TANISHA MAHAVAR

1) Create table customer

```
CREATE TABLE Customers (
customer_id INT PRIMARY KEY AUTO_INCREMENT,
first_name VARCHAR(50),
last_name VARCHAR(50),
email VARCHAR(100),
phone_number VARCHAR(20),
address VARCHAR(255)
);
```

```
Query OK, 0 rows affected (0.10 sec)
```

2) Create table Vehicles

```
CREATE TABLE vehicles (
vehicle_id INT PRIMARY KEY AUTO_INCREMENT,
company VARCHAR(50),
model VARCHAR(50),
year INT,
color VARCHAR(20),
rental_price_per_day int ,
available BOOLEAN
);
```

```
Query OK, 0 rows affected (0.04 sec)
```

3) Create rental information table

```
CREATE TABLE Rentals (
rental_id INT PRIMARY KEY ,
customer_id INT,
vehicle_id INT,
```

```
    rental_start_date DATE,
    rental_end_date DATE,
    total_cost int,
    FOREIGN KEY (customer_id) REFERENCES
Customers(customer_id),
    FOREIGN KEY (vehicle_id) REFERENCES Vehicles(vehicle_id)
);
```

```
Query OK, 0 rows affected (0.10 sec)
```

4) Creating payments table

```
CREATE TABLE Payments (
    payment_id INT PRIMARY KEY AUTO_INCREMENT,
    rental_id INT,
    payment_date DATE,
    amount int,
    FOREIGN KEY (rental_id) REFERENCES Rentals(rental_id)
);
```

```
Query OK, 0 rows affected (0.10 sec)
```

5) Creating table to check status

```
CREATE TABLE RentalStatus (
    status_id INT PRIMARY KEY ,
    status_name VARCHAR(50) UNIQUE
);
```

```
Query OK, 0 rows affected (0.07 sec)
```

6) Inserting values in customer table

```
INSERT INTO Customers
VALUES
(1,'Tanisha', 'Mahavar', 'tanishamahavar59@gmail.com', '1234567890',
'Jaipur'),
```

(2,'Masoom', 'Yadav', 'masoomyadav@gmail.com', '9876543210',
'Alwar'),
(3,'priyanshu', 'sharma', 'priyanshu@gmail.com', '5555555555', 'Jaipur'),
(4,'jiya', 'sharma', 'sharmajiya@gmail.com', '6666666666', 'bhilwara'),
(5,'jiya', 'gupta', 'jiya@yahoo.com', '7777777777', 'ajmer'),
(6,'kashish', 'maheshwari', 'kashish@yahoo.com', '8888888888',
'jamshedpur'),
(7,'yash', 'verma', 'yash@xyz.com', '22222222', 'mirzapur'),
(8,'vidit', 'shandilya', 'vidit@pink.com', '9292929292', 'jalore'),
(9,'sneha', 'maheshwari', 'sneha@xyz.com', '2323232323', 'tonk'),
(10,'mithai', 'gupta', 'mithai@google.com', '1212121212', 'gurugram');

```
Query OK, 9 rows affected (0.01 sec)
Records: 9  Duplicates: 0  Warnings: 0
```

7) Inserting values in vehicle table

insert into vehicles
Values(123, 'maruti','alto',2002,'blue',500,true),
(345,'hyundai','creta',2004,'black',800,false),
(653,'tata','nexon',2020,'blue',600,true),
(780,'toyota','breeza',2010,'white',1000,true),
(346,'maruti','swift',2022,'whiteblack',700,true);

```
Query OK, 5 rows affected (0.02 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

8) Inserting values in rentals table

insert into Rentals
values(23,1, 123,'2024-05-02','2024-05-04',1000),
(24,2, 345,'2024-06-03','2024-06-04',800),
(25,4, 653,'2024-02-01','2024-02-03',1200),
(26,3, 346,'2023-01-01','2023-01-05',3500),
(27, 5, 923,'2026-09-02','2025-02-20',200),
(28, 5, 923,'2021-08-02','2021-08-10',12000),

(29, 5, 924,'2019-10-02','2019-10-20',860),
(30, 5, 925,'2026-01-02','2026-06-05',1300),
(31, 5, 926,'2022-05-01','2022-05-03',9000),
(32, 5, 932,'2023-09-06','2023-09-07',250);

```
Query OK, 9 rows affected (0.02 sec)
Records: 9  Duplicates: 0  Warnings: 0
```

9) Insert values in payments table

```
insert into Payments
values(189, 25,'2024-02-01',1200),
(190, 26,'2023-01-01',3500),
(110, 23,'2024-05-02',2020),
(191, 24,'2020-06-03',3193),
(192, 23,'2019-01-02',2650),
(111, 23,'1996-12-08',1982),
(112, 24,'2026-01-01',1234),
(113, 28,'2021-11-16',900),
(114, 29,'1947-07-07',525),
(115, 30,'1924-08-08',100);
```

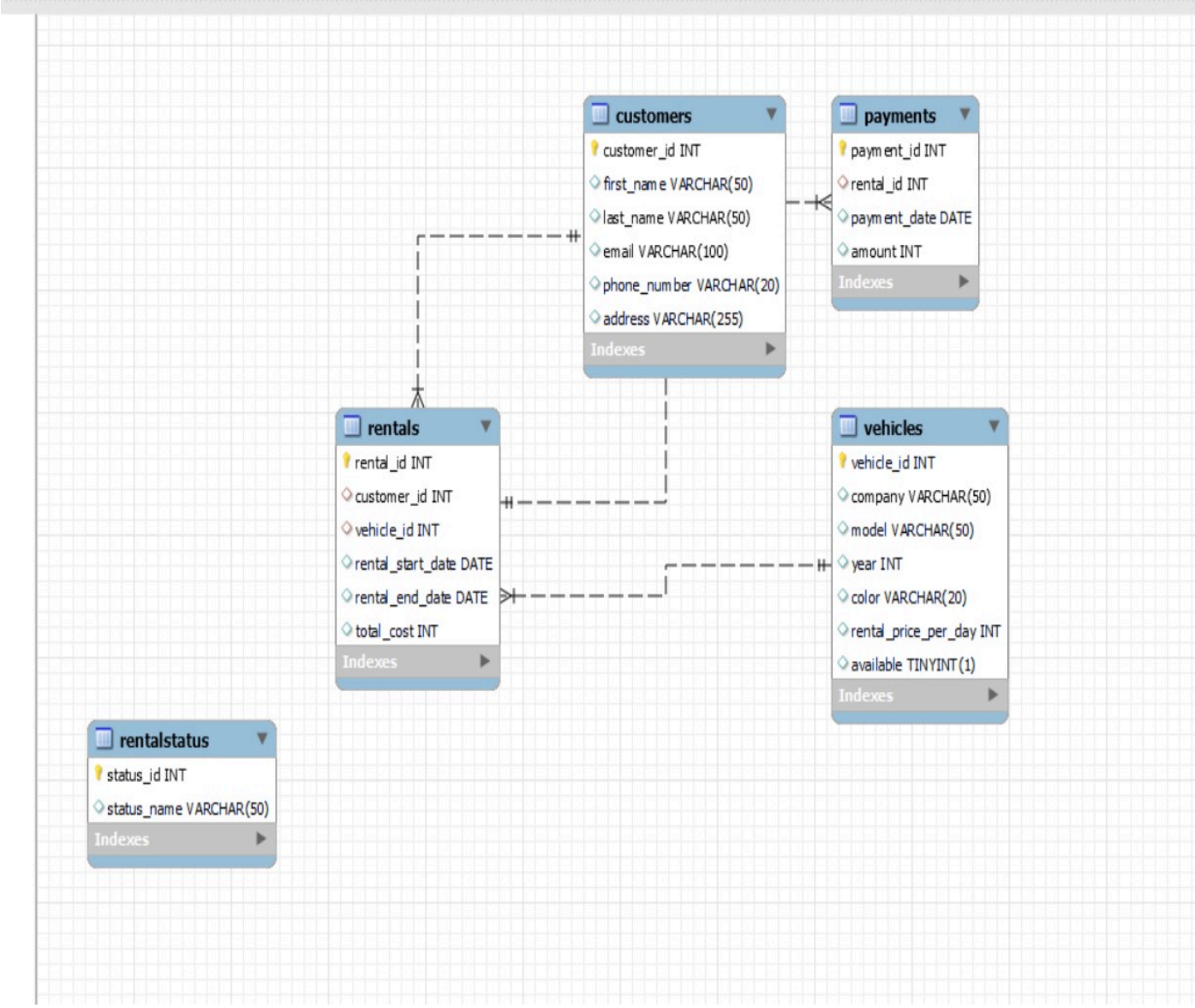
```
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

10) Insert values in rental status

```
insert into RentalStatus
values(24,'on rent'),
(25,'available'),
(23,'service');
```

```
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

ER DIAGRAM


customers
customer_id INT
first_name VARCHAR(50)
last_name VARCHAR(50)
email VARCHAR(100)
phone_number VARCHAR(20)
address VARCHAR(255)
Indexes
payments
payment_id INT
rental_id INT
payment_date DATE
amount INT
Indexes
rentals
rental_id INT
customer_id INT
vehicle_id INT
rental_start_date DATE
rental_end_date DATE
total_cost INT
Indexes
vehicles
vehicle_id INT
company VARCHAR(50)
model VARCHAR(50)
year INT
color VARCHAR(20)
rental_price_per_day INT
available TINYINT(1)
Indexes
rentalstatus
status_id INT
status_name VARCHAR(50)
Indexes

Display all the data feeded in tables

11) select* from customers;

```
mysql> select* from customers;
+-------------+------------+------------+---------------------------+--------------+------------+
| customer_id | first_name | last_name  | email                     | phone_number | address    |
+-------------+------------+------------+---------------------------+--------------+------------+
|           1 | Tanisha    | Mahavar    | tanishamahavar59@gmail.com | 1234567890   | Jaipur     |
|           2 | Masoom     | Yadav      | masoomyadav@gmail.com     | 9876543210   | Alwar      |
|           3 | priyanshu  | sharma     | priyanshu@gmail.com       | 5555555555   | Jaipur     |
|           4 | jiya       | sharma     | sharmajiya@gmail.com      | 6666666666   | bhilwara   |
|           5 | jiya       | gupta      | jiya@yahoo.com            | 7777777777   | ajmer      |
|           6 | kashish    | maheshwari | kashish@yahoo.com         | 8888888888   | jamshedpur |
|           7 | yash       | verma      | yash@xyz.com              | 22222222     | mirzapur   |
|           8 | vidit      | shandilya  | vidit@pink.com            | 9292929292   | jalore     |
|           9 | sneha      | maheshwari | sneha@xyz.com             | 2323232323   | tonk       |
|          10 | mithai     | gupta      | mithai@google.com         | 1212121212   | gurugram   |
+-------------+------------+------------+---------------------------+--------------+------------+
10 rows in set (0.00 sec)
```

12) select* from vehicles

```
mysql> select* from vehicles;
+------------+---------+--------+------+------------+----------------------+-----------+
| vehicle_id | company | model  | year | color      | rental_price_per_day | available |
+------------+---------+--------+------+------------+----------------------+-----------+
|        123 | maruti  | alto   | 2002 | blue       |                  500 |         1 |
|        345 | hyundai | creta  | 2004 | black      |                  800 |         0 |
|        346 | maruti  | swift  | 2022 | whiteblack |                  700 |         1 |
|        653 | tata    | nexon  | 2020 | blue       |                  600 |         1 |
|        780 | toyota  | breeza | 2010 | white      |                 1000 |         1 |
+------------+---------+--------+------+------------+----------------------+-----------+
5 rows in set (0.00 sec)
```

13) select* from rentals;

```
mysql> select* from rentals;
+-----------+-------------+------------+-------------------+-----------------+------------+
| rental_id | customer_id | vehicle_id | rental_start_date | rental_end_date | total_cost |
+-----------+-------------+------------+-------------------+-----------------+------------+
|        23 |           1 |        123 | 2024-05-02        | 2024-05-04      |       1000 |
|        24 |           2 |        345 | 2024-06-03        | 2024-06-04      |        800 |
|        25 |           4 |        653 | 2024-02-01        | 2024-02-03      |       1200 |
|        26 |           3 |        346 | 2023-01-01        | 2023-01-05      |       3500 |
|        27 |           5 |        923 | 2026-09-02        | 2025-02-20      |        200 |
|        28 |           5 |        923 | 2021-08-02        | 2021-08-10      |      12000 |
|        29 |           5 |        924 | 2019-10-02        | 2019-10-20      |        860 |
|        30 |           5 |        925 | 2026-01-02        | 2026-06-05      |       1300 |
|        31 |           5 |        926 | 2022-05-01        | 2022-05-03      |       9000 |
|        32 |           5 |        932 | 2023-09-06        | 2023-09-07      |        250 |
+-----------+-------------+------------+-------------------+-----------------+------------+
10 rows in set (0.00 sec)
```

14) select* from payments

```
mysql> select* from payments;
+------------+-----------+--------------+--------+
| payment_id | rental_id | payment_date | amount |
+------------+-----------+--------------+--------+
|        110 |        23 | 2024-05-02   |   2020 |
|        111 |        23 | 1996-12-08   |   1982 |
|        112 |        24 | 2026-01-01   |   1234 |
|        113 |        28 | 2021-11-16   |    900 |
|        114 |        29 | 1947-07-07   |    525 |
|        115 |        30 | 1924-08-08   |    100 |
|        189 |        25 | 2024-02-01   |   1200 |
|        190 |        26 | 2023-01-01   |   3500 |
|        191 |        24 | 2020-06-03   |   3193 |
|        192 |        23 | 2019-01-02   |   2650 |
+------------+-----------+--------------+--------+
10 rows in set (0.00 sec)
```

15) select* from RentalStatus;

```
mysql> select* from RentalStatus;
+-----------+-------------+
| status_id | status_name |
+-----------+-------------+
|        25 | available   |
|        24 | on rent     |
|        23 | service     |
+-----------+-------------+
3 rows in set (0.00 sec)
```

QUERIES

16) List all vehicles available for rental:

SELECT * FROM Vehicles WHERE available = TRUE;

```
mysql> SELECT * FROM Vehicles WHERE available = TRUE;
+------------+---------+--------+------+------------+----------------------+-----------+
| vehicle_id | company | model  | year | color      | rental_price_per_day | available |
+------------+---------+--------+------+------------+----------------------+-----------+
|        123 | maruti  | alto   | 2002 | blue       |                  500 |         1 |
|        346 | maruti  | swift  | 2022 | whiteblack |                  700 |         1 |
|        653 | tata    | nexon  | 2020 | blue       |                  600 |         1 |
|        780 | toyota  | breeza | 2010 | white      |                 1000 |         1 |
+------------+---------+--------+------+------------+----------------------+-----------+
4 rows in set (0.00 sec)
```

17) List all active rentals

SELECT * FROM Rentals WHERE rental_end_date <= CURDATE();

```
mysql> SELECT * FROM Rentals WHERE rental_end_date <= CURDATE();
+-----------+-------------+------------+-------------------+-----------------+------------+
| rental_id | customer_id | vehicle_id | rental_start_date | rental_end_date | total_cost |
+-----------+-------------+------------+-------------------+-----------------+------------+
|        23 |           1 |        123 | 2024-05-02        | 2024-05-04      |       1000 |
|        25 |           4 |        653 | 2024-02-01        | 2024-02-03      |       1200 |
|        26 |           3 |        346 | 2023-01-01        | 2023-01-05      |       3500 |
|        28 |           5 |        923 | 2021-08-02        | 2021-08-10      |      12000 |
|        29 |           5 |        924 | 2019-10-02        | 2019-10-20      |        860 |
|        31 |           5 |        926 | 2022-05-01        | 2022-05-03      |       9000 |
|        32 |           5 |        932 | 2023-09-06        | 2023-09-07      |        250 |
+-----------+-------------+------------+-------------------+-----------------+------------+
7 rows in set (0.01 sec)
```

18) Calculate total earning from rentals:

SELECT SUM(total_cost) AS total_revenue FROM Rentals;

```
mysql> SELECT SUM(total_cost) AS total_revenue FROM Rentals;
+---------------+
| total_revenue |
+---------------+
|         30110 |
+---------------+
1 row in set (0.01 sec)
```

19) List how many times a vehicle has been rented

```
SELECT vehicle_id, COUNT(*) AS rental_count
FROM Rentals
GROUP BY vehicle_id
ORDER BY rental_count DESC;
```

```
+------------+--------------+
| vehicle_id | rental_count |
+------------+--------------+
|        923 |            2 |
|        123 |            1 |
|        345 |            1 |
|        346 |            1 |
|        653 |            1 |
|        924 |            1 |
|        925 |            1 |
|        926 |            1 |
|        932 |            1 |
+------------+--------------+
9 rows in set (0.00 sec)
```

20)List all rentals within a specific date range between '2024-01-01' and '2024-07-01’

```
SELECT * FROM Rentals
WHERE rental_start_date BETWEEN '2024-01-01' AND '2024-07-01';
```

```
mysql> SELECT * FROM Rentals
    -> WHERE rental_start_date BETWEEN '2024-01-01' AND '2024-07-01';
+-----------+-------------+------------+-------------------+-----------------+------------+
| rental_id | customer_id | vehicle_id | rental_start_date | rental_end_date | total_cost |
+-----------+-------------+------------+-------------------+-----------------+------------+
|        23 |           1 |        123 | 2024-05-02        | 2024-05-04      |       1000 |
|        24 |           2 |        345 | 2024-06-03        | 2024-06-04      |        800 |
|        25 |           4 |        653 | 2024-02-01        | 2024-02-03      |       1200 |
+-----------+-------------+------------+-------------------+-----------------+------------+
3 rows in set (0.01 sec)
```

21)List all customers who have rented Maruti.

SELECT *
FROM Customers c
INNER JOIN Rentals r ON c.customer_id = r.customer_id
INNER JOIN vehicles v ON r.vehicle_id= v.vehicle_id
WHERE v.company='maruti';

```
+-------------+------------+-----------+--------------------------+--------------+---------+-----------+-------------+------------+
------+---------+-------+------+------------+---------------------+-----------+
| customer_id | first_name | last_name | email                    | phone_number | address | rental_id | customer_id | vehicle_id |
cle_id | company | model | year | color      | rental_price_per_day | available |
+-------------+------------+-----------+--------------------------+--------------+---------+-----------+-------------+------------+
------+---------+-------+------+------------+---------------------+-----------+
|           1 | Tanisha    | Mahavar   | tanishamahavar59@gmail.com | 1234567890   | Jaipur  |        23 |           1 |        123 |
  123 | maruti  | alto  | 2002 | blue       |                 500 |         1 |
|           3 | priyanshu  | sharma    | priyanshu@gmail.com        | 5555555555   | Jaipur  |        26 |           3 |        346 |
  346 | maruti  | swift | 2022 | whiteblack |                 700 |         1 |
```

22)Calculate the average rental duration:

SELECT AVG(DATEDIFF(rental_end_date, rental_start_date)) AS
avg_duration
FROM Rentals;

```
mysql> SELECT AVG(DATEDIFF(rental_end_date, rental_start_date)) AS avg_duration FROM Rentals;
+--------------+
| avg_duration |
+--------------+
|     -36.7000 |
+--------------+
1 row in set (0.02 sec)
```

23) List all vehicles which have been already rented and have rental price>=700

select*
from vehicles v
inner join rentals r on r.vehicle_id=v.vehicle_id
where v.rental_price_per_day<=700;

vehicle_id	company	model	year	color	rental_price_per_day	available	rental_id
123	maruti	alto	2002	blue	500	1	23
346	maruti	swift	2022	whiteblack	700	1	26
653	tata	nexon	2020	blue	600	1	25

24)List all payments along with the vehicle_id and customer_id
SELECT p.*, r.*
FROM Payments p
JOIN Rentals r ON p.rental_id = r.rental_id;

```
mysql> SELECT p.*, r.* FROM Payments p JOIN Rentals r ON p.rental_id = r.rental_id;
```

payment_id	rental_id	payment_date	amount	rental_id	customer_id	vehicle_id	rental_start_date	rental_end_date	total_cost
110	23	2024-05-02	2020	23	1	123	2024-05-02	2024-05-04	1000
111	23	1996-12-08	1982	23	1	123	2024-05-02	2024-05-04	1000
112	24	2026-01-01	1234	24	2	345	2024-06-03	2024-06-04	800
113	28	2021-11-16	900	28	5	923	2021-08-02	2021-08-10	12000
114	29	1947-07-07	525	29	5	924	2019-10-02	2019-10-20	860
115	30	1924-08-08	100	30	5	925	2026-01-02	2026-06-05	1300
189	25	2024-02-01	1200	25	4	653	2024-02-01	2024-02-03	1200
190	26	2023-01-01	3500	26	3	346	2023-01-01	2023-01-05	3500
191	24	2020-06-03	3193	24	2	345	2024-06-03	2024-06-04	800
192	23	2019-01-02	2650	23	1	123	2024-05-02	2024-05-04	1000

25)Calculate the total revenue from all payments under total_revenue:

SELECT SUM(amount) AS total_revenue
FROM Payments;

```
mysql> SELECT SUM(amount) AS total_revenue FROM Payments;
+---------------+
| total_revenue |
+---------------+
|         17304 |
+---------------+
1 row in set (0.00 sec)
```

26)List all vehicles along with their total revenue generated from rentals is ascending order of vehicle id:

SELECT v.*, SUM(r.total_cost) AS total_revenue
FROM Vehicles v
LEFT JOIN Rentals r ON v.vehicle_id = r.vehicle_id
GROUP BY v.vehicle_id ;

vehicle_id	company	model	year	color	rental_price_per_day	available	total_revenue
123	maruti	alto	2002	blue	500	1	1000
345	hyundai	creta	2004	black	800	0	800
346	maruti	swift	2022	whiteblack	700	1	3500
653	tata	nexon	2020	blue	600	1	1200
780	toyota	breeza	2010	white	1000	1	NULL

27)List all vehicles that have been not been rented even once:

SELECT *
FROM Vehicles
WHERE vehicle_id IN (SELECT vehicle_id FROM Rentals GROUP BY vehicle_id HAVING COUNT(*) =0);

```
Empty set (0.02 sec)
```

28)List all rentals with a total cost greater than the average total cost:
sql

SELECT *

FROM Rentals

WHERE total_cost > (SELECT AVG(total_cost) FROM Rentals);

rental_id	customer_id	vehicle_id	rental_start_date	rental_end_date	total_cost
26	3	346	2023-01-01	2023-01-05	3500
28	5	923	2021-08-02	2021-08-10	12000
31	5	926	2022-05-01	2022-05-03	9000

3 rows in set (0.00 sec)

29)List all vehicles that have been rented by customers with a specific email domain (@yahoo.com)

```
SELECT *
FROM Vehicles
WHERE vehicle_id IN (
   SELECT vehicle_id
   FROM Rentals
   JOIN Customers ON Rentals.customer_id = Customers.customer_id
   WHERE email LIKE '%@yipee.com'
);
```

```
Empty set (0.00 sec)
```

30)List all rentals with customers who have rented a specific vehicle type as maruti or hyundai

```
SELECT* FROM Rentals
WHERE customer_id IN (
   SELECT customer_id
   FROM Rentals
   JOIN Vehicles ON Rentals.vehicle_id = Vehicles.vehicle_id
   WHERE Vehicles.company = 'maruti' or Vehicles.company = 'hyundai'
);
```

```
+-----------+-------------+------------+-------------------+-----------------+------------+
| rental_id | customer_id | vehicle_id | rental_start_date | rental_end_date | total_cost |
+-----------+-------------+------------+-------------------+-----------------+------------+
|        23 |           1 |        123 | 2024-05-02        | 2024-05-04      |       1000 |
|        24 |           2 |        345 | 2024-06-03        | 2024-06-04      |        800 |
|        26 |           3 |        346 | 2023-01-01        | 2023-01-05      |       3500 |
+-----------+-------------+------------+-------------------+-----------------+------------+
3 rows in set (0.00 sec)
```