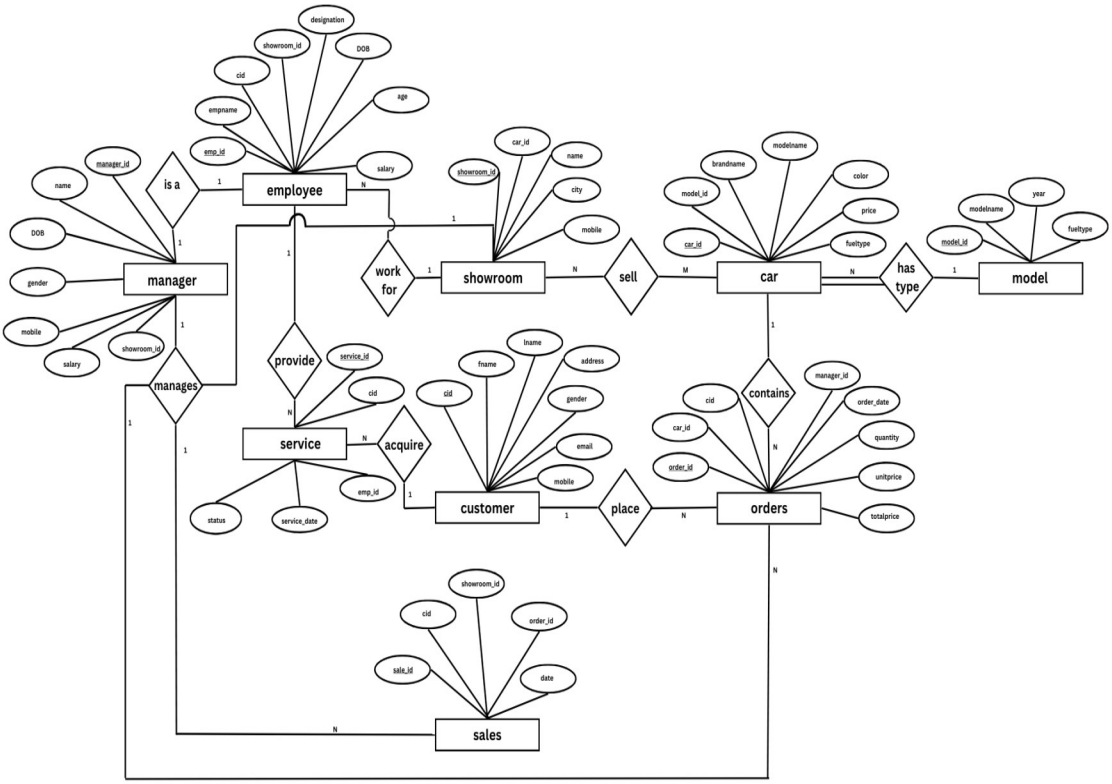
- Processor: Multi-core processor (Intel Core i5 or equivalent)
- RAM: Minimum 8 GB RAM (16 GB recommended for optimal performance)
- Storage: SSD storage recommended for faster data

3.2 Software Requirement

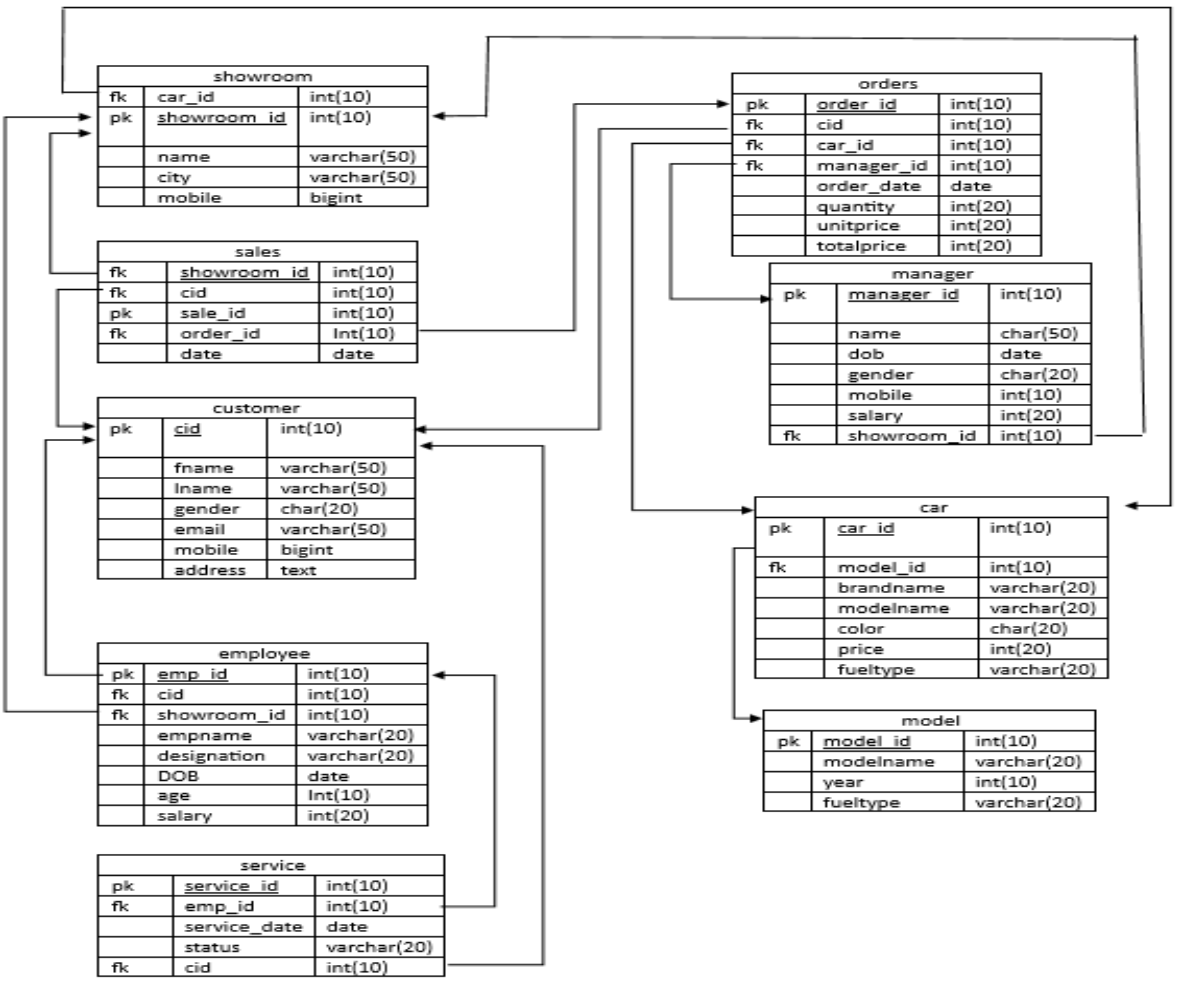
- Operating System: Windows server
- Database management system: MariaDb

4. Database Design

4.1 ER-Diagram



4.2 Schema Diagram



5.Queries and Results

1.Display the car information based on the price in ascending order.

Select *from car ORDER BY price;

```
MariaDB [showroom1]> select *from car ORDER BY price;
+--------+----------+----------------+-----------+--------+---------+----------+
| car_id | model_id | brandname      | modelname | color  | price   | fueltype |
+--------+----------+----------------+-----------+--------+---------+----------+
|    222 |      103 | Toyota Hilux   | CNG       | Brown  |  900000 | Diesel   |
|    211 |      102 | Toyota Glanza  | Glanza    | Red    | 1000000 | Petrol   |
|    244 |      104 | Toyota Alphard | DTC       | White  | 1100000 | Petrol   |
|    233 |      103 | Toyota Hilux   | AMT       | Red    | 1300000 | Diesel   |
|    200 |      101 | Toyota Camry   | Camry     | Silver | 4500000 | Petrol   |
+--------+----------+----------------+-----------+--------+---------+----------+
```

2.Find all employees who are working for one specific showroom.

Select *from employee where showroom=‘1’;

```
MariaDB [showroom1]> select *from employee where showroom_id='1';
+--------+------+-------------+---------+----------------------+------------+------+--------+
| emp_id | cid  | showroom_id | empname | designation          | DOB        | age  | salary |
+--------+------+-------------+---------+----------------------+------------+------+--------+
|    551 |  911 |           1 | Srujan  | Service technician   | 1999-02-06 |   29 |  20000 |
|    552 |  913 |           1 | Pranam  | Finance  Manager     | 1995-02-12 |   32 |  30000 |
|    553 |  912 |           1 | Sharath | Administrative staff | 1998-08-02 |   30 |  25000 |
|    554 |  914 |           1 | Karan   | Service technician   | 1998-11-05 |   37 |  35000 |
|    555 |  915 |           1 | Charan  | Service technician   | 1994-08-12 |   31 |  33000 |
+--------+------+-------------+---------+----------------------+------------+------+--------+
5 rows in set (0.024 sec)

MariaDB [showroom1]> select *from employee where showroom_id='3';
+--------+------+-------------+---------+--------------------+------------+------+--------+
| emp_id | cid  | showroom_id | empname | designation        | DOB        | age  | salary |
+--------+------+-------------+---------+--------------------+------------+------+--------+
|    556 |  914 |           3 | Ganesh  | Service technician | 1994-12-12 |   31 |  28000 |
+--------+------+-------------+---------+--------------------+------------+------+--------+
```

3.Count the total number of orders made by the customers.

Select cid, COUNT(order_id) as total_orders FROM orders GROUP BY cid;

```
MariaDB [showroom1]> select cid,COUNT(order_id) as total_orders FROM orders GROUP BY cid;
+------+--------------+
| cid  | total_orders |
+------+--------------+
|  911 |            1 |
|  912 |            2 |
+------+--------------+
```

4.Display the customer details and their corresponding total spent amount, where the total spent amount for each customer is greater than 2500000.

Select cid, SUM(totalprice) AS total_spent FROM orders GROUP BY cid HAVING SUM(total_price)>2500000;

```
MariaDB [showroom1]> select cid,SUM(totalprice) AS total_spent FROM orders GROUP BY cid HAVING SUM(totalprice)>2500000;
+------+-------------+
| cid  | total_spent |
+------+-------------+
|  911 |     4500000 |
|  912 |     5000000 |
+------+-------------+
```

5. Retrieve the order id, order date and customer first and last name who have placed orders.

Select o.order_id, o.order_date, c.fname, c.lname FROM orders o JOIN customer c ON o.cid=c.cid;

```
MariaDB [showroom1]> select o.order_id, o.order_date,c.fname,c.lname FROM orders o JOIN customer c ON o.cid=c.cid;
+----------+------------+-------+-------+
| order_id | order_date | fname | lname |
+----------+------------+-------+-------+
|     1100 | 2023-03-11 | Kiran | Raj   |
|     1200 | 2023-03-01 | Kavya | S     |
|     1300 | 2023-12-09 | Kavya | S     |
+----------+------------+-------+-------+
```

6.Display the customer details who acquired the services from the showroom.

Select cid, fname, lname from customer where cid IN(select distinct cid from service where service_date NOT IN(select service_date from service where status='Pending'));

```
MariaDB [showroom1]> select cid,fname,lname from customer where cid IN(select distinct cid from service where service_date NOT IN(select service_date from
service where status='Pending'));
+-----+---------+-------+
| cid | fname   | lname |
+-----+---------+-------+
| 911 | Kiran   | Raj   |
| 914 | Akash   | Kumar |
| 915 | Shreyas | KR    |
+-----+---------+-------+
```

7.List the details of car with their average price.

Select car_id, brandname, modelname, AVG(price) from car GROUP BY car_id;

```
MariaDB [showroom1]> SELECT car_id,brandname,modelname, AVG(price) from car GROUP BY car_id;
+--------+---------------+-----------+--------------+
| car_id | brandname     | modelname | AVG(price)   |
+--------+---------------+-----------+--------------+
|    200 | Toyota Camry  | Camry     | 4500000.0000 |
|    211 | Toyota Glanza | Glanza    | 1000000.0000 |
|    222 | Toyota Hilux  | CNG       |  900000.0000 |
|    233 | Toyota Hilux  | AMT       | 1300000.0000 |
|    244 | Toyota Alphard | DTC      | 1100000.0000 |
+--------+---------------+-----------+--------------+
```

6.Conclusion

The Car Showroom Management System Database Project presents a comprehensive solution tailored to the needs of modern car showrooms. By harnessing the power of database management technology, the project aims to streamline operations, enhance customer satisfaction, and optimize business performance.

Throughout the project, our focus has been on developing a robust platform that centralizes and automates key processes within a car showroom. From inventory management and sales tracking to service scheduling and employee administration, every aspect of the business is carefully integrated into the system to ensure seamless operation and efficiency.

7.Future Enhancement

1.Enhanced Customer engagement: Develop mobile applications or web portals for customers to access personalized services, schedule appointments, track vehicle status, and receive notifications. Implement features such as virtual showroom tours, augmented reality (AR) vehicle customization, and online vehicle reservations to enhance the overall customer experience

2.Customer Loyalty Programs: Implement customer loyalty programs and rewards schemes to incentivize repeat business and foster customer loyalty. Offer personalized incentives, discounts, and rewards based on customer preferences, purchase history, and engagement level to encourage customer retention and advocacy.

3. Customer Feedback Forms: Develop a feedback form that customers can fill out after purchasing a vehicle or receiving a service. Include questions about their overall experience, satisfaction with the vehicle, and suggestions for improvement.

4.Rating System: Implement a rating system where customers can rate their experience on a scale of 1 to 5 stars. This can be applied to various aspects such as the sales process, vehicle quality, after-sales service, etc.

5. Review Section: Allow customers to leave detailed reviews about their experience. This can help future buyers make informed decisions and provide valuable insights for the showroom management to improve their services.

6. Feedback Analysis: Set up a system to analyze the feedback received from customers. Look for common trends, recurring issues, or positive feedback that can be highlighted. This analysis can guide decision-making and improvements within the showroom.

8.References

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