

CAR RENTAL MANAGEMENT SYSTEM

ABSTRACT

Our Aim is to design and create a data management System for a car rental company. This enables admin can rent a vehicle that can be used by a customer. This system increases customer retention and simplify vehicle and staff in an efficient way.

Car rental management system is a project which aims in developing a computerized system to maintain all the daily work of Car Rental . A car rental management system is an autonomous system that will preserve the records of all the cars available, cars rented, etc. The user can rent car based on its efficiency, performance, brand or cost. The dealer can make a lot of use of this system by providing the cars.

This Car rental management system with the integration of several modules provides an abstract data for the administrator and user of the system. It allows the booking of cars by the customers and the business could easily schedule and manage the request of the customers.

objective

The Main Objective of the Car rental Management System is to make it easy for the business owners to manage all their vehicles in one place. The business owner status. As a result, car rental management system reduces operating costs and also saves time.

STRUCTURE OF TABLES

Cars Table:

```
MariaDB [emp]> desc cars;
```

Field	Type	Null	Key	Default	Extra
Car_id	int(11)	YES		NULL	
Model	varchar(20)	YES		NULL	
Year	int(11)	YES		NULL	
Category	varchar(20)	YES		NULL	

4 rows in set (0.241 sec)

Employee Table:

```
MariaDB [emp]> desc Employee;
```

Field	Type	Null	Key	Default	Extra
Employee_Id	int(11)	YES		NULL	
Employee_Number	int(11)	YES		NULL	
First_Name	varchar(20)	YES		NULL	
Last_Name	varchar(20)	YES		NULL	
salary	int(11)	YES		NULL	

5 rows in set (0.011 sec)

Customer Table:

```
MariaDB [emp]> desc customer;
```

Field	Type	Null	Key	Default	Extra
cust_id	int(11)	YES		NULL	
Cust_Name	varchar(20)	YES		NULL	
Address	varchar(20)	YES		NULL	
City	varchar(20)	YES		NULL	
Phone_no	bigint(20)	YES		NULL	
email	varchar(30)	YES		NULL	

```
6 rows in set (0.010 sec)
```

Rental_Order Table:

```
MariaDB [emp]> desc rental_orders;
```

Field	Type	Null	Key	Default	Extra
Order_id	int(11)	YES		NULL	
cust_id	int(11)	YES		NULL	
employee_id	int(11)	YES		NULL	
car_id	int(11)	YES		NULL	
Rent_startdate	date	YES		NULL	
Rent_enddate	date	YES		NULL	

```
6 rows in set (0.030 sec)
```

Rental Rates Table:

```
MariaDB [emp]> desc rental_rates;
```

Field	Type	Null	Key	Default	Extra
Order_id	int(11)	YES		NULL	
Rates	bigint(20)	YES		NULL	

2 rows in set (0.018 sec)

```
MariaDB [emp]> ALTER TABLE RENTAL_RATES ADD MAINTENANCE INT;  
Query OK, 0 rows affected (0.027 sec)  
Records: 0 Duplicates: 0 Warnings: 0
```

```
MariaDB [emp]> DESC RENTAL_RATES;
```

Field	Type	Null	Key	Default	Extra
Order_id	int(11)	YES		NULL	
Rates	bigint(20)	YES		NULL	
MAINTENANCE	int(11)	YES		NULL	

3 rows in set (0.021 sec)

ALTER WITH ADD COLUMN

```
MariaDB [emp]> ALTER TABLE RENTAL_ORDERS ADD RATES bigint;
Query OK, 0 rows affected (0.024 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [emp]> desc rental_orders;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Order_id       | int(11)       | YES  |     | NULL    |       |
| cust_id        | int(11)       | YES  |     | NULL    |       |
| employee_id    | int(11)       | YES  |     | NULL    |       |
| car_id         | int(11)       | YES  |     | NULL    |       |
| Rent_startdate | date          | YES  |     | NULL    |       |
| Rent_enddate   | date          | YES  |     | NULL    |       |
| RATES          | bigint(20)    | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.015 sec)
```

The Basic syntax of an ALTER TABLE command to add a New Column in an already existing table is as follows:

- **ALTER TABLE table_name ADD column_name datatype;**

ALTER WITH MODIFY COLUMN

```
MariaDB [emp]> alter table rental_orders modify rates varchar(20);
Query OK, 0 rows affected (0.048 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [emp]> desc rental orders;
ERROR 1146 (42S02): Table 'emp.rental' doesn't exist
MariaDB [emp]> desc rental order;
ERROR 1064 (42000): You have an error in your SQL syntax; check the
MariaDB [emp]> desc rental_order;
ERROR 1146 (42S02): Table 'emp.rental_order' doesn't exist
MariaDB [emp]> desc rental_orders;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Order_id | int(11) | YES | | NULL | |
| cust_id | int(11) | YES | | NULL | |
| employee_id | int(11) | YES | | NULL | |
| car_id | int(11) | YES | | NULL | |
| Rent_startdate | date | YES | | NULL | |
| Rent_enddate | date | YES | | NULL | |
| rates | varchar(20) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.016 sec)
```

The Modify keyword modifies the size, datatype and constraints of the existing field in SQL table. Syntax are as follows:

- **ALTER TABLE table_name MODIFY column_name datatype constraint;**

ALTER WITH DROP COLUMN

```
MariaDB [emp]> alter table rental_orders drop rates;
Query OK, 0 rows affected (0.027 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [emp]> esc rental_orders;
ERROR 1064 (42000): You have an error in your SQL syntax; check
MariaDB [emp]> desc rental_orders;
```

Field	Type	Null	Key	Default	Extra
Order_id	int(11)	YES		NULL	
cust_id	int(11)	YES		NULL	
employee_id	int(11)	YES		NULL	
car_id	int(11)	YES		NULL	
Rent_startdate	date	YES		NULL	
Rent_enddate	date	YES		NULL	

```
6 rows in set (0.017 sec)
```

The Basic Syntax of an ALTER TABLE command to Drop column in an existing table are as follows

- **ALTER TABLE table_name DROP column_name**

CONTENTS OF TABLES

CARS:

```
MariaDB [emp]> SELECT * FROM CARS;
```

Car_id	Model	Year	Category
1	MERCEDEZ BENZ	2008	SEDAN
2	SKODA OCTAVIA	2006	SEDAN
3	RENAULT MEGANE	2012	SUV
4	FORD MUSTANG	2007	CONVERTIBLE
5	TATA NEXON	2017	SUV
6	AUDI A6	2018	SEDAN
7	TATA TIGOR	2019	EV
8	TESLA MODEL S	2021	EV
9	BMW XM	2016	SUV
10	AUDI RS	2015	SUV
11	TESLA MODEL X	2020	EV
12	BMW M4	2013	CONVERTIBLE
13	FORD EDGE	2009	SUV
14	FORD GT	2010	CONVERTIBLE
15	SKODA SLAVIA	2011	SEDAN
16	RENAULT DUSTER	2018	SUV
17	TATA ALTROZ	2020	SEDAN
18	MERCEDEZ AMZ	2016	SEDAN
19	LAMBORGINI URUS	2021	SUV
20	BMW XS	2009	SEDAN
21	LAMBORGINI GALLARDO	2006	CONVERTIBLE
22	BMW I4	2021	EV

22 rows in set (0.000 sec)

EMPLOYEE:

```
MariaDB [emp]> SELECT * FROM EMPLOYEE;
```

Employee_Id	Employee_Number	First_Name	Last_Name	salary
1001	7673	VIRAJ	SHEVDE	30000
1002	7384	ROHAN	SHINDE	28000
1003	6893	NILESH	PANDEY	25000
1004	9836	OMKAR	MITAKE	28000
1005	3947	YASH	BHOSALE	21000
1006	5288	RANDEEP	SINGH	23000
1007	8762	SUSHANT	GADE	25000
1008	2638	VIDYA	SHETTY	60000
1009	6384	SUJAY	SINGH	20000
1010	5738	DHIRAJ	AMIN	35000
1011	9839	KAVYA	NAIR	32000
1012	5384	ROHIT	BHANDARI	40000
1013	2394	TANMAY	BHAT	45000
1014	6384	GOVIND	BHASKAR	50000
1015	4379	BHAVYA	GANDHI	47000
1016	2339	NEHA	SONI	39000
1017	6660	VAIBHAV	IKKE	28000
1018	7722	SHREYA	IYER	45000
1019	5503	RIDHI	NAMBIAR	40000
1020	8883	RAHUL	MHATRE	50000

```
20 rows in set (0.000 sec)
```

CUSTOMER:

```
MariaDB [emp]> select * from customer;
```

cust_id	Cust_Name	Address	City	Phone_no	email
101	BHASKAR NARAYAN	GOVIND ROAD	THANE	7497839	narayan@gmail.com
102	UDIT MITTAL	LOKMANYA NAGAR	PUNE	6383799	MITTAL@gmail.com
103	MAHESH BHUPATTI	MIRA ROAD	MUMBAI	537748	bhupati@gmail.com
104	AMAN GUPTA	GANDHI NAGAR	DELHI	68886385	amangupta@gmail.com
105	SHRUTI SINGH	ARUNA NAHAR	LUCKNOW	4757477	NULL
106	ASHISH MAURYA	LALA NAGAR	DELHI	537328	NULL
107	NEHA DUPIA	ARVIND ROAD	MUMBAI	3567736	Neh_dup@gmail.com
108	ASHOK LEYLAND	GANDHI NAGAR	PUNE	2737353	Leyland@gmail.com
109	BAICHAND BHUTIA	DATTA ROAD	CHENNAI	5778823	NULL
110	SIEGFREID MATHEWS	BORIS CHURCH	GOA	7738394	Mathews@gmail.com
111	JAMAL MUSIALA	RAMIZ MOSQUE	LUCKNOW	7499468	NULL
112	YUSUF PATHAN	NAWAZ ROAD	HYDERABAD	7593998	Yusuf@gmail.com
113	DHARMESH GANDHI	CARWA NAGAR	AHMEDABAD	6399483	dharmesh@gmail.com
114	VIDYUT NARAYAN	NOIDA ROAD	NOIDA	34848090	Vidyut@gmail.com
115	PAWAN RATHORE	JAI NAGAR	JAIPUR	8990098833	pRATHORE@gmail.com
116	PIYUSH BHANSAL	PALLAV TOWER	BANGALORE	10048883	piybansal@gmail.com
117	PARAG DESAI	GANHI NAGAR	DELHI	8883994	Pdesai@gmail.com
118	RAVEENA KHANNA	JUHU	MUMBAI	7733843	Khanna@gmail.com
119	POOJA NAIR	NANDA PALACE	CHENNAI	738843	NULL
120	VISHAL KANOJIA	AZAD NAGAR	CHENNAI	555537737	Kanaojia@gmail.com

```
20 rows in set (0.000 sec)
```

RENTAL ORDERS:

```
MariaDB [emp]> Select*from rental_ORDERS;
```

Order_id	cust_id	employee_id	car_id	Rent_startdate	Rent_enddate
9001	103	1010	7	2022-04-17	2022-06-13
9002	119	1003	20	2022-05-16	2022-07-11
9003	104	1010	13	2022-04-07	2022-05-14
9004	111	1005	4	2022-03-09	2022-06-12
9005	114	1016	21	2022-05-16	2022-09-17
9006	108	1006	18	2022-04-11	2022-08-18
9007	116	1014	15	2022-08-21	2022-10-11
9008	106	1018	9	2022-05-27	2022-09-19
9009	112	1007	19	2022-04-11	2022-08-07
9010	101	1013	5	2022-08-13	2022-09-16
9011	117	1015	22	2022-07-13	2022-11-18
9012	115	1011	1	2022-05-14	2022-08-06
9013	110	1014	17	2022-06-14	2022-08-25
9014	118	1012	3	2022-04-18	2022-07-15
9015	120	1020	14	2022-03-18	2022-07-19
9016	109	1010	10	2022-06-08	2022-10-07
9017	102	1004	6	2022-06-04	2022-07-17
9018	113	1019	11	2022-05-18	2022-09-09
9019	105	1016	8	2022-04-02	2022-09-07
9020	107	1001	2	2022-04-23	2022-11-11

```
20 rows in set (0.001 sec)
```

RENTAL RATES:

```
MariaDB [emp]> SELECT * FROM RENTAL_RATES;
```

Order_id	Rates	MAINTENANCE
9001	40000	3500
9002	52000	3000
9003	45000	2500
9004	60000	4000
9005	65000	5500
9006	55000	4000
9007	35000	3000
9008	45000	2000
9009	52000	4200
9010	20000	800
9011	43000	2700
9012	38000	3400
9013	51000	2100
9014	41000	1600
9015	48000	3600
9016	54000	4200
9017	19000	1000
9018	46000	4100
9019	64000	5500
9020	80000	7500

```
20 rows in set (0.001 sec)
```

ADDING CONSTRAINT AFTER CREATING TABLE

```
MariaDB [emp]> ALTER TABLE CUSTOMER ADD CONSTRAINT uk_cust UNIQUE(Phone_no,email);
Query OK, 0 rows affected, 1 warning (0.024 sec)
Records: 0  Duplicates: 0  Warnings: 1

MariaDB [emp]> desc customer;
```

Field	Type	Null	Key	Default	Extra
cust_id	int(11)	YES		NULL	
Cust_Name	varchar(20)	YES		NULL	
Address	varchar(20)	YES		NULL	
City	varchar(20)	YES		NULL	
Phone_no	bigint(20)	YES	MUL	NULL	
email	varchar(30)	YES		NULL	

```
6 rows in set (0.014 sec)
```

**Syntax: ALTER TABLE table_name CONSTRAINT
constraint_name (column_name)**

```
MariaDB [emp]> desc customer;
```

Field	Type	Null	Key	Default	Extra
cust_id	int(11)	NO	PRI	NULL	
Cust_Name	varchar(20)	YES		NULL	
Address	varchar(20)	YES		NULL	
City	varchar(20)	YES		NULL	
Phone_no	bigint(20)	YES	MUL	NULL	
email	varchar(30)	YES		NULL	

CLAUSES, OPERATORS AND FUNCTIONS

WHERE CLAUSE AND COMPARISON OPERATORS:

1. FIND THE EMPLOYEE WHOSE ID IS 1010.

```
MariaDB [emp]> SELECT * FROM EMPLOYEE WHERE EMPLOYEE_ID =1010;
```

Employee_Id	Employee_Number	First_Name	Last_Name	salary
1010	5738	DHIRAJ	AMIN	35000

```
1 row in set (0.010 sec)
```

2. FIND CUSTOMERS WHO LIVE IN DELHI.

```
MariaDB [emp]> SELECT * FROM CUSTOMER WHERE CITY="DELHI"
-> ;
```

cust_id	Cust_Name	Address	City	Phone_no	email
104	AMAN GUPTA	GANDHI NAGAR	DELHI	68886385	amangupta@gmail.com
106	ASHISH MAURYA	LALA NAGAR	DELHI	537328	NULL
117	PARAG DESAI	GANHI NAGAR	DELHI	8883994	Pdesai@gmail.com

```
3 rows in set (0.013 sec)
```

3. FIND EMPLOYEE WHOSE SALARY IS GREATER THAN 35000.

```
MariaDB [emp]> SELECT * FROM EMPLOYEE WHERE SALARY>35000;
```

Employee_Id	Employee_Number	First_Name	Last_Name	salary
1008	2638	VIDYA	SHETTY	60000
1012	5384	ROHIT	BHANDARI	40000
1013	2394	TANMAY	BHAT	45000
1014	6384	GOVIND	BHASKAR	50000
1015	4379	BHAVYA	GANDHI	47000
1016	2339	NEHA	SONI	39000
1018	7722	SHREYA	IYER	45000
1019	5503	RIDHI	NAMBIAR	40000
1020	8883	RAHUL	MHATRE	50000

```
9 rows in set (0.001 sec)
```

4. FIND EMPLOYEES WHOSE SALARY IS LESS THAN 25000.

```
MariaDB [emp]> SELECT * FROM EMPLOYEE WHERE SALARY<25000;
```

Employee_Id	Employee_Number	First_Name	Last_Name	salary
1005	3947	YASH	BHOSALE	21000
1006	5288	RANDEEP	SINGH	23000
1009	6384	SUJAY	SINGH	20000

```
3 rows in set (0.001 sec)
```

IN, NOT IN, BETWEEN, LIKE and NOT LIKE OPERATORS:

1.FIND CUSTOMERS WHO LIVE IN MUMBAI AND PUNE.

```
MariaDB [emp]> SELECT * FROM CUSTOMER WHERE CITY IN("MUMBAI","PUNE");
```

cust_id	Cust_Name	Address	City	Phone_no	email
102	UDIT MITTAL	LOKMANYA NAGAR	PUNE	6383799	MITTAL@gmail.com
103	MAHESH BHUPATTI	MIRA ROAD	MUMBAI	537748	bhupati@gmail.com
107	NEHA DUPIA	ARVIND ROAD	MUMBAI	3567736	Neh_dup@gmail.com
108	ASHOK LEYLAND	GANDHI NAGAR	PUNE	2737353	Leyland@gmail.com
118	RAVEENA KHANNA	JUHU	MUMBAI	7733843	Khanna@gmail.com

```
5 rows in set (0.009 sec)
```

2. FIND ADDRESS OF CUSTOMER WHO DO NOT LIVE IN MUMBAI AND PUNE.

```
MariaDB [emp]> SELECT Address FROM customer WHERE CITY NOT IN("MUMBAI","PUNE");
```

Address
GOVIND ROAD
GANDHI NAGAR
ARUNA NAHAR
LALA NAGAR
DATTA ROAD
BORIS CHURCH
RAMIZ MOSQUE
NAWAZ ROAD
CARWA NAGAR
NOIDA ROAD
JAI NAGAR
PALLAV TOWER
GANHI NAGAR
NANDA PALACE
AZAD NAGAR

```
15 rows in set (0.000 sec)
```

3. FIND THE FIRST NAME, LAST NAME AND SALARY OF EMPLOYEE WHOSE SALARY IS BETWEEN 40000-60000.

```
MariaDB [emp]> SELECT FIRST_NAME, LAST_NAME, SALARY FROM EMPLOYEE WHERE SALARY BETWEEN 40000 AND 60000;
```

FIRST_NAME	LAST_NAME	SALARY
VIDYA	SHETTY	60000
ROHIT	BHANDARI	40000
TANMAY	BHAT	45000
GOVIND	BHASKAR	50000
BHAVYA	GANDHI	47000
SHREYA	IYER	45000
RIDHI	NAMBIAR	40000
RAHUL	MHATRE	50000

8 rows in set (0.000 sec)

4. FIND A CAR FROM TATA COMPANY.

```
MariaDB [emp]> SELECT * FROM CARS WHERE MODEL LIKE "TATA%";
```

Car_id	Model	Year	Category
5	TATA NEXON	2017	SUV
7	TATA TIGOR	2019	EV
17	TATA ALTROZ	2020	SEDAN

3 rows in set (0.003 sec)

5. FIND A CAR FROM TATA COMPANY EXCLUDING NEXON.

```
MariaDB [emp]> SELECT * FROM CARS WHERE MODEL LIKE "TATA%" AND MODEL NOT LIKE "%NEXON";
```

Car_id	Model	Year	Category
7	TATA TIGOR	2019	EV
17	TATA ALTROZ	2020	SEDAN

2 rows in set (0.003 sec)

ORDER BY CLAUSE:

1. FIND THE TOP 3 SALARY EARNERS FROM EMPLOYEE.

```
MariaDB [emp]> SELECT * FROM EMPLOYEE ORDER BY SALARY DESC LIMIT 3;
```

Employee_Id	Employee_Number	First_Name	Last_Name	salary
1008	2638	VIDYA	SHETTY	60000
1020	8883	RAHUL	MHATRE	50000
1014	6384	GOVIND	BHASKAR	50000

```
3 rows in set (0.000 sec)
```

2. FIND THE FIVE LEAST EARNING EMPLOYEES.

```
MariaDB [emp]> SELECT * FROM EMPLOYEE ORDER BY SALARY LIMIT 5;
```

Employee_Id	Employee_Number	First_Name	Last_Name	salary
1009	6384	SUJAY	SINGH	20000
1005	3947	YASH	BHOSALE	21000
1006	5288	RANDEEP	SINGH	23000
1007	8762	SUSHANT	GADE	25000
1003	6893	NILESH	PANDEY	25000

```
5 rows in set (0.001 sec)
```

3. FIND THE ORDER_ID OF TOP 3 HIGHEST AMOUNT OF PURCHASE.

```
MariaDB [emp]> SELECT ORDER_ID FROM RENTAL_RATES ORDER BY RATES DESC LIMIT 3;
```

ORDER_ID
9020
9005
9019

```
3 rows in set (0.001 sec)
```

FUNCTIONS:

1.DISPLAY THE FIRST NAME AND LAST NAME OF EMPLOYEE AS
EMPLOYEE_FULL_NAME.

```
MariaDB [emp]> SELECT CONCAT(First_Name," ",Last_Name) as employee_full_name from employee;
```

employee_full_name
VIRAJ SHEVDE
ROHAN SHINDE
NILESH PANDEY
OMKAR MITAKE
YASH BHOSALE
RANDEEP SINGH
SUSHANT GADE
VIDYA SHETTY
SUJAY SINGH
DHIRAJ AMIN
KAVYA NAIR
ROHIT BHANDARI
TANMAY BHAT
GOVIND BHASKAR
BHAVYA GANDHI
NEHA SONI
VAIBHAV IKKE
SHREYA IYER
RIDHI NAMBIAR
RAHUL MHATRE

```
20 rows in set (0.000 sec)
```

2. FIND THE NUMBER OF CHARACTERS EACH CUSTOMERS HAVE IN
THEIR NAME.

```
MariaDB [emp]> SELECT LENGTH(CUST_NAME) FROM CUSTOMER;
```

LENGTH(CUST_NAME)
15
11
15
10
12
13
10
13
15
17
13
12
15
14
13
14
11
14
10
14

```
20 rows in set (0.182 sec)
```

3.FIND THE TOTAL SUM OF THE SALARY OF THE EMPLOYEES.

```
MariaDB [emp]> SELECT SUM(SALARY) AS TOTAL_SALARY FROM EMPLOYEE;
+-----+
| TOTAL_SALARY |
+-----+
|      711000 |
+-----+
1 row in set (0.001 sec)
```

4. FIND THE NUMBER OF DAYS THE CUSTOMERS RENTED THE CAR.

```
MariaDB [emp]> select *,datediff(rent_enddate,rent_startdate) as no_of_days_rented from rental_orders;
+-----+-----+-----+-----+-----+-----+-----+
| Order_id | cust_id | employee_id | car_id | Rent_startdate | Rent_enddate | no_of_days_rented |
+-----+-----+-----+-----+-----+-----+-----+
| 9001 | 103 | 1010 | 7 | 2022-04-17 | 2022-06-13 | 57 |
| 9002 | 119 | 1003 | 20 | 2022-05-16 | 2022-07-11 | 56 |
| 9003 | 104 | 1010 | 13 | 2022-04-07 | 2022-05-14 | 37 |
| 9004 | 111 | 1005 | 4 | 2022-03-09 | 2022-06-12 | 95 |
| 9005 | 114 | 1016 | 21 | 2022-05-16 | 2022-09-17 | 124 |
| 9006 | 108 | 1006 | 18 | 2022-04-11 | 2022-08-18 | 129 |
| 9007 | 116 | 1014 | 15 | 2022-08-21 | 2022-10-11 | 51 |
| 9008 | 106 | 1018 | 9 | 2022-05-27 | 2022-09-19 | 115 |
| 9009 | 112 | 1007 | 19 | 2022-04-11 | 2022-08-07 | 118 |
| 9010 | 101 | 1013 | 5 | 2022-08-13 | 2022-09-16 | 34 |
| 9011 | 117 | 1015 | 22 | 2022-07-13 | 2022-11-18 | 128 |
| 9012 | 115 | 1011 | 1 | 2022-05-14 | 2022-08-06 | 84 |
| 9013 | 110 | 1014 | 17 | 2022-06-14 | 2022-08-25 | 72 |
| 9014 | 118 | 1012 | 3 | 2022-04-18 | 2022-07-15 | 88 |
| 9015 | 120 | 1020 | 14 | 2022-03-18 | 2022-07-19 | 123 |
| 9016 | 109 | 1010 | 10 | 2022-06-08 | 2022-10-07 | 121 |
| 9017 | 102 | 1004 | 6 | 2022-06-04 | 2022-07-17 | 43 |
| 9018 | 113 | 1019 | 11 | 2022-05-18 | 2022-09-09 | 114 |
| 9019 | 105 | 1016 | 8 | 2022-04-02 | 2022-09-07 | 158 |
| 9020 | 107 | 1001 | 2 | 2022-04-23 | 2022-11-11 | 202 |
+-----+-----+-----+-----+-----+-----+-----+
20 rows in set (0.001 sec)
```

JOINS

1. FIND THE NAME OF THE CUSTOMER AND THE MODEL OF THE CAR HE PURCHASED ALONG WITH ITS PRICE AND THE NAME OF THE EMPLOYEE HE PURCHASED IT FROM.

```
MariaDB [emp]> select o.order_id,c.model,u.cust_name,e.first_name as employee_name,r.rates from rental_orders o JOIN cars c ON o.Car_id=c.Car_id JOIN rental_rates r ON o.order_id=r.order_id JOIN customer u ON c.cust_id=u.cust_id join employee e ON o.employee_id=e.Employee_id;
```

order_id	model	cust_name	employee_name	rates
9012	MERCEDEZ BENZ	PAWAN RATHORE	KAVYA	38000
9020	SKODA OCTAVIA	NEHA DUPIA	VIRAJ	80000
9014	RENAULT MEGANE	RAVEENA KHANNA	ROHIT	41000
9004	FORD MUSTANG	JAMAL MUSTALA	YASH	60000
9010	TATA NEXON	BHASKAR NARAYAN	TANMAY	20000
9017	AUDI A6	UDIT MITTAL	OMKAR	19000
9001	TATA TIGOR	MAHESH BHUPATTI	DHIRAJ	40000
9019	TESLA MODEL S	SHRUTI SINGH	NEHA	64000
9008	BMW XM	ASHISH MAURYA	SHREYA	45000
9016	AUDI RS	BAICHAND BHUTIA	DHIRAJ	54000
9018	TESLA MODEL X	DHARMESH GANDHI	RIDHI	46000
9003	FORD EDGE	AMAN GUPTA	DHIRAJ	45000
9015	FORD GT	VISHAL KANOJIA	RAHUL	48000
9007	SKODA SLAVIA	PIYUSH BHANISAL	GOVIND	35000
9013	TATA ALTROZ	SIEGFREID MATHEWS	GOVIND	51000
9006	MERCEDEZ AMZ	ASHOK LEYLAND	RANDEEP	55000
9009	LAMBORGINI URUS	YUSUF PATHAN	SUSHANT	52000
9002	BMW XS	POOJA NAIR	NILESH	52000
9005	LAMBORGINI GALLARDO	VIDYUT NARAYAN	NEHA	65000
9011	BMW I4	PARAG DESAI	BHAVYA	43000

20 rows in set (0.001 sec)

2. FIND THE NAME OF THE CAR THAT AND ITS RATES AND MAINTAINANCE COST.

```
MariaDB [emp]> select o.order_id,c.model,r.rates,r.MAINTENANCE from rental_orders o join cars c on o.car_id=c.car_id join rental_rates r on o.order_id=r.order_id;
```

order_id	model	rates	MAINTENANCE
9012	MERCEDEZ BENZ	38000	3400
9020	SKODA OCTAVIA	80000	7500
9014	RENAULT MEGANE	41000	1600
9004	FORD MUSTANG	60000	4000
9010	TATA NEXON	20000	800
9017	AUDI A6	19000	1000
9001	TATA TIGOR	40000	3500
9019	TESLA MODEL S	64000	5500
9008	BMW XM	45000	2000
9016	AUDI RS	54000	4200
9018	TESLA MODEL X	46000	4100
9003	FORD EDGE	45000	2500
9015	FORD GT	48000	3600
9007	SKODA SLAVIA	35000	3000
9013	TATA ALTROZ	51000	2100
9006	MERCEDEZ AMZ	55000	4000
9009	LAMBORGINI URUS	52000	4200
9002	BMW XS	52000	3000
9005	LAMBORGINI GALLARDO	65000	5500
9011	BMW I4	43000	2700

20 rows in set (0.000 sec)

3. FIND THE MODEL OF THE CAR THAT HAS NOT BEEN SOLD BY PERFORMING A JOIN

```
MariaDB [emp]> select o.Order_id,c.MODEL FROM rental_orders o right join cars c on o.car_id=c.car_id where order_id is null;
```

Order_id	MODEL
NULL	BMW M4
NULL	RENAULT DUSTER

2 rows in set (0.001 sec)

4. SHOW THE ORDER_ID OF EVERY CARS IN THE COMPANY BY PERFORMING JOINS.

```
MariaDB [emp]> select o.Order_id,c.MODEL FROM rental_orders o right join cars c on o.car_id=c.car_id UNION select o.Order_id,c.MODEL FROM rental_orders o LEFT join cars c on o.car_id=c.car_id;
```

Order_id	MODEL
9010	TATA NEXON
9017	AUDI A6
9001	TATA TIGOR
9003	FORD EDGE
9019	TESLA MODEL S
9008	BMW XM
9020	SKODA OCTAVIA
9006	MERCEDEZ AMZ
9016	AUDI RS
9013	TATA ALTROZ
9004	FORD MUSTANG
9009	LAMBORGINI URUS
9018	TESLA MODEL X
9005	LAMBORGINI GALLARDO
9012	MERCEDEZ BENZ
9007	SKODA SLAVIA
9011	BMW I4
9014	RENAULT MEGANE
9002	BMW XS
9015	FORD GT
NULL	BMW M4
NULL	RENAULT DUSTER

22 rows in set (0.045 sec)

SUBQUERY

1. FIND THE NAMES OF EMPLOYEES WHO HAVE NOT MADE ANY SALES.

```
MariaDB [emp]> SELECT * FROM EMPLOYEE E WHERE EMPLOYEE_ID NOT IN(SELECT EMPLOYEE_ID FROM RENTAL_ORDERS R WHERE R.EMPLOYEE_ID=E.EMPLOYEE_ID )
-> ;
```

Employee_Id	Employee_Number	First_Name	Last_Name	salary
1002	7384	ROHAN	SHINDE	28000
1008	2638	VIDYA	SHETTY	60000
1009	6384	SUJAY	SINGH	20000
1017	6660	VAIBHAV	IKKE	28000

4 rows in set (0.005 sec)

2. FIND THE DETAILS OF EMPLOYEES WHOSE SALARY IS LESSER THAN VAIBHAV IKKE.

```
MariaDB [emp]> SELECT * FROM EMPLOYEE WHERE SALARY<(SELECT SALARY FROM EMPLOYEE WHERE FIRST_NAME="VAIBHAV" AND LAST_NAME="IKKE");
```

Employee_Id	Employee_Number	First_Name	Last_Name	salary
1003	6893	NILESH	PANDEY	25000
1005	3947	YASH	BHOSALE	21000
1006	5288	RANDEEP	SINGH	23000
1007	8762	SUSHANT	GADE	25000
1009	6384	SUJAY	SINGH	20000

5 rows in set (0.011 sec)

3. FIND THE NAME AND PHONE NO OF CUSTOMERS WHO LIVE IN EITHER MUMBAI OR BANGALORE.

```
MariaDB [emp]> select cust_name,phone_no from customer where city in(select city from customer where city="mumbai" or city="bangalore");
```

cust_name	phone_no
MAHESH BHUPATTI	537748
NEHA DUPIA	3567736
PIYUSH BHANSAL	10048883
RAVEENA KHANNA	7733843

4 rows in set (0.004 sec)

4. FIND THE MINIMUM AND THE MAXIMUM SALARY EARNER IN A SINGLE QUERY.

```
MariaDB [emp]> SELECT * FROM EMPLOYEE WHERE SALARY=(SELECT MAX(SALARY) FROM EMPLOYEE) OR SALARY=(SELECT MIN(SALARY) FROM EMPLOYEE);
```

Employee_Id	Employee_Number	First_Name	Last_Name	salary
1008	2638	VIDYA	SHETTY	60000
1009	6384	SUJAY	SINGH	20000

```
2 rows in set (0.001 sec)
```

5. FIND THE DETAILS OF EV CARS WHICH WAS PRODUCED IN THE TIME SPAN OF YEAR 2010 TO 2020.

```
MariaDB [emp]> SELECT * FROM CARS WHERE (MODEL, YEAR) IN (SELECT MODEL, YEAR FROM CARS WHERE YEAR BETWEEN 2010 AND 2020 AND CATEGORY="EV");
```

Car_id	Model	Year	Category
7	TATA TIGOR	2019	EV
11	TESLA MODEL X	2020	EV

```
2 rows in set (0.007 sec)
```

VIEWS

1. CREATE A SIMPLE VIRTUAL TABLE OF EMPLOYEE TABLE.

```
MariaDB [emp]> CREATE VIEW EMP1 AS SELECT * FROM EMPLOYEE;
Query OK, 0 rows affected (0.107 sec)

MariaDB [emp]> SELECT * FROM EMP1;
```

Employee_Id	Employee_Number	First_Name	Last_Name	salary
1001	7673	VIRAJ	SHEVDE	30000
1002	7384	ROHAN	SHINDE	28000
1003	6893	NILESH	PANDEY	25000
1004	9836	OMKAR	MITAKE	28000
1005	3947	YASH	BHOSALE	21000
1006	5288	RANDEEP	SINGH	23000
1007	8762	SUSHANT	GADE	25000
1008	2638	VIDYA	SHETTY	60000
1009	6384	SUJAY	SINGH	20000
1010	5738	DHIRAJ	AMIN	35000
1011	9839	KAVYA	NAIR	32000
1012	5384	ROHIT	BHANDARI	40000
1013	2394	TANMAY	BHAT	45000
1014	6384	GOVIND	BHASKAR	50000
1015	4379	BHAVYA	GANDHI	47000
1016	2339	NEHA	SONI	39000
1017	6660	VAIBHAV	IKKE	28000
1018	7722	SHREYA	IYER	45000
1019	5503	RIDHI	NAMBIAR	40000
1020	8883	RAHUL	MHATRE	50000

```
20 rows in set (0.002 sec)
```

2. CREATE A VIRTUAL TABLE USING MULTIPLE TABLE OF CUSTOMER NAME, ORDER ID , RATES AND CUSTOMER ID.

```
MariaDB [emp]> CREATE VIEW GOR AS SELECT CARS.MODEL,RENTAL_ORDERS.RENT_STARTDATE,RENTAL_ORDERS.RENT_ENDDATE FROM CARS,RENTAL_ORDERS WHERE CARS.CAR_ID=RENTAL_ORDERS.CAR_ID;
Query OK, 0 rows affected (0.018 sec)

MariaDB [emp]> SELECT * FROM GOR;
```

MODEL	RENT_STARTDATE	RENT_ENDDATE
MERCEDEZ BENZ	2022-05-14	2022-08-06
SKODA OCTAVIA	2022-04-23	2022-11-11
RENAULT MEGANE	2022-04-18	2022-07-15
FORD MUSTANG	2022-03-09	2022-06-12
TATA NEXON	2022-08-13	2022-09-16
AUDI A6	2022-06-04	2022-07-17
TATA TIGOR	2022-04-17	2022-06-13
TESLA MODEL S	2022-04-02	2022-09-07
BMW XM	2022-05-27	2022-09-19
AUDI RS	2022-06-08	2022-10-07
TESLA MODEL X	2022-05-18	2022-09-09
FORD EDGE	2022-04-07	2022-05-14
FORD GT	2022-03-18	2022-07-19
SKODA SLAVIA	2022-08-21	2022-10-11
TATA ALTROZ	2022-06-14	2022-08-25
MERCEDEZ AMZ	2022-04-11	2022-08-18
LAMBORGINI URUS	2022-04-11	2022-08-07
BMW XS	2022-05-16	2022-07-11
LAMBORGINI GALLARDO	2022-05-16	2022-09-17
BMW I4	2022-07-13	2022-11-18

```
20 rows in set (0.002 sec)
```


ER DIAGRAM

