Minor Project Report

on

Project Title: Car Rental Management System

Course: Advanced Database Techniques

Course Code: CAP570

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Finally, we would like to thank our families and friends for their constant encouragement and support during this journey. This project would not have been possible without the contribution of everyone involved.

Thank you all.

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1. Introduction

Introduction to Car Rental System

A Car Rental System is a software solution designed to automate and manage the process of renting cars. It provides a seamless experience for customers and car rental companies by streamlining operations such as booking, payment, vehicle management, and reporting. Users can browse available cars, make reservations, and handle transactions online, while rental companies can manage their fleet, track reservations, and handle maintenance schedules efficiently.

Businesses ranging from small local agencies to large multinational corporations use car rental systems as they help improve customer service, reduce operational costs, and increase efficiency in the rental process.

Key Components of a Car Rental System:

1. **Customer Management**: User registration, login, and profile management features for customers.
2. **Vehicle Catalogue**: Display and management of available vehicles, including details like model, price, availability, and condition.
3. **Booking & Reservation**: Allows customers to search for available cars, make bookings, choose rental periods, and confirm reservations.
4. **Payment Gateway**: Integration with various online payment methods to facilitate secure transactions.
5. **Fleet Management**: Tools for rental companies to track vehicles, monitor their status (available, booked, under maintenance), and manage fleet details.

Importance of a Car Rental System in Modern-day application in Real Time:

A **Car Rental System** plays a critical role in real-time operations for both customers and rental companies, offering significant benefits in terms of convenience, efficiency, and cost management. In an increasingly digital world, real-time functionality is essential for ensuring smooth, up-to-date service.

1. **Instant Availability and Booking**: Customers can instantly check the availability of cars, compare different models, and book vehicles in real time. This eliminates delays associated with manual booking processes or waiting for confirmation via phone or email.

2. **Dynamic Pricing**: The system can offer real-time pricing adjustments based on demand, season, and availability. For example, during peak seasons or in high-demand locations, rental prices can dynamically adjust to maximize revenue.

3. **Efficient Fleet Management**: Rental companies can manage their fleet in real time, ensuring that vehicle status is always updated (available, rented, under maintenance, etc.)

4. **24/7 Online Booking**: Modern car rental systems offer customers the convenience of booking a vehicle anytime and from anywhere. Users can search, compare, and reserve cars through mobile apps or websites without visiting a physical location

Explanation of Database Tables

The database for the "Car Rental Management System" consists of several key tables, each designed to handle specific aspects of the rental process.

1. **CUSTOMERS Table**:
    - This table stores all relevant information about customers, including their names, contact details, and addresses. It serves as the foundation for customer interaction and support throughout the rental process.
2. **CARS Table**:
    - This table holds detailed records of the vehicles available for rent. It includes information about the car models, rental prices, and availability statuses, enabling customers to view and select the cars they wish to rent.
3. **RENTALS Table**:
    - This table documents each rental transaction, linking customers with the vehicles they rent. It tracks important details such as rental duration and total costs, facilitating accurate billing and recordkeeping.
4. **PAYMENTS Table**:
    - This table manages all payment related information, linking payments to specific rentals. It includes details on payment methods and statuses, ensuring secure and organized financial transactions.
5. **CAR_MAINTENANCE Table**:
    - This table records maintenance activities for each vehicle, helping rental agencies keep track of service schedules and costs. This ensures that all cars remain in good condition and comply with safety standards.

2. Project Overview

PROJECT CONCEPT AND SCOPE

The Car Rental System Database Website aims to streamline the process of renting vehicles by providing an intuitive online platform for both customers and rental agencies. The system will manage vehicle inventory, track rentals, handle customer reservations, and process payments securely.

Key features include user registration, vehicle availability search, booking management, and real-time reporting for rental agencies.

The scope encompasses integration with payment gateways, support for multiple locations, and an admin panel for overseeing operations. This project aims to enhance the customer experience, improve operational efficiency for rental companies, and ensure a smooth, transparent rental process.

Customers Table

Purpose: This entity stores all relevant information about individuals who rent cars. Understanding customer demographics and contact details is essential for personalized service and marketing.

Attributes

CUSTOMER_ID: A unique identifier to ensure no two customers are confused.

FIRST_NAME and **LAST_NAME**: Necessary for identifying customers.

AGE: Helps in understanding customer segments and may influence rental eligibility.

EMAIL: Essential for communication and marketing. Its uniqueness ensures no duplicates.

PHONE: Another communication channel, required for urgent notifications.

CITY, STATE, PINCODE: Useful for understanding the customer base geographically and can aid in targeted promotions or location-based services.

Cars Table

Purpose: This entity maintains details about the cars available for rental, allowing the business to manage inventory effectively and provide information to customers.

Attributes

CAR_ID: Uniquely identifies each car in the system.

MODEL: Provides information about the type of vehicle available important for customer choice.

NUMBER_PLATE: Helps in identifying cars especially for legal and operational Purposes.

RENTAL_PRICE_PER_DAY: Crucial for calculating rental costs and generating invoices.

STATUS: Indicates whether a car is available for rent, rented out, or undergoing maintenance, which is vital for inventory management.

Rentals Table

Purpose: This entity captures the details of each rental transaction, acting as the link between customers and the cars they rent.

Attributes

RENTAL_ID: Uniquely identifies each rental transaction for tracking and reference.

CUSTOMER_ID: Links to the `CUSTOMERS` table, establishing which customer rented which car.

CAR_ID: Links to the 'Cars' identifying the vehicle being rented.

PURPOSE: Provides context for the rental, which can help tailor service or track usage patterns.

START_DATE and **END_DATE:** Essential for managing rental duration, billing and availability.

T**OTAL_AMOUNT**: Automatically calculated based on the rental duration and daily price, this is crucial for financial records and customer invoicing.

Payments Table

Purpose: This entity manages financial transactions associated with rentals, ensuring accurate tracking of income and payment status.

Attributes

PAYMENT_ID: Uniquely identifies each payment transaction.

RENTAL_ID: Links to the corresponding rental, ensuring payments can be traced back to specific rentals.

PAYMENT_DATE: Records when the payment was made, important for accounting and cash flow management.

AMOUNT: The total amount paid, necessary for financial records.

PAYMENT_METHOD: Identifies how the payment was made, providing insights into customer preferences.

PAYMENT_STATUS: Tracks whether the payment was completed, pending, or failed, which is crucial for managing accounts receivable.

Car Maintenance Table

Purpose: This entity keeps track of all maintenance activities on the vehicles, ensuring that they are safe and operational for rentals.

Attributes

MAINTENANCE_ID: Uniquely identifies each maintenance record.

CAR_ID: Links to the `CARS` table, identifying which vehicle was maintained.

MAINTENANCE_DATE: Records when maintenance was performed.

COST: Captures the cost of maintenance, important for budgeting and financial analysis.

Relationships

Customers to Rentals: A customer can have multiple rentals over time, reflecting repeat business. This one-to-many relationship helps track customer loyalty and preferences.

Type: One-to-Many

Details: A customer can have multiple rentals (1 customer → M rentals).

Cars to Rentals: A specific car can be rented multiple times, but only by one customer at any given time. This relationship is crucial for managing the availability of cars and understanding rental patterns.

Type: One-to-Many

Details: A car can be rented multiple times (1 car → M rentals).

Rentals to Payments: Each rental will have a corresponding payment. This one-to-one relationship ensures that every rental is accounted for financially, simplifying billing processes.

Type: One-to-One

Details: Each rental corresponds to a single payment (1 rental → 1 payment).

Cars to Car Maintenance: Each car can undergo multiple maintenance activities over its lifetime. This one-to-many relationship helps maintain an up-to-date service history for each vehicle, ensuring safety and reliability.

Type: One-to-Many

Details: Each car can undergo multiple maintenance activities over its lifetime (1 car → many)

3. Project Objectives

In a **car rental system**, the database plays a crucial role in ensuring the efficient storage, retrieval, and management of data. It serves as the backbone of the entire system, enabling smooth operation, fast access to critical information, and effective coordination between the system's components. Here are the key objectives that a database achieves in a car rental system

1. Efficiently manage and store data:

- **Customer information:** Names, addresses, contact details, and payment details.
- **Vehicle inventory:** Make, model, registration number, rental rates, and maintenance records.
- **Rental transactions:** Rental start and end dates, total amounts, customer, and vehicle associations.
- **Payment information:** Payment methods, amounts, dates, and associated rentals.

2. Support business operations:

- **Streamline rental processes:** By providing easy access to customer and vehicle information, the database can help streamline the rental process, from reservation to payment.
- **Improve customer satisfaction:** Accurate and efficient data management can enhance the customer experience by providing timely information and personalized service.

3. Ensure data integrity and security:

- **Maintain data accuracy:** The database should implement validation rules and constraints to ensure that data is entered correctly and consistently.
- **Protect sensitive information:** Security measures should be in place to safeguard customer and financial data from unauthorized access.

4. Problem Statement

Car rental system databases address several key challenges faced by car rental companies:

1. **Data Management and Organization:**
    a. **Centralized Storage:** Provides a single location for storing and managing all relevant data, eliminating the need for manual record-keeping.
    b. **Efficient Retrieval:** Enables quick and easy access to customer information, vehicle details, rental history, and payment records.
    c. **Data Consistency:** Ensures data accuracy and consistency across the system, reducing errors and inconsistencies.

2. **Operational Efficiency:**
    a. **Streamlined Processes:** Automates various tasks, such as reservation management, rental agreements, and invoicing, reducing manual effort and time.
    b. **Improved Resource Allocation:** Helps optimize vehicle utilization and pricing by analyzing rental trends and customer preferences.
    c. **Enhanced Customer Experience:** Provides a more efficient and convenient rental experience for customers, leading to increased satisfaction and loyalty.

3. **Decision Support:**
    a. **Data-Driven Insights:** Enables analysis of rental data to identify trends, patterns, and areas for improvement.
    b. **Optimized Business Strategies:** Supports informed decision-making regarding pricing, marketing, and fleet management.
    c. **Risk Mitigation:** Helps identify potential risks and take proactive measures to address them.

4. **Scalability:**
    a. **Accommodates Growth:** Can handle increasing volumes of data and user activity as the business expands.
    b. **Adapts to Changes:** Supports changes in business processes and requirements.

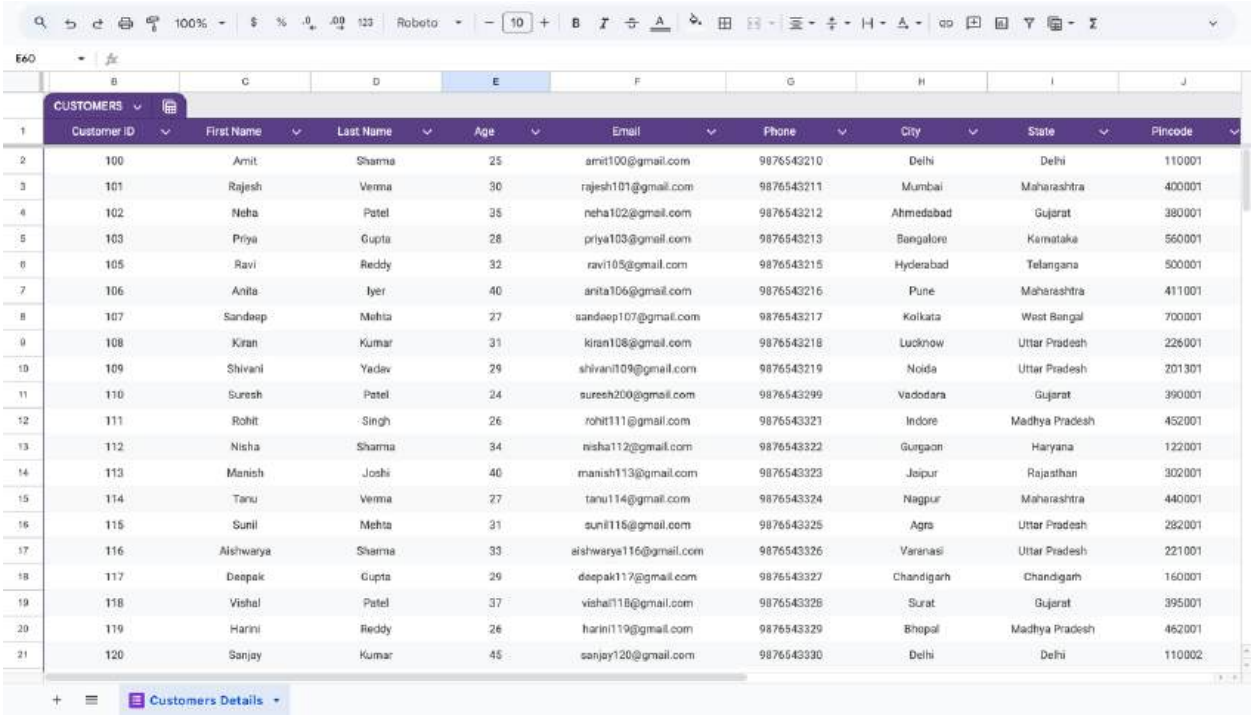
5. **Security:**
    a. **Protects Sensitive Data:** Implements measures to safeguard customer and financial information from unauthorized access.
    b. **Compliance with Regulations:** Ensures compliance with relevant data privacy and security regulations.

Requirement Gathering

5.1 Surveys

Google Form for Customer Details

https://docs.google.com/forms/d/e/1FAIpQLSfdBJf-1IzdhzN0FjFDEJhUZvzeVKPMjYxVfHlV1HdMNYdPGw/viewform?usp=sf_link



CUSTOMERS

Customer ID	First Name	Last Name	Age	Email	Phone	City	State	Pincode
100	Amit	Sharma	25	amit100@gmail.com	9876543210	Delhi	Delhi	110001
101	Rajesh	Verma	30	rajesh101@gmail.com	9876543211	Mumbai	Maharashtra	400001
102	Neha	Patel	35	neha102@gmail.com	9876543212	Ahmedabad	Gujarat	380001
103	Priya	Gupta	28	priya103@gmail.com	9876543213	Bangalore	Karnataka	560001
105	Ravi	Reddy	32	ravi105@gmail.com	9876543215	Hyderabad	Telangana	500001
106	Anita	Iyer	40	anita106@gmail.com	9876543216	Pune	Maharashtra	411001
107	Sandeep	Mehta	27	sandeep107@gmail.com	9876543217	Kolkata	West Bengal	700001
108	Kiran	Kumar	31	kiran108@gmail.com	9876543218	Lucknow	Uttar Pradesh	226001
109	Shivani	Yadav	29	shivani109@gmail.com	9876543219	Noida	Uttar Pradesh	201301
110	Suresh	Patel	24	suresh200@gmail.com	9876543299	Vadodara	Gujarat	390001
111	Rohit	Singh	26	rohit111@gmail.com	9876543321	Indore	Madhya Pradesh	452001
112	Nisha	Sharma	34	nisha112@gmail.com	9876543322	Gurgaon	Haryana	122001
113	Manish	Joshi	40	manish113@gmail.com	9876543323	Jaipur	Rajasthan	302001
114	Tanu	Verma	27	tanu114@gmail.com	9876543324	Nagpur	Maharashtra	440001
115	Sunil	Mehta	31	sunil115@gmail.com	9876543325	Agra	Uttar Pradesh	282001
116	Aishwarya	Sharma	33	aishwarya116@gmail.com	9876543326	Varanasi	Uttar Pradesh	221001
117	Deepak	Gupta	29	deepak117@gmail.com	9876543327	Chandigarh	Chandigarh	160001
118	Vishal	Patel	37	vishal118@gmail.com	9876543328	Surat	Gujarat	395001
119	Harini	Reddy	26	harini119@gmail.com	9876543329	Bhopal	Madhya Pradesh	462001
120	Sanjay	Kumar	45	sanjay120@gmail.com	9876543330	Delhi	Delhi	110002

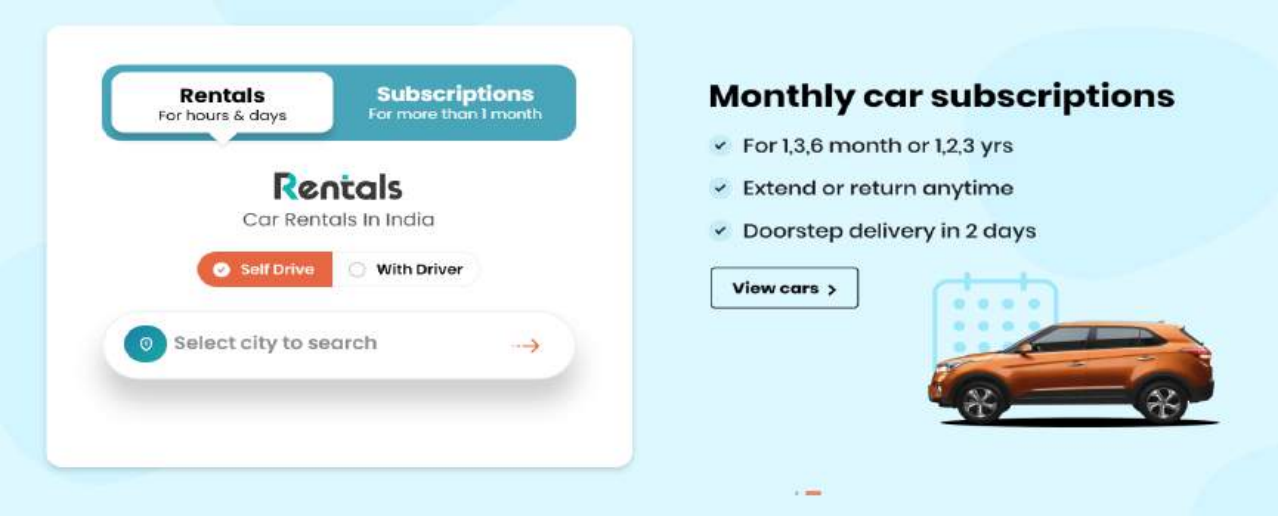
Customers Details

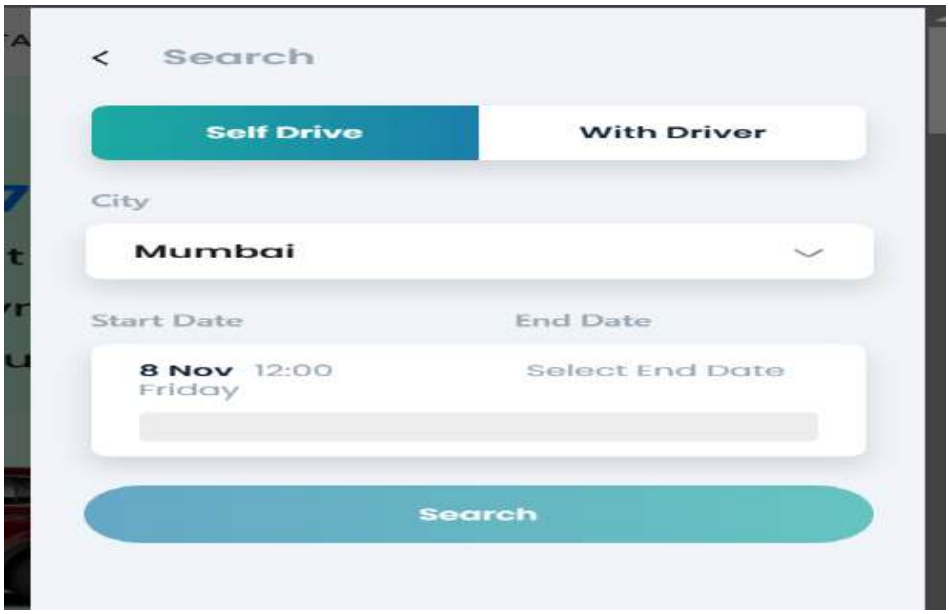
5.2Websites Explored

1.Revv

❖ https://www.revv.co.in/

Screenshots





2.Savaari

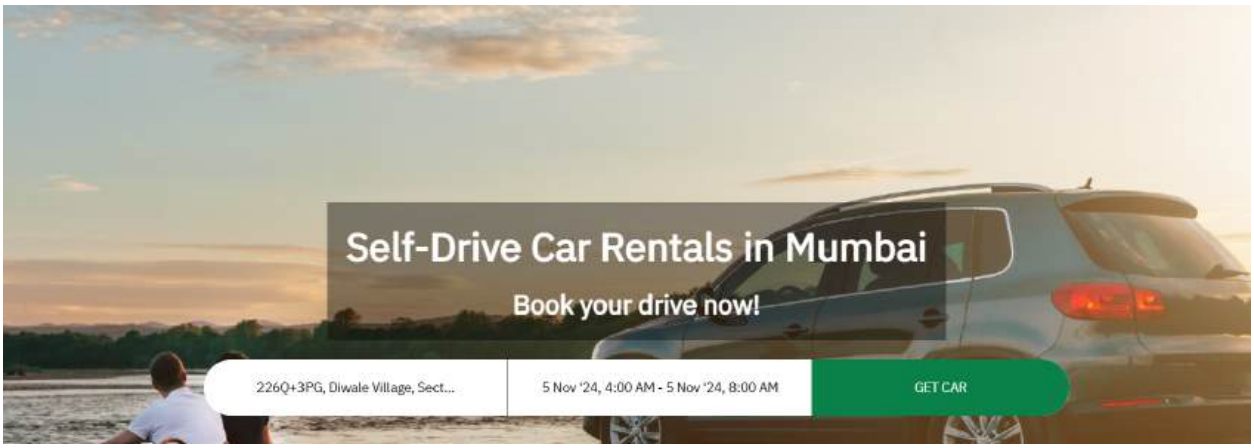
2. ❖https://www.savaari.com/

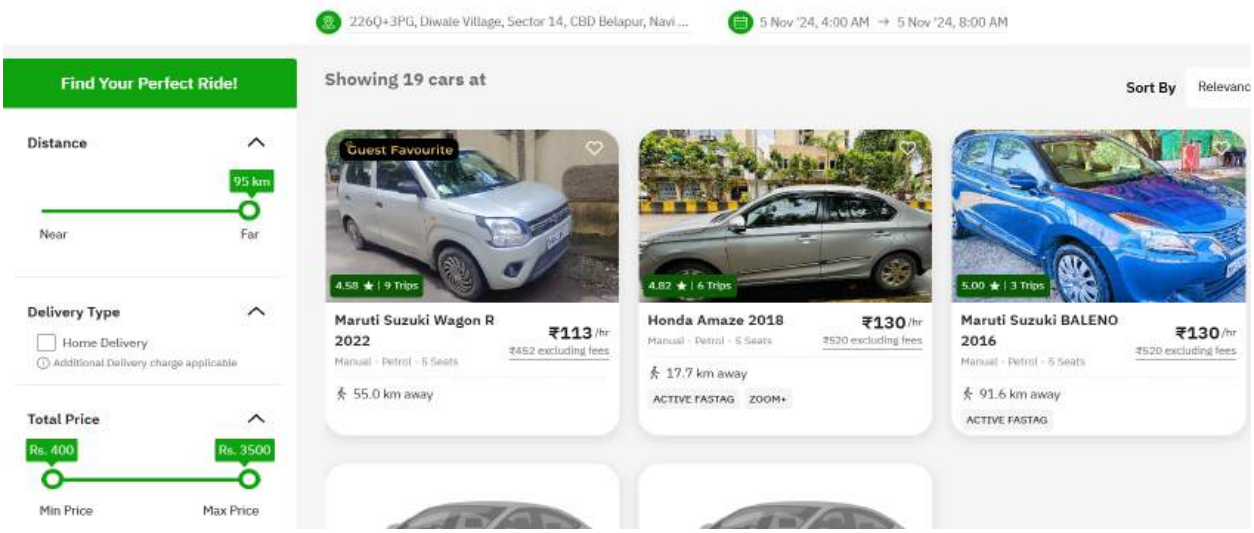
User Interface:

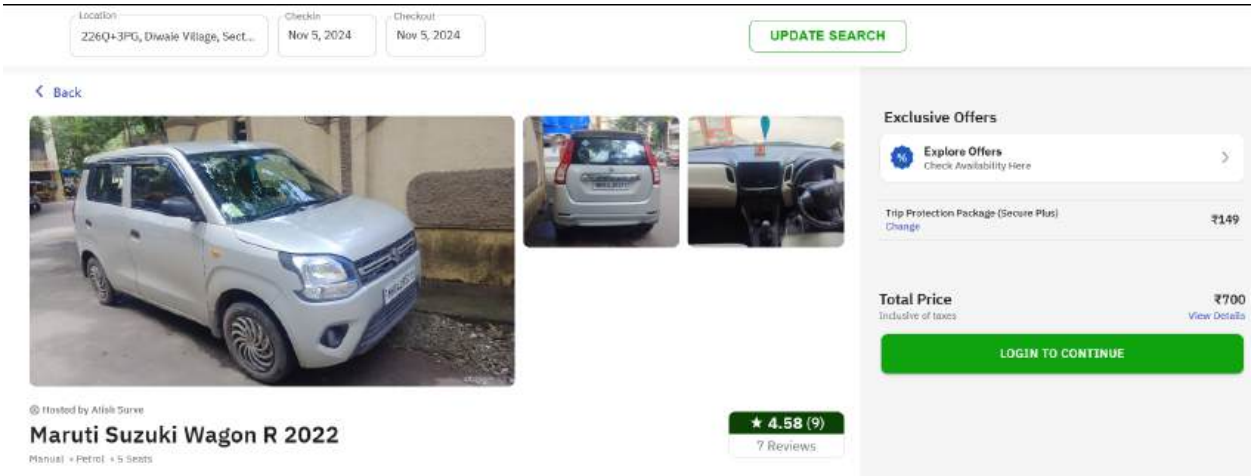
1. **Homepage**: Displays featured offers, pricing plans, and a search bar for finding cabs by location and date.
2. **Login/Signup**: Users can easily log in or sign up to access their accounts.
3. **Cab Listings**: Detailed listings of available cabs with images, specifications, and rental prices.
4. **Booking Process**: A step-by-step booking process that includes selecting the cab, choosing rental duration, and making payments.
5. **Subscription Plans**: Options for cab subscription plans for longer durations.
6. **FAQs**: A section for frequently asked questions to help users with common queries.
7. **Customer Reviews**: Testimonials and reviews from previous customers to build trust and provide insights.

3.Zoomcar

3. ❖https://www.zoomcar.com/







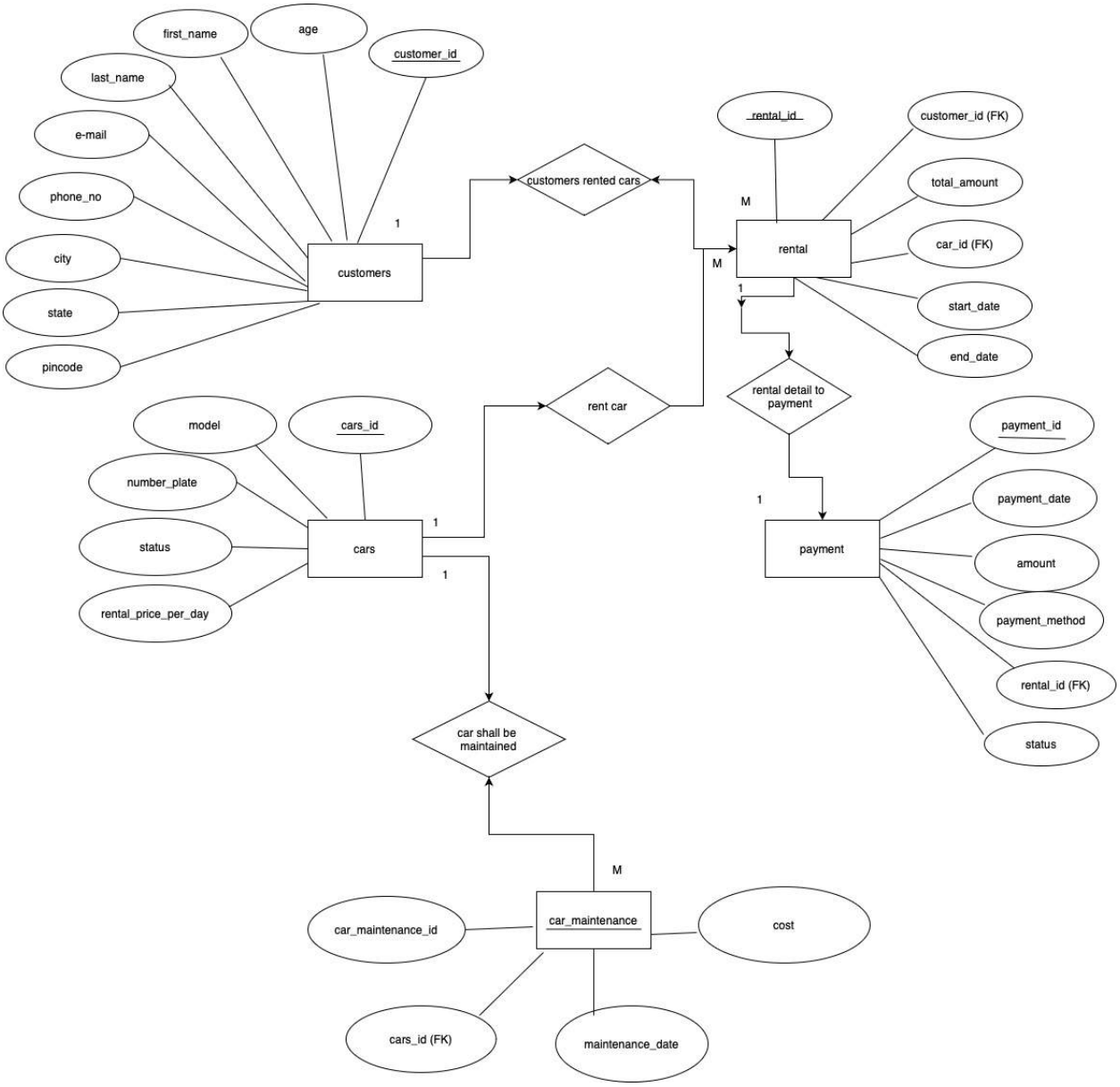
1. User Interface

1. **Homepage**: Displays featured offers, pricing plans, and a search bar for finding cars by location and date.
2. **Login/Signup**: Users can easily log in or sign up to access their accounts.
3. **Car Listings**: Detailed listings of available cars with images, specifications, and rental prices.
4. **Booking Process**: A step-by-step booking process that includes selecting the car, choosing rental duration, and making payments.
5. **Subscription Plans**: Options for car subscription plans for longer durations.
6. **FAQs**: A section for frequently asked questions to help users with common queries.
7. **Customer Reviews**: Testimonials and reviews from previous customers to build trust and provide insights.

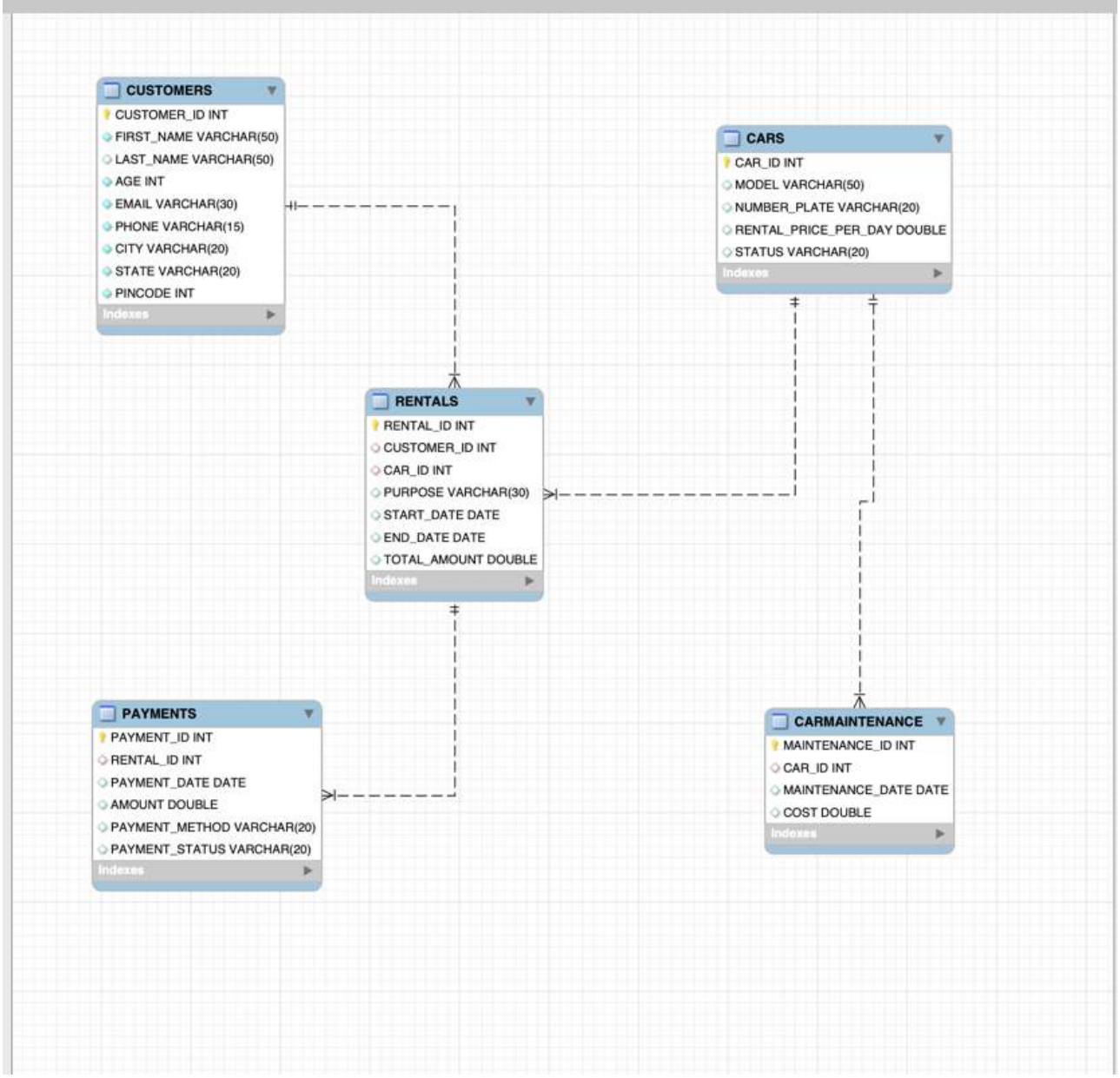
6. ER Diagram and Relational Schema

An entity relationship diagram (ER diagram or ERD) is a visual representation of how items in a database relate to each other. ERDs are a specialized type of flowchart that conveys the relationship types between different entities within a system. They use a defined set of symbols, including rectangles, ovals and diamonds, and link them with connecting lines.

CUSTOMERS TABLE IS PARENT TABLE



RELATIONAL SCHEMA



1. Customers Table

ATTIRBUTES	DATA TYPES	CONSTRAINTS
CUSTOMER_ID	INT	PRIMARY KEY
FIRST_NAME	VARCHAR (30)	NOT NULL
LAST_NAME	VARCHAR (30)	
AGE	INT	NOT NULL, CHECK (AGE >= 18)
PHONE	VARCHAR (15)	NOT NULL, UNIQUE
E-MAIL	VARCHAR (30)	NOT NULL, UNIQUE
CITY	VARCHAR (20)	NOT NULL
STATE	VARCHAR (20)	NOT NULL
PINCODE	INT	NOT NULL CHECK (PINCODE BETWEEN 100000 AND 999999))

2. Rentals Table

ATTRIBUTES	DATA TYPES	CONSTRAINTS
RENTAL_ID	INT	PRIMARY KEY
CUSTOMER_ID	INT	NOT NULL, FOREIGN KEY
CAR_ID	INT	NOT NULL, FOREIGN KEY
PURPOSE	VARCHAR (30)	NOT NULL
START_DATE	DATE	NOT NULL
END_DATE	DATE	NOT NULL
TOTAL_AMOUNT	DOUBLE	NOT NULL CHECK (TOTAL_AMOUNT > 0)

3. Cars Table

ATTRIBUTES	DATA TYPES	CONSTRAINTS
CAR_ID	INT	PRIMARY KEY
MODEL	VARCHAR (20)	NOT NULL
NUMBER_PLATE	VARCHAR (20)	NOT NULL, UNIQUE
RENTAL_PRICE_PER_DAY	INT	NOT NULL CHECK (RENTAL_PRICE_PER_DAY > 0)
STATUS	VARCHAR (20)	NOT NULL CHECK (STATUS IN (AVAILABLE,RENTED,MAINTENANCE,RESERVED))

4. PAYMENT TABLE

ATTRIBUTES	DATA TYPES	CONSTRAINTS
PAYMENT_ID	INT	PRIMARY KEY
RENTAL_ID	INT	NOT NULL FOREIGN KEY
PAYMENT_DATE	DATE	NOT NULL
AMOUNT	AMOUNT	NOT NULL CHECK (AMOUNT > 0)
PAYMENT_METHOD	VARCHAR (20)	NOT NULL
PAYMENT_STATUS	VARCHAR (20)	NOT NULL CHECK (PAYMENT_STATUS IN (Completed, Pending, Failed))

5. Car Maintenance Table

ATTRIBUTES	DATA TYPES	CONSTRAINTS
CAR_MAINTENANCE_ID	INT	PRIMARY KEY
CAR_ID	INT	NOT NULL FOREIGN KEY
MAINTENANCE_DATE	DATE	NOT NULL
COST	DOUBLE	NOT NULL CHECK (COST >=0)

7. Database Design

7.1 Table Descriptions

- **Table 1: Customers**
    - Attributes: Customer_ID, First_name, Last_name, Phone, E-mail, City, State, Pincode.
    - Primary Key: Customer_ID
    - Description: Customer details of customers using the car rental service.
- **Table 2: Cars**
    - Attributes: Car_id, Model, License_plate, Rental_price_per_day
    - Primary Key: Car_id
    - Description: Gives the details of all available cars at service.
- **Table 3: Rental**
    - Attributes: Rental_id, Customer_id, Car_id, Start_date, End_date, Total_amount, Purpose
    - Primary Key: Rental_id
    - Foreign Key: Customer_id, Car_id
    - Description: Gives the rental details. Related to customer and cars.
- **Table 4: Payment**
    - Attributes: Payment_id, Rental_id, Payment_date, Amount, Payment_method, Status
    - Primary Key: Payment_key
    - Foreign Key: Rental_id

- Description: Gives the payment details of a particular rental. Related to entity rental.

- **Table 5: Maintenance**
  - Attributes: Maintenance_id, Car_id, Maintenance_date, Cost
  - Primary Key: Maintenance_id
  - Foreign Key: Car_id
  - Description: Gives the maintenance details of a particular car

Summary of Relationships:

1.Customers to Rentals:

Type: One-to-Many

Details: A customer can have multiple rentals (1 customer → M rentals).

2. Cars to Rentals:

Type: One-to-Many

Details: A car can be rented multiple times (1 car → M rentals).

3. Rentals to Payments:

Type: One-to-One

Details: Each rental corresponds to a single payment (1 rental → 1 payment).

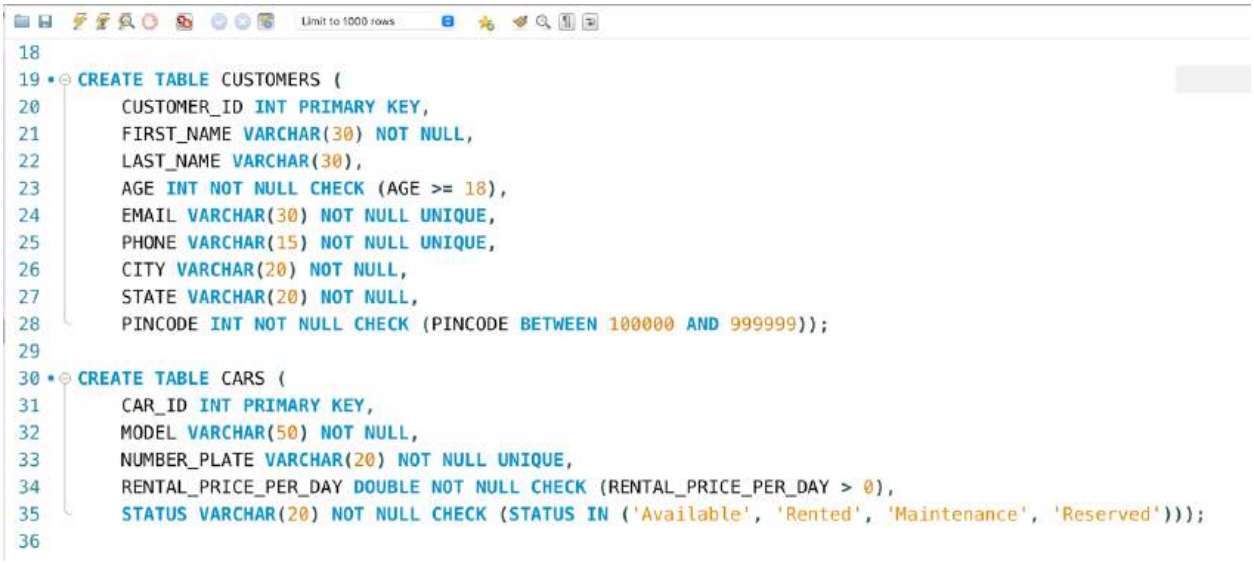
4.Cars to Car_Maintanence

Type: One-to-Many

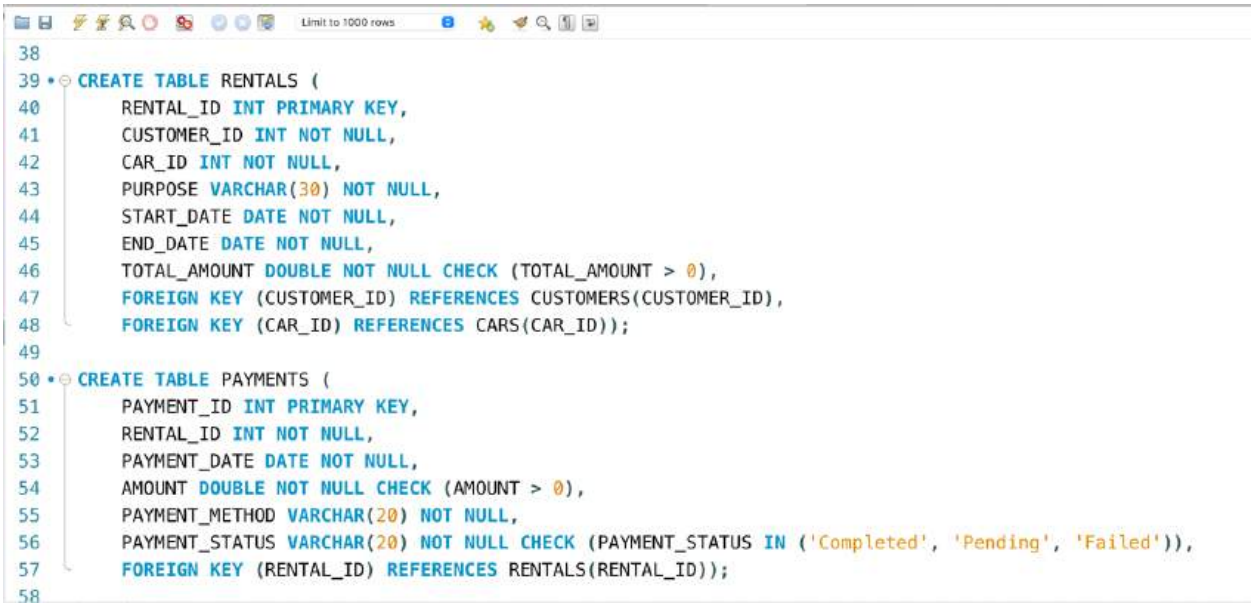
Details: Each Car will have multiple maintenance (1 Car → M maintenance).

8. SQL Queries and Database Operations

8.1 Create Tables



```
18
19 • CREATE TABLE CUSTOMERS (
20       CUSTOMER_ID INT PRIMARY KEY,
21       FIRST_NAME VARCHAR(30) NOT NULL,
22       LAST_NAME VARCHAR(30),
23       AGE INT NOT NULL CHECK (AGE >= 18),
24       EMAIL VARCHAR(30) NOT NULL UNIQUE,
25       PHONE VARCHAR(15) NOT NULL UNIQUE,
26       CITY VARCHAR(20) NOT NULL,
27       STATE VARCHAR(20) NOT NULL,
28       PINCODE INT NOT NULL CHECK (PINCODE BETWEEN 100000 AND 999999));
29
30 • CREATE TABLE CARS (
31       CAR_ID INT PRIMARY KEY,
32       MODEL VARCHAR(50) NOT NULL,
33       NUMBER_PLATE VARCHAR(20) NOT NULL UNIQUE,
34       RENTAL_PRICE_PER_DAY DOUBLE NOT NULL CHECK (RENTAL_PRICE_PER_DAY > 0),
35       STATUS VARCHAR(20) NOT NULL CHECK (STATUS IN ('Available', 'Rented', 'Maintenance', 'Reserved')));
36
```



```
38
39 • CREATE TABLE RENTALS (
40       RENTAL_ID INT PRIMARY KEY,
41       CUSTOMER_ID INT NOT NULL,
42       CAR_ID INT NOT NULL,
43       PURPOSE VARCHAR(30) NOT NULL,
44       START_DATE DATE NOT NULL,
45       END_DATE DATE NOT NULL,
46       TOTAL_AMOUNT DOUBLE NOT NULL CHECK (TOTAL_AMOUNT > 0),
47       FOREIGN KEY (CUSTOMER_ID) REFERENCES CUSTOMERS(CUSTOMER_ID),
48       FOREIGN KEY (CAR_ID) REFERENCES CARS(CAR_ID));
49
50 • CREATE TABLE PAYMENTS (
51       PAYMENT_ID INT PRIMARY KEY,
52       RENTAL_ID INT NOT NULL,
53       PAYMENT_DATE DATE NOT NULL,
54       AMOUNT DOUBLE NOT NULL CHECK (AMOUNT > 0),
55       PAYMENT_METHOD VARCHAR(20) NOT NULL,
56       PAYMENT_STATUS VARCHAR(20) NOT NULL CHECK (PAYMENT_STATUS IN ('Completed', 'Pending', 'Failed')),
57       FOREIGN KEY (RENTAL_ID) REFERENCES RENTALS(RENTAL_ID));
58
```

```sql
CREATE TABLE CAR_MAINTENANCE (
    MAINTENANCE_ID INT PRIMARY KEY,
    CAR_ID INT NOT NULL,
    MAINTENANCE_DATE DATE NOT NULL,
    COST DOUBLE NOT NULL CHECK (COST >=0),
    FOREIGN KEY (CAR_ID) REFERENCES CARS(CAR_ID));
```

8.2 Insert Data

CUSTOMERS

```sql
-- Insert Data into CUSTOMERS Table

INSERT INTO CUSTOMERS (CUSTOMER_ID, FIRST_NAME, LAST_NAME, AGE, EMAIL, PHONE, CITY, STATE, PINCODE) VALUES
(100, 'Amit', 'Sharma', 25, 'amit100@gmail.com', '9876543210', 'Delhi', 'Delhi', 110001),
(101, 'Rajesh', 'Verma', 30, 'rajesh101@gmail.com', '9876543211', 'Mumbai', 'Maharashtra', 400001),
(102, 'Neha', 'Patel', 35, 'neha102@gmail.com', '9876543212', 'Ahmedabad', 'Gujarat', 380001),
(103, 'Priya', 'Gupta', 28, 'priya103@gmail.com', '9876543213', 'Bangalore', 'Karnataka', 560001),
(104, 'Vikas', 'Singh', 22, 'vikas104@gmail.com', '9876543214', 'Chennai', 'Tamil Nadu', 600001),
(105, 'Ravi', 'Reddy', 32, 'ravi105@gmail.com', '9876543215', 'Hyderabad', 'Telangana', 500001),
(106, 'Anita', 'Iyer', 40, 'anita106@gmail.com', '9876543216', 'Pune', 'Maharashtra', 411001),
(107, 'Sandeep', 'Mehta', 27, 'sandeep107@gmail.com', '9876543217', 'Kolkata', 'West Bengal', 700001),
(108, 'Kiran', 'Kumar', 31, 'kiran108@gmail.com', '9876543218', 'Lucknow', 'Uttar Pradesh', 226001),
(109, 'Shivani', 'Yadav', 29, 'shivani109@gmail.com', '9876543219', 'Noida', 'Uttar Pradesh', 201301),
(110, 'Suresh', 'Patel', 24, 'suresh200@gmail.com', '9876543299', 'Vadodara', 'Gujarat', 390001),
(111, 'Rohit', 'Singh', 26, 'rohit111@gmail.com', '9876543321', 'Indore', 'Madhya Pradesh', 452001),
(112, 'Nisha', 'Sharma', 34, 'nisha112@gmail.com', '9876543322', 'Gurgaon', 'Haryana', 122001),
(113, 'Manish', 'Joshi', 40, 'manish113@gmail.com', '9876543323', 'Jaipur', 'Rajasthan', 302001),
(114, 'Tanu', 'Verma', 27, 'tanu114@gmail.com', '9876543324', 'Nagpur', 'Maharashtra', 440001),
(115, 'Sunil', 'Mehta', 31, 'sunil115@gmail.com', '9876543325', 'Agra', 'Uttar Pradesh', 282001),
(116, 'Aishwarya', 'Sharma', 33, 'aishwarya116@gmail.com', '9876543326', 'Varanasi', 'Uttar Pradesh', 221001),
(117, 'Deepak', 'Gupta', 29, 'deepak117@gmail.com', '9876543327', 'Chandigarh', 'Chandigarh', 160001),
(118, 'Vishal', 'Patel', 37, 'vishal118@gmail.com', '9876543328', 'Surat', 'Gujarat', 395001),
(119, 'Harini', 'Reddy', 26, 'harini119@gmail.com', '9876543329', 'Bhopal', 'Madhya Pradesh', 462001),
(120, 'Sanjay', 'Kumar', 45, 'sanjay120@gmail.com', '9876543330', 'Delhi', 'Delhi', 110002),
(121, 'Shruti', 'Yadav', 28, 'shruti121@gmail.com', '9876543331', 'Agra', 'Uttar Pradesh', 282002),
(122, 'Praveen', 'Singh', 33, 'praveen122@gmail.com', '9876543332', 'Kanpur', 'Uttar Pradesh', 208002),
(123, 'Priyanka', 'Singh', 30, 'priyanka123@gmail.com', '9876543333', 'Lucknow', 'Uttar Pradesh', 226002),
(124, 'Amit', 'Joshi', 41, 'amit124@gmail.com', '9876543334', 'Pune', 'Maharashtra', 411002),
(125, 'Anjali', 'Mehta', 29, 'anjali125@gmail.com', '9876543335', 'Jaipur', 'Rajasthan', 302002),
(126, 'Vijay', 'Patel', 36, 'vijay126@gmail.com', '9876543336', 'Ahmedabad', 'Gujarat', 380002),
(127, 'Neelam', 'Reddy', 42, 'neelam127@gmail.com', '9876543337', 'Hyderabad', 'Telangana', 500002),
(128, 'Kunal', 'Gupta', 24, 'kunal128@gmail.com', '9876543338', 'Delhi', 'Delhi', 110003),
(129, 'Radhika', 'Verma', 28, 'radhika129@gmail.com', '9876543339', 'Chennai', 'Tamil Nadu', 600002),
(130, 'Siddharth', 'Joshi', 30, 'siddharth130@gmail.com', '9876543340', 'Kolkata', 'West Bengal', 700002),
```

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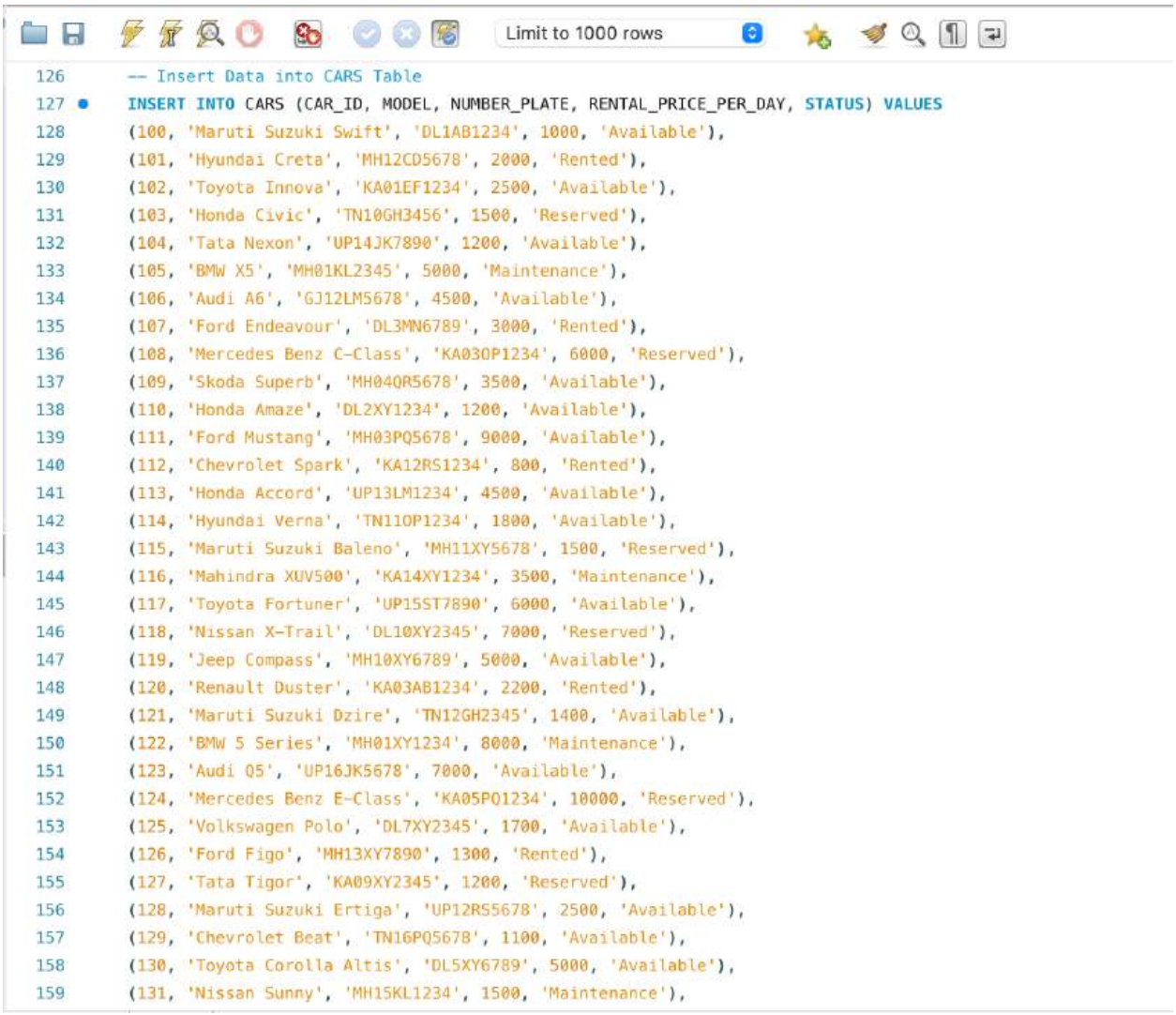
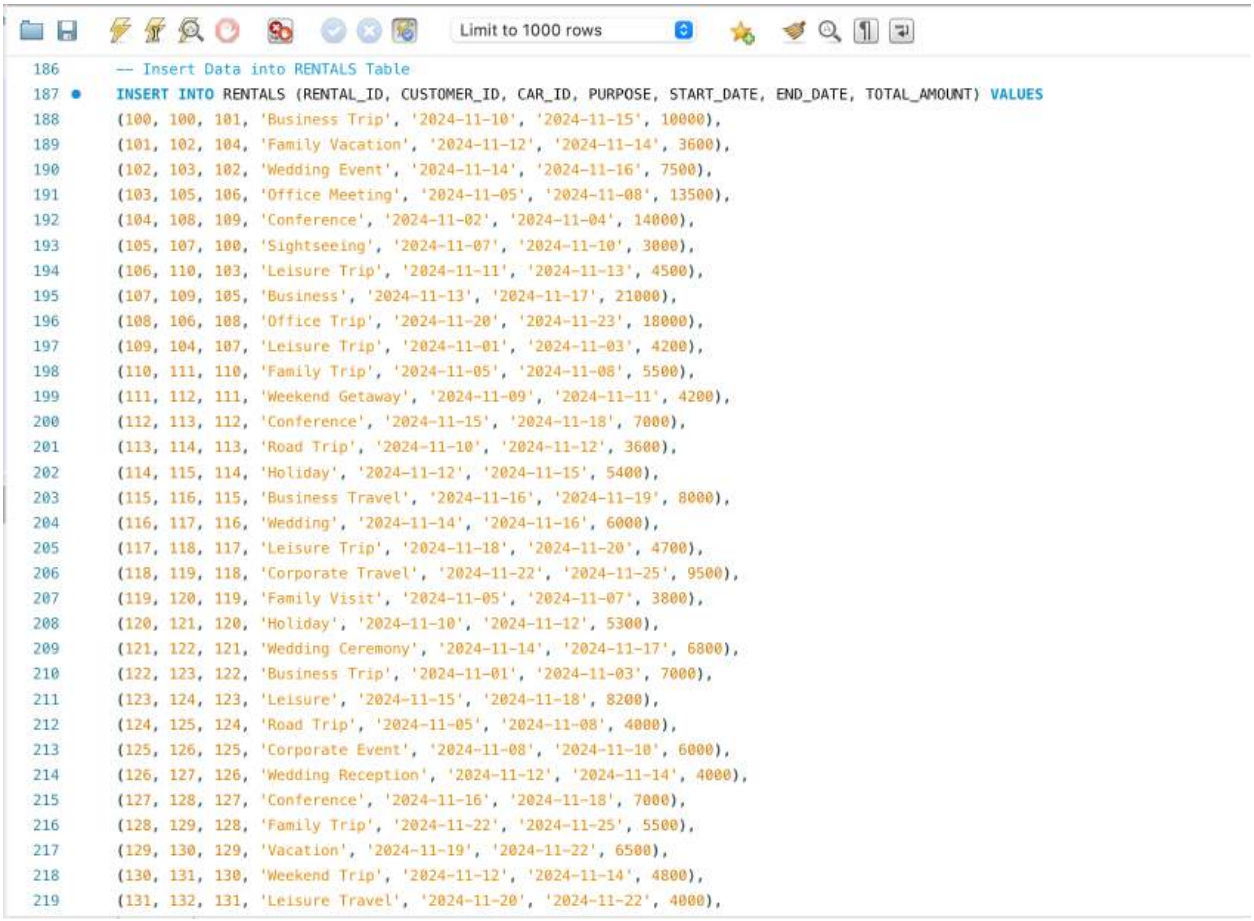
CARS




```sql
-- Insert Data into CARS Table
INSERT INTO CARS (CAR_ID, MODEL, NUMBER_PLATE, RENTAL_PRICE_PER_DAY, STATUS) VALUES
(100, 'Maruti Suzuki Swift', 'DL1AB1234', 1000, 'Available'),
(101, 'Hyundai Creta', 'MH12CD5678', 2000, 'Rented'),
(102, 'Toyota Innova', 'KA01EF1234', 2500, 'Available'),
(103, 'Honda Civic', 'TN10GH3456', 1500, 'Reserved'),
(104, 'Tata Nexon', 'UP14JK7890', 1200, 'Available'),
(105, 'BMW X5', 'MH01KL2345', 5000, 'Maintenance'),
(106, 'Audi A6', 'GJ12LM5678', 4500, 'Available'),
(107, 'Ford Endeavour', 'DL3MN6789', 3000, 'Rented'),
(108, 'Mercedes Benz C-Class', 'KA03OP1234', 6000, 'Reserved'),
(109, 'Skoda Superb', 'MH04QR5678', 3500, 'Available'),
(110, 'Honda Amaze', 'DL2XY1234', 1200, 'Available'),
(111, 'Ford Mustang', 'MH03PQ5678', 9000, 'Available'),
(112, 'Chevrolet Spark', 'KA12RS1234', 800, 'Rented'),
(113, 'Honda Accord', 'UP13LM1234', 4500, 'Available'),
(114, 'Hyundai Verna', 'TN11OP1234', 1800, 'Available'),
(115, 'Maruti Suzuki Baleno', 'MH11XY5678', 1500, 'Reserved'),
(116, 'Mahindra XUV500', 'KA14XY1234', 3500, 'Maintenance'),
(117, 'Toyota Fortuner', 'UP15ST7890', 6000, 'Available'),
(118, 'Nissan X-Trail', 'DL10XY2345', 7000, 'Reserved'),
(119, 'Jeep Compass', 'MH10XY6789', 5000, 'Available'),
(120, 'Renault Duster', 'KA03AB1234', 2200, 'Rented'),
(121, 'Maruti Suzuki Dzire', 'TN12GH2345', 1400, 'Available'),
(122, 'BMW 5 Series', 'MH01XY1234', 8000, 'Maintenance'),
(123, 'Audi Q5', 'UP16JK5678', 7000, 'Available'),
(124, 'Mercedes Benz E-Class', 'KA05PQ1234', 10000, 'Reserved'),
(125, 'Volkswagen Polo', 'DL7XY2345', 1700, 'Available'),
(126, 'Ford Figo', 'MH13XY7890', 1300, 'Rented'),
(127, 'Tata Tigor', 'KA09XY2345', 1200, 'Reserved'),
(128, 'Maruti Suzuki Ertiga', 'UP12RS5678', 2500, 'Available'),
(129, 'Chevrolet Beat', 'TN16PQ5678', 1100, 'Available'),
(130, 'Toyota Corolla Altis', 'DL5XY6789', 5000, 'Available'),
(131, 'Nissan Sunny', 'MH15KL1234', 1500, 'Maintenance'),
```

.

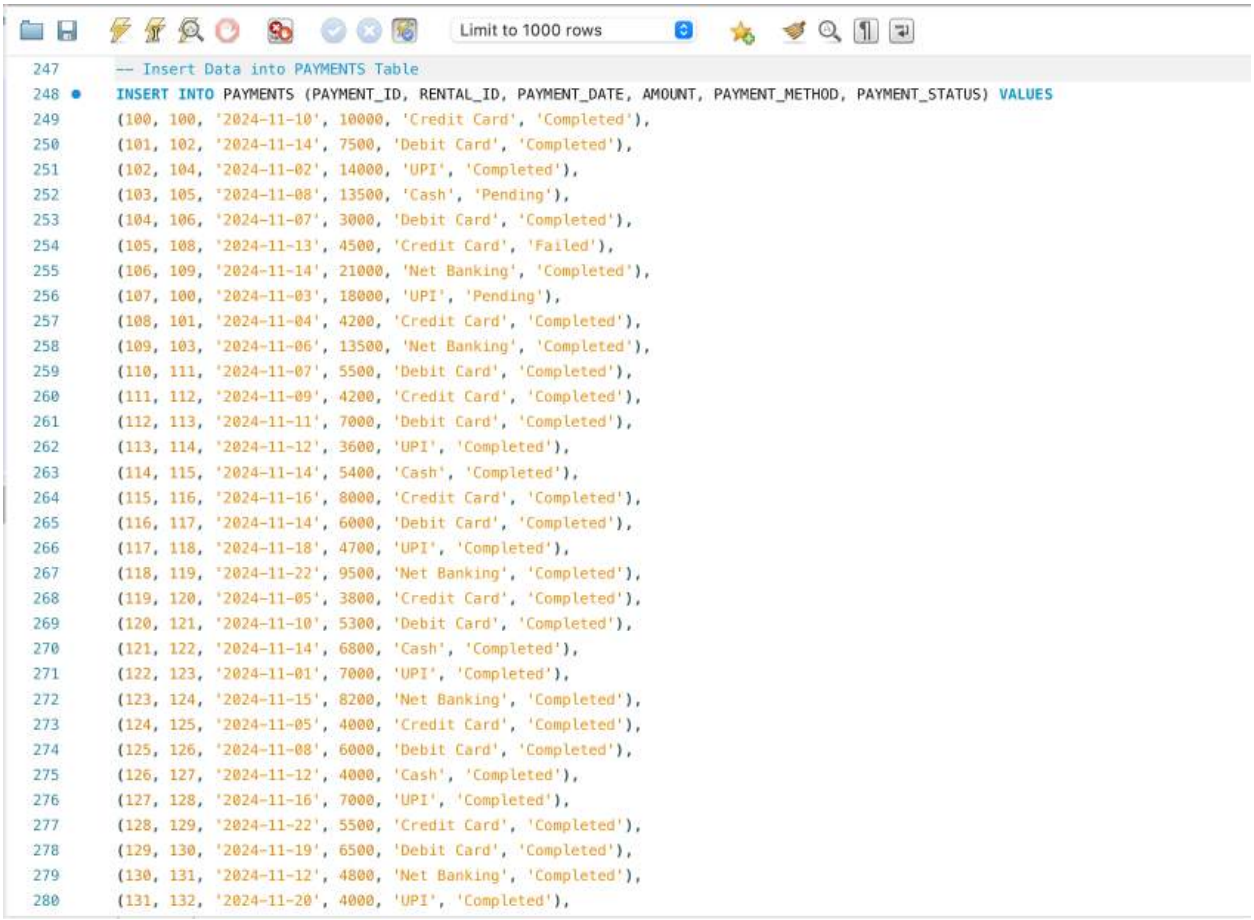
RENTALS



```
186  -- Insert Data into RENTALS Table
187  INSERT INTO RENTALS (RENTAL_ID, CUSTOMER_ID, CAR_ID, PURPOSE, START_DATE, END_DATE, TOTAL_AMOUNT) VALUES
188  (100, 100, 101, 'Business Trip', '2024-11-10', '2024-11-15', 10000),
189  (101, 102, 104, 'Family Vacation', '2024-11-12', '2024-11-14', 3600),
190  (102, 103, 102, 'Wedding Event', '2024-11-14', '2024-11-16', 7500),
191  (103, 105, 106, 'Office Meeting', '2024-11-05', '2024-11-08', 13500),
192  (104, 108, 109, 'Conference', '2024-11-02', '2024-11-04', 14000),
193  (105, 107, 100, 'Sightseeing', '2024-11-07', '2024-11-10', 3000),
194  (106, 110, 103, 'Leisure Trip', '2024-11-11', '2024-11-13', 4500),
195  (107, 109, 105, 'Business', '2024-11-13', '2024-11-17', 21000),
196  (108, 106, 108, 'Office Trip', '2024-11-20', '2024-11-23', 18000),
197  (109, 104, 107, 'Leisure Trip', '2024-11-01', '2024-11-03', 4200),
198  (110, 111, 110, 'Family Trip', '2024-11-05', '2024-11-08', 5500),
199  (111, 112, 111, 'Weekend Getaway', '2024-11-09', '2024-11-11', 4200),
200  (112, 113, 112, 'Conference', '2024-11-15', '2024-11-18', 7000),
201  (113, 114, 113, 'Road Trip', '2024-11-10', '2024-11-12', 3600),
202  (114, 115, 114, 'Holiday', '2024-11-12', '2024-11-15', 5400),
203  (115, 116, 115, 'Business Travel', '2024-11-16', '2024-11-19', 8000),
204  (116, 117, 116, 'Wedding', '2024-11-14', '2024-11-16', 6000),
205  (117, 118, 117, 'Leisure Trip', '2024-11-18', '2024-11-20', 4700),
206  (118, 119, 118, 'Corporate Travel', '2024-11-22', '2024-11-25', 9500),
207  (119, 120, 119, 'Family Visit', '2024-11-05', '2024-11-07', 3800),
208  (120, 121, 120, 'Holiday', '2024-11-10', '2024-11-12', 5300),
209  (121, 122, 121, 'Wedding Ceremony', '2024-11-14', '2024-11-17', 6800),
210  (122, 123, 122, 'Business Trip', '2024-11-01', '2024-11-03', 7000),
211  (123, 124, 123, 'Leisure', '2024-11-15', '2024-11-18', 8200),
212  (124, 125, 124, 'Road Trip', '2024-11-05', '2024-11-08', 4000),
213  (125, 126, 125, 'Corporate Event', '2024-11-08', '2024-11-10', 6000),
214  (126, 127, 126, 'Wedding Reception', '2024-11-12', '2024-11-14', 4000),
215  (127, 128, 127, 'Conference', '2024-11-16', '2024-11-18', 7000),
216  (128, 129, 128, 'Family Trip', '2024-11-22', '2024-11-25', 5500),
217  (129, 130, 129, 'Vacation', '2024-11-19', '2024-11-22', 6500),
218  (130, 131, 130, 'Weekend Trip', '2024-11-12', '2024-11-14', 4800),
219  (131, 132, 131, 'Leisure Travel', '2024-11-20', '2024-11-22', 4000),
```

•

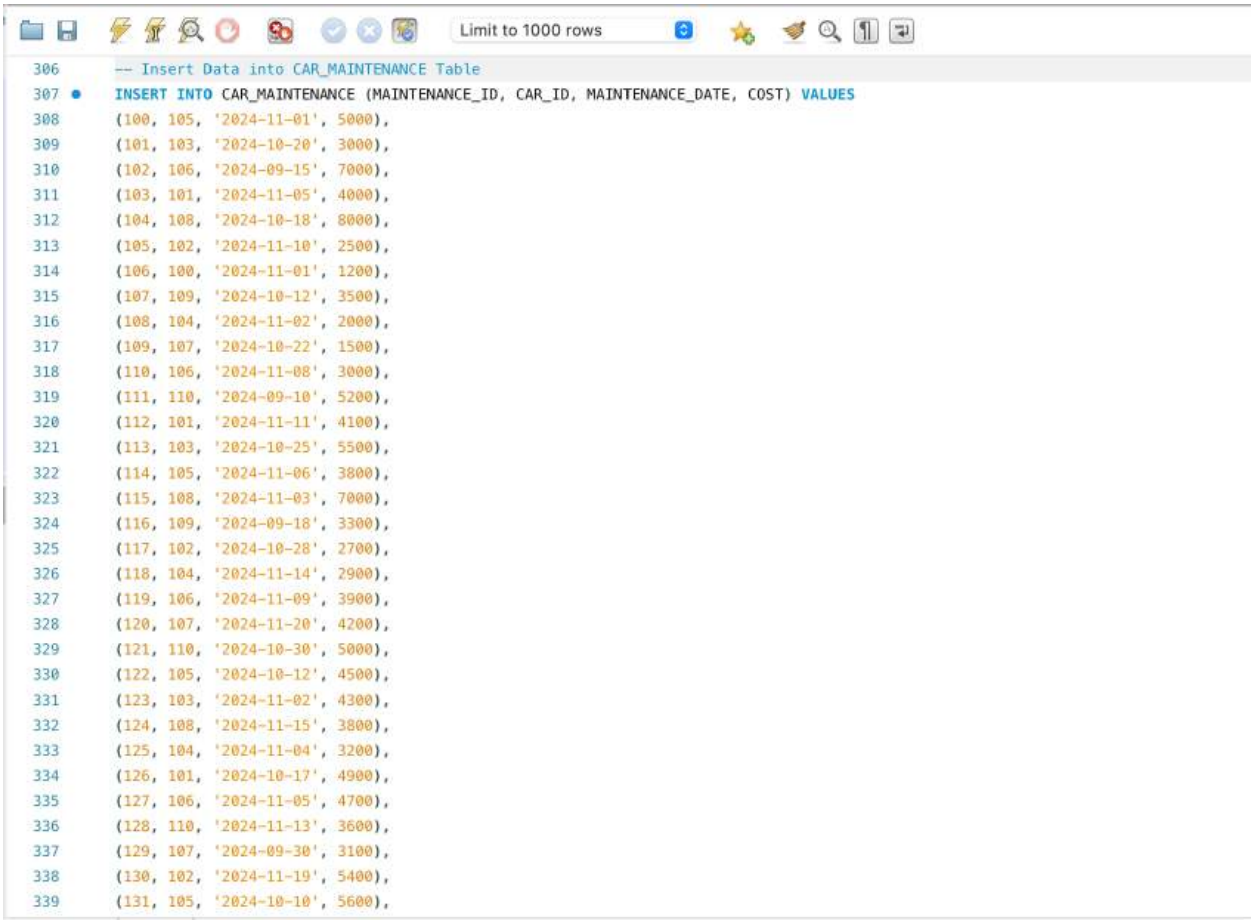
PAYMENTS



```
247  -- Insert Data into PAYMENTS Table
248  INSERT INTO PAYMENTS (PAYMENT_ID, RENTAL_ID, PAYMENT_DATE, AMOUNT, PAYMENT_METHOD, PAYMENT_STATUS) VALUES
249  (100, 100, '2024-11-10', 10000, 'Credit Card', 'Completed'),
250  (101, 102, '2024-11-14', 7500, 'Debit Card', 'Completed'),
251  (102, 104, '2024-11-02', 14000, 'UPI', 'Completed'),
252  (103, 105, '2024-11-08', 13500, 'Cash', 'Pending'),
253  (104, 106, '2024-11-07', 3000, 'Debit Card', 'Completed'),
254  (105, 108, '2024-11-13', 4500, 'Credit Card', 'Failed'),
255  (106, 109, '2024-11-14', 21000, 'Net Banking', 'Completed'),
256  (107, 100, '2024-11-03', 18000, 'UPI', 'Pending'),
257  (108, 101, '2024-11-04', 4200, 'Credit Card', 'Completed'),
258  (109, 103, '2024-11-06', 13500, 'Net Banking', 'Completed'),
259  (110, 111, '2024-11-07', 5500, 'Debit Card', 'Completed'),
260  (111, 112, '2024-11-09', 4200, 'Credit Card', 'Completed'),
261  (112, 113, '2024-11-11', 7000, 'Debit Card', 'Completed'),
262  (113, 114, '2024-11-12', 3600, 'UPI', 'Completed'),
263  (114, 115, '2024-11-14', 5400, 'Cash', 'Completed'),
264  (115, 116, '2024-11-16', 8000, 'Credit Card', 'Completed'),
265  (116, 117, '2024-11-14', 6000, 'Debit Card', 'Completed'),
266  (117, 118, '2024-11-18', 4700, 'UPI', 'Completed'),
267  (118, 119, '2024-11-22', 9500, 'Net Banking', 'Completed'),
268  (119, 120, '2024-11-05', 3800, 'Credit Card', 'Completed'),
269  (120, 121, '2024-11-10', 5300, 'Debit Card', 'Completed'),
270  (121, 122, '2024-11-14', 6800, 'Cash', 'Completed'),
271  (122, 123, '2024-11-01', 7000, 'UPI', 'Completed'),
272  (123, 124, '2024-11-15', 8200, 'Net Banking', 'Completed'),
273  (124, 125, '2024-11-05', 4000, 'Credit Card', 'Completed'),
274  (125, 126, '2024-11-08', 6000, 'Debit Card', 'Completed'),
275  (126, 127, '2024-11-12', 4000, 'Cash', 'Completed'),
276  (127, 128, '2024-11-16', 7000, 'UPI', 'Completed'),
277  (128, 129, '2024-11-22', 5500, 'Credit Card', 'Completed'),
278  (129, 130, '2024-11-19', 6500, 'Debit Card', 'Completed'),
279  (130, 131, '2024-11-12', 4800, 'Net Banking', 'Completed'),
280  (131, 132, '2024-11-20', 4000, 'UPI', 'Completed'),
```

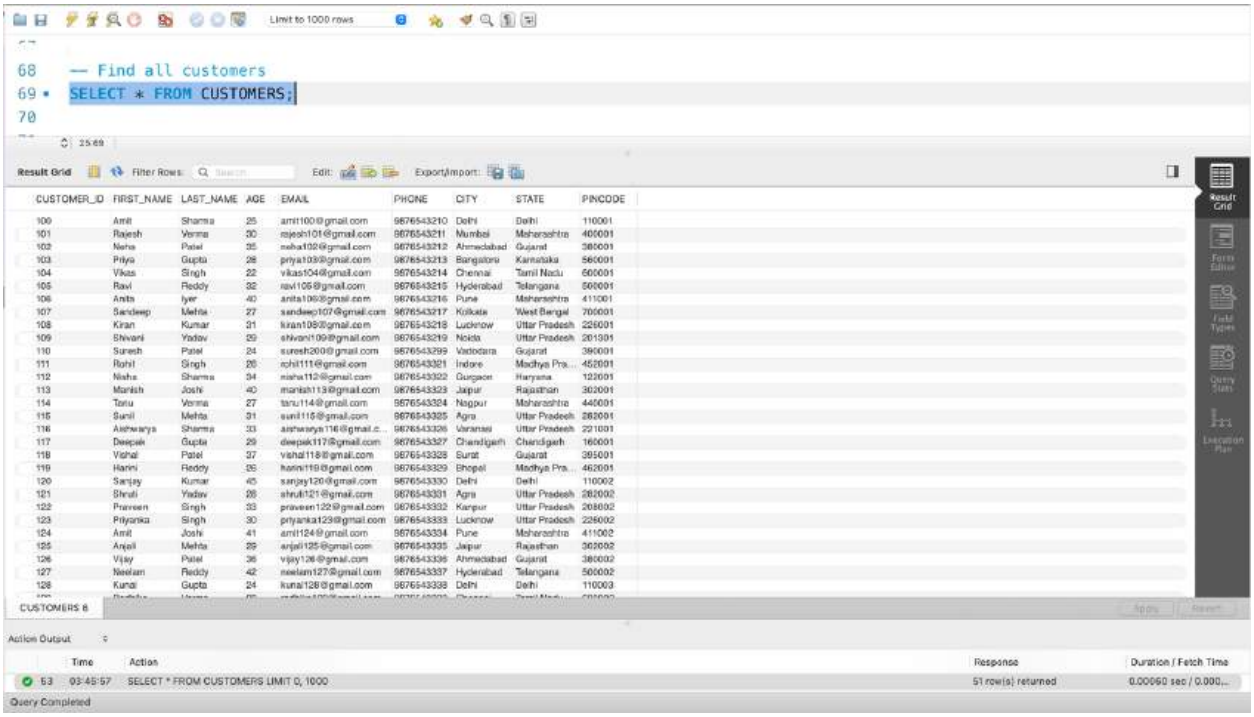
.

CAR_MAINTENANCE




```
306  -- Insert Data into CAR_MAINTENANCE Table
307  INSERT INTO CAR_MAINTENANCE (MAINTENANCE_ID, CAR_ID, MAINTENANCE_DATE, COST) VALUES
308  (100, 105, '2024-11-01', 5000),
309  (101, 103, '2024-10-20', 3000),
310  (102, 106, '2024-09-15', 7000),
311  (103, 101, '2024-11-05', 4000),
312  (104, 108, '2024-10-18', 8000),
313  (105, 102, '2024-11-10', 2500),
314  (106, 100, '2024-11-01', 1200),
315  (107, 109, '2024-10-12', 3500),
316  (108, 104, '2024-11-02', 2000),
317  (109, 107, '2024-10-22', 1500),
318  (110, 106, '2024-11-08', 3000),
319  (111, 110, '2024-09-10', 5200),
320  (112, 101, '2024-11-11', 4100),
321  (113, 103, '2024-10-25', 5500),
322  (114, 105, '2024-11-06', 3800),
323  (115, 108, '2024-11-03', 7000),
324  (116, 109, '2024-09-18', 3300),
325  (117, 102, '2024-10-28', 2700),
326  (118, 104, '2024-11-14', 2900),
327  (119, 106, '2024-11-09', 3900),
328  (120, 107, '2024-11-20', 4200),
329  (121, 110, '2024-10-30', 5000),
330  (122, 105, '2024-10-12', 4500),
331  (123, 103, '2024-11-02', 4300),
332  (124, 108, '2024-11-15', 3800),
333  (125, 104, '2024-11-04', 3200),
334  (126, 101, '2024-10-17', 4900),
335  (127, 106, '2024-11-05', 4700),
336  (128, 110, '2024-11-13', 3600),
337  (129, 107, '2024-09-30', 3100),
338  (130, 102, '2024-11-19', 5400),
339  (131, 105, '2024-10-10', 5600),
```

8.3 Queries for Data Retrieval



```
68  -- Find all customers
69  SELECT * FROM CUSTOMERS;
70
```

Result Grid

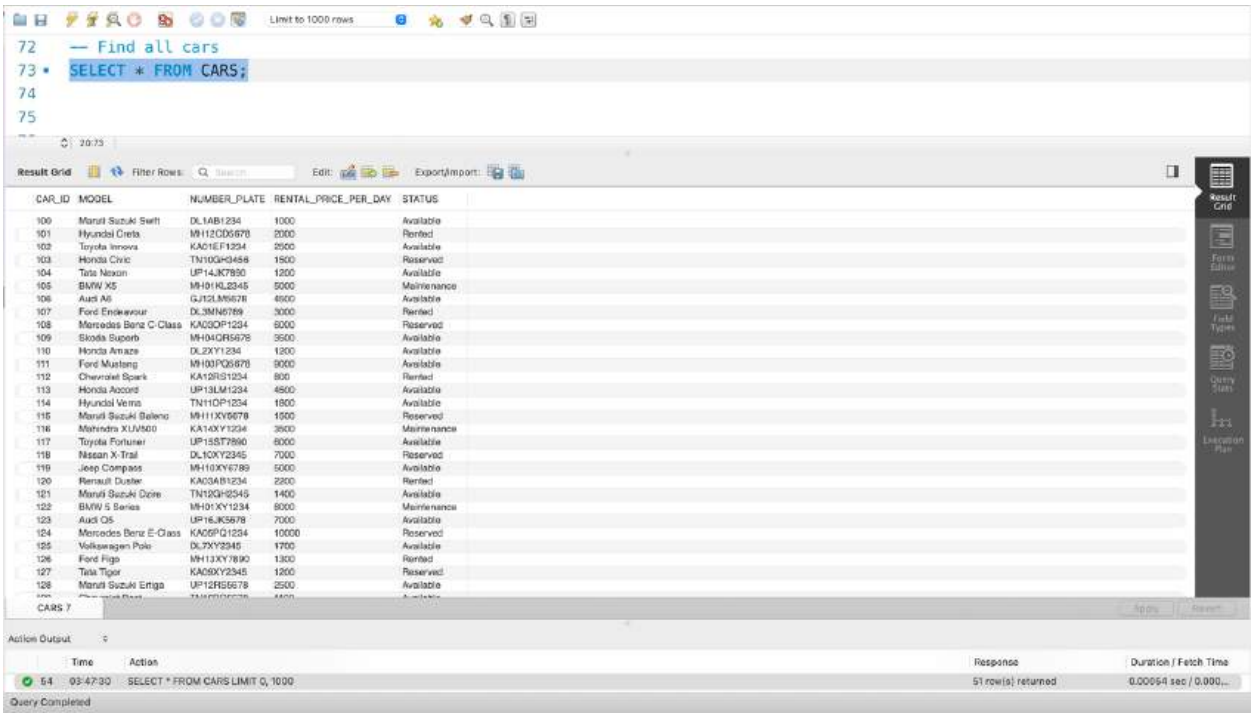
CUSTOMER_ID	FIRST_NAME	LAST_NAME	AGE	EMAIL	PHONE	CITY	STATE	PINCODE
100	Amit	Sharma	25	amit100@gmail.com	9876543210	Delhi	Delhi	110001
101	Rajesh	Verma	30	rajesh101@gmail.com	9876543211	Mumbai	Maharashtra	400001
102	Neha	Patel	35	neha102@gmail.com	9876543212	Ahmedabad	Gujarat	380001
103	Priya	Gupta	28	priya103@gmail.com	9876543213	Bangalore	Karnataka	560001
104	Vikas	Singh	22	vikas104@gmail.com	9876543214	Chennai	Tamil Nadu	600001
105	Ravi	Reddy	32	ravi105@gmail.com	9876543215	Hyderabad	Telangana	500001
106	Anita	Iyer	40	anita106@gmail.com	9876543216	Pune	Maharashtra	411001
107	Sandeep	Mehta	27	sandeep107@gmail.com	9876543217	Kolkata	West Bengal	700001
108	Kiran	Kumar	31	kiran108@gmail.com	9876543218	Lucknow	Uttar Pradesh	226001
109	Shivani	Yadav	29	shivani109@gmail.com	9876543219	Noida	Uttar Pradesh	201301
110	Suresh	Patel	24	suresh200@gmail.com	9876543299	Vadodara	Gujarat	390001
111	Rohit	Singh	26	rohit111@gmail.com	9876543321	Indore	Madhya Pra...	452001
112	Nisha	Sharma	34	nisha112@gmail.com	9876543322	Gurgaon	Haryana	122001
113	Manish	Joshi	40	manish113@gmail.com	9876543323	Jaipur	Rajasthan	302001
114	Tanu	Verma	27	tanu114@gmail.com	9876543324	Nagpur	Maharashtra	440001
115	Sunil	Mehta	31	sunil115@gmail.com	9876543325	Agra	Uttar Pradesh	282001
116	Aishwarya	Sharma	33	aishwarya116@gmail.c...	9876543326	Varanasi	Uttar Pradesh	221001
117	Deepak	Gupta	29	deepak117@gmail.com	9876543327	Chandigarh	Chandigarh	160001
118	Vishal	Patel	37	vishal118@gmail.com	9876543328	Surat	Gujarat	395001
119	Hanni	Reddy	26	hanni119@gmail.com	9876543329	Bhopal	Madhya Pra...	462001
120	Sanjay	Kumar	45	sanjay120@gmail.com	9876543330	Delhi	Delhi	110002
121	Shruti	Yadav	28	shruti121@gmail.com	9876543331	Agra	Uttar Pradesh	282002
122	Praveen	Singh	33	praveen122@gmail.com	9876543332	Kanpur	Uttar Pradesh	208002
123	Priyanka	Singh	30	priyanka123@gmail.com	9876543333	Lucknow	Uttar Pradesh	226002
124	Amit	Joshi	41	amit124@gmail.com	9876543334	Pune	Maharashtra	411002
125	Anjali	Mehta	29	anjali125@gmail.com	9876543335	Jaipur	Rajasthan	302002
126	Vijay	Patel	36	vijay126@gmail.com	9876543336	Ahmedabad	Gujarat	380002
127	Neelam	Reddy	42	neelam127@gmail.com	9876543337	Hyderabad	Telangana	500002
128	Kunal	Gupta	24	kunal128@gmail.com	9876543338	Delhi	Delhi	110003

CUSTOMERS 6

Action Output

	Time	Action	Response	Duration / Fetch Time
53	03:45:57	SELECT * FROM CUSTOMERS LIMIT 0, 1000	51 row(s) returned	0.00060 sec / 0.000...

Query Completed



```
72  -- Find all cars
73  SELECT * FROM CARS;
74
75
```

Result Grid

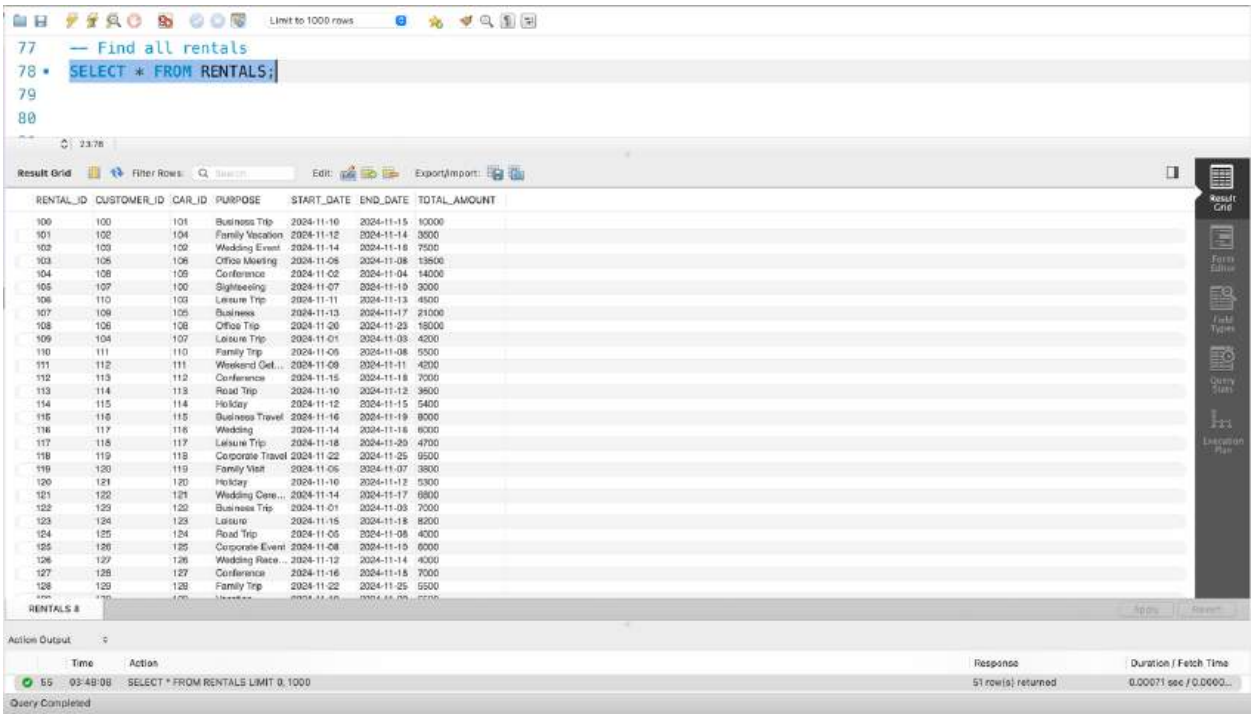
CAR_ID	MODEL	NUMBER_PLATE	RENTAL_PRICE_PER_DAY	STATUS
100	Maruti Suzuki Swift	DL1AB1234	1000	Available
101	Hyundai Creta	MH12CD5678	2000	Rented
102	Toyota Innova	KA01EF1234	2500	Available
103	Honda Civic	TN10GH3456	1500	Reserved
104	Tata Nexon	UP14JK7890	1200	Available
105	BMW X5	MH01KL2345	5000	Maintenance
106	Audi A6	GJ12LM5678	4500	Available
107	Ford Endeavour	DL3MN6789	3000	Rented
108	Mercedes Benz C-Class	KA03OP1234	6000	Reserved
109	Skoda Superb	MH04QR5678	3500	Available
110	Honda Amaze	DL2XY1234	1200	Available
111	Ford Mustang	MH00PQ5678	9000	Available
112	Chevrolet Spark	KA12RS1234	800	Rented
113	Honda Accord	UP13LM1234	4500	Available
114	Hyundai Verna	TN11OP1234	1800	Available
115	Maruti Suzuki Baleno	MH11XY5678	1500	Reserved
116	Mahindra XUV500	KA14XY1234	3500	Maintenance
117	Toyota Fortuner	UP15ST7890	8000	Available
118	Nissan X-Trail	DL10XY2345	7000	Reserved
119	Jeep Compass	MH10XY6789	5000	Available
120	Renault Duster	KA03AB1234	2200	Rented
121	Maruti Suzuki Dzire	TN12GH2345	1400	Available
122	BMW 5 Series	MH01XY1234	8000	Maintenance
123	Audi Q5	UP16JK5678	7000	Available
124	Mercedes Benz E-Class	KA05PQ1234	10000	Reserved
125	Volkswagen Polo	DL7XY2345	1700	Available
126	Ford Figo	MH13XY7890	1300	Rented
127	Tata Tigor	KA09XY2345	1500	Reserved
128	Maruti Suzuki Ertiga	UP12RS5678	2500	Available

CARS 7

Action Output

	Time	Action	Response	Duration / Fetch Time
54	03:47:30	SELECT * FROM CARS LIMIT 0, 1000	51 row(s) returned	0.00064 sec / 0.000...

Query Completed



```
77  -- Find all rentals
78  SELECT * FROM RENTALS;
79
80
```

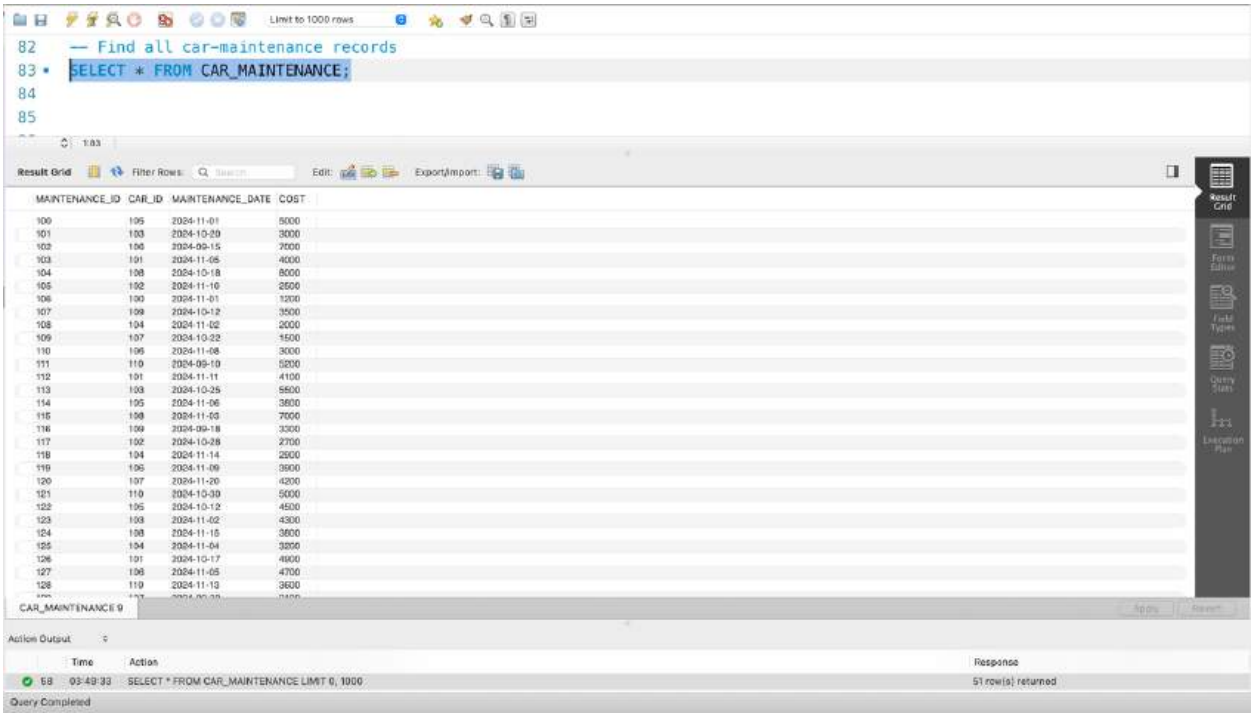
RENTAL_ID	CUSTOMER_ID	CAR_ID	PURPOSE	START_DATE	END_DATE	TOTAL_AMOUNT
100	100	101	Business Trip	2024-11-10	2024-11-15	10000
101	102	104	Family Vacation	2024-11-12	2024-11-14	3500
102	103	102	Wedding Event	2024-11-14	2024-11-16	7500
103	105	106	Office Meeting	2024-11-06	2024-11-08	13500
104	108	109	Conference	2024-11-02	2024-11-04	14000
105	107	100	Sightseeing	2024-11-07	2024-11-10	3000
106	110	103	Leisure Trip	2024-11-11	2024-11-13	4500
107	109	105	Business	2024-11-13	2024-11-17	21000
108	106	108	Office Trip	2024-11-20	2024-11-23	18000
109	104	107	Leisure Trip	2024-11-01	2024-11-03	4200
110	111	110	Family Trip	2024-11-05	2024-11-08	5500
111	112	111	Weekend Get...	2024-11-09	2024-11-11	4200
112	113	112	Conference	2024-11-15	2024-11-18	7000
113	114	113	Road Trip	2024-11-10	2024-11-12	3600
114	115	114	Holiday	2024-11-12	2024-11-15	5400
115	116	115	Business Travel	2024-11-16	2024-11-19	8000
116	117	116	Wedding	2024-11-14	2024-11-16	6000
117	118	117	Leisure Trip	2024-11-18	2024-11-20	4700
118	119	118	Corporate Travel	2024-11-22	2024-11-25	9500
119	120	119	Family Visit	2024-11-05	2024-11-07	3800
120	121	120	Holiday	2024-11-10	2024-11-12	5300
121	122	121	Wedding Cere...	2024-11-14	2024-11-17	6800
122	123	122	Business Trip	2024-11-01	2024-11-03	7000
123	124	123	Leisure	2024-11-15	2024-11-18	8200
124	125	124	Road Trip	2024-11-05	2024-11-08	4000
125	126	125	Corporate Event	2024-11-08	2024-11-10	6000
126	127	126	Wedding Rece...	2024-11-12	2024-11-14	4000
127	128	127	Conference	2024-11-16	2024-11-18	7000
128	129	129	Family Trip	2024-11-22	2024-11-25	5500

RENTALS 8

Action Output

	Time	Action	Response	Duration / Fetch Time
55	03:48:08	SELECT * FROM RENTALS LIMIT 0, 1000	51 row(s) returned	0.00071 sec / 0.0000...

Query Completed



```
82  -- Find all car-maintenance records
83  SELECT * FROM CAR_MAINTENANCE;
84
85
```

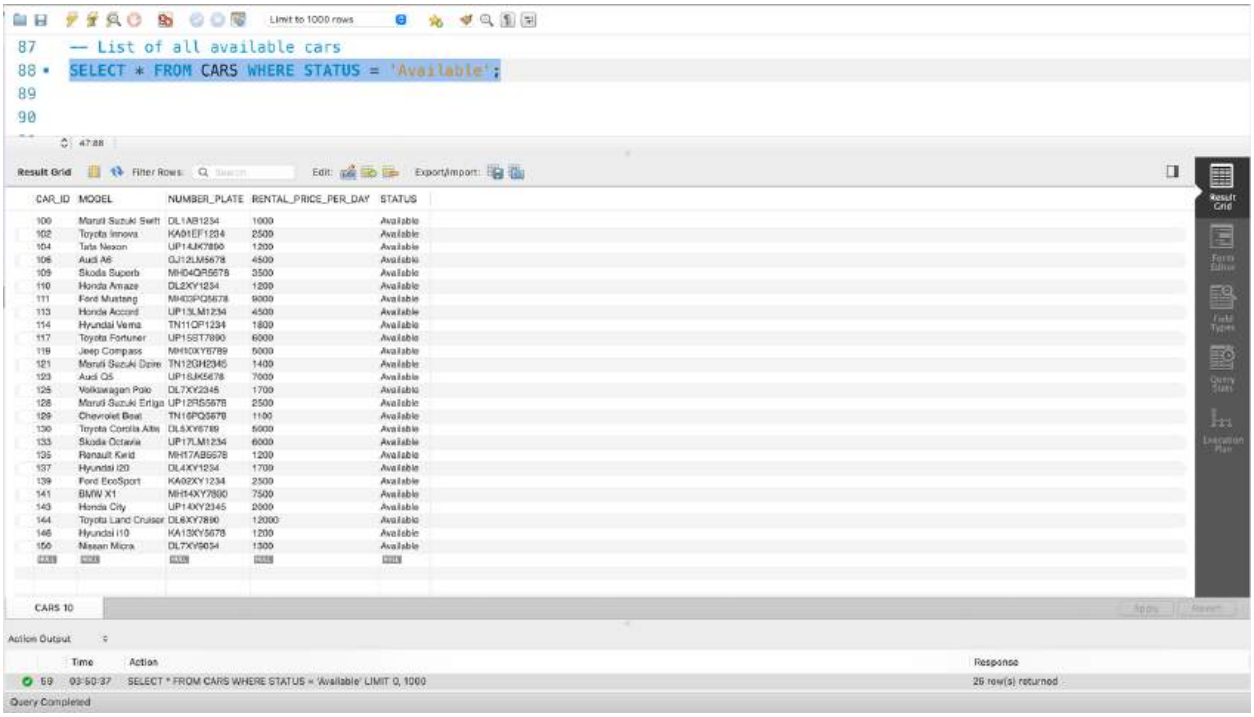
MAINTENANCE_ID	CAR_ID	MAINTENANCE_DATE	COST
100	105	2024-11-01	5000
101	103	2024-10-29	3000
102	106	2024-09-15	7000
103	101	2024-11-05	4000
104	108	2024-10-18	8000
105	102	2024-11-10	2500
106	100	2024-11-01	1200
107	109	2024-10-12	3500
108	104	2024-11-02	2000
109	107	2024-10-22	1500
110	106	2024-11-08	3000
111	110	2024-09-10	5200
112	101	2024-11-11	4100
113	103	2024-10-25	5500
114	105	2024-11-06	3800
115	108	2024-11-03	7000
116	109	2024-09-18	3300
117	102	2024-10-28	2700
118	104	2024-11-14	2500
119	106	2024-11-09	3900
120	107	2024-11-20	4200
121	110	2024-10-30	5000
122	105	2024-10-12	4500
123	103	2024-11-02	4300
124	108	2024-11-15	3600
125	104	2024-11-04	3200
126	101	2024-10-17	4000
127	106	2024-11-05	4700
128	110	2024-11-13	3600

CAR_MAINTENANCE 9

Action Output

	Time	Action	Response
58	03:49:33	SELECT * FROM CAR_MAINTENANCE LIMIT 0, 1000	51 row(s) returned

Query Completed



```
87  -- List of all available cars
88  SELECT * FROM CARS WHERE STATUS = 'Available';
89
90
```

Result Grid

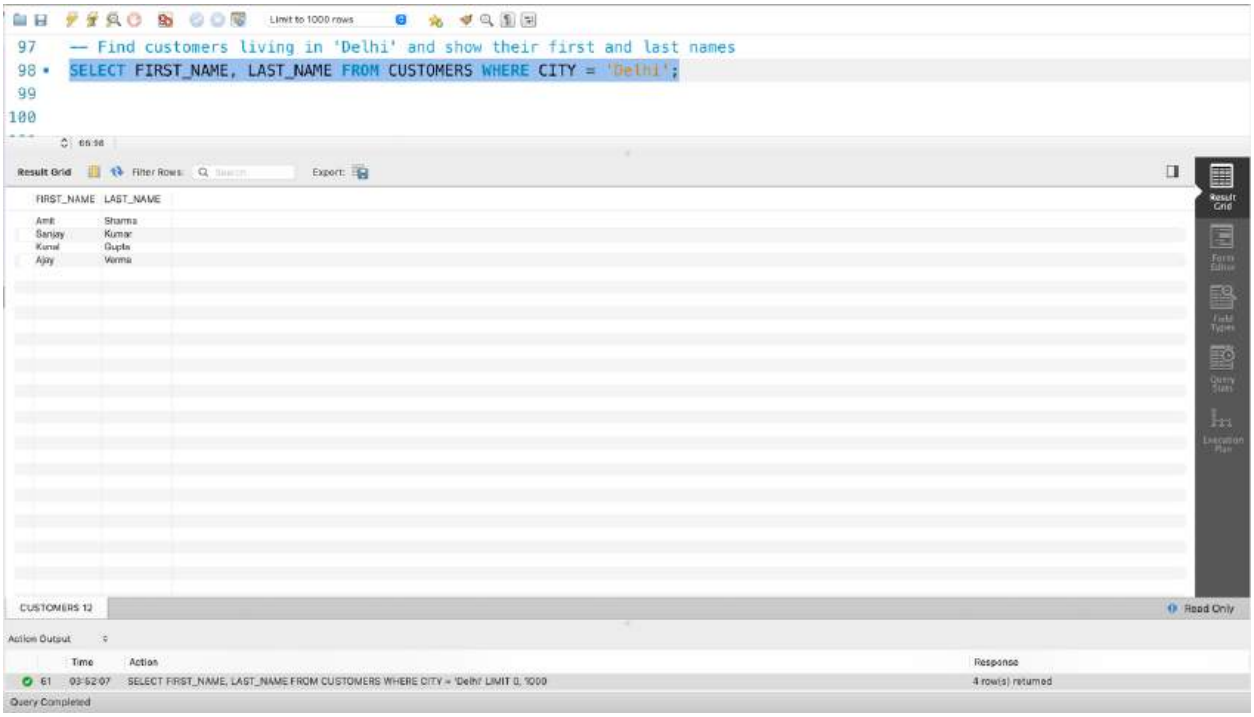
CAR_ID	MODEL	NUMBER_PLATE	RENTAL_PRICE_PER_DAY	STATUS
100	Maruti Suzuki Swift	DL1AB1234	1000	Available
102	Toyota Innova	KA01EF1234	2500	Available
104	Tata Nexon	UP14JK7890	1200	Available
106	Audi A6	GJ12LM5678	4500	Available
109	Skoda Superb	MH04QR5678	3500	Available
110	Honda Amaze	DL2XY1234	1200	Available
111	Ford Mustang	MH03PQ5678	9000	Available
113	Honda Accord	UP13LM1234	4500	Available
114	Hyundai Verna	TN11CP1234	1800	Available
117	Toyota Fortuner	UP15ST7890	6000	Available
119	Jeep Compass	MH10XY6789	5000	Available
121	Maruti Suzuki Dzire	TN12GH2345	1400	Available
123	Audi Q5	UP16JK5678	7000	Available
125	Volkswagen Polo	DL7XY2345	1700	Available
128	Maruti Suzuki Ertiga	UP12RS5678	2500	Available
129	Chevrolet Beat	TN16PQ5678	1100	Available
130	Toyota Corolla Altis	DL8XY6789	5000	Available
133	Skoda Octavia	UP17LM1234	6000	Available
135	Renault Kwid	MH17AB5678	1200	Available
137	Hyundai i20	DL4XY1234	1700	Available
139	Ford EcoSport	KA02XY1234	2500	Available
141	BMW X1	MH14XY7890	7500	Available
143	Honda City	UP14XY2345	2000	Available
144	Toyota Land Cruiser	DL6XY7890	12000	Available
146	Hyundai i10	KA13XY5678	1200	Available
150	Nissan Micra	DL7XY5634	1300	Available

CARS 10

Action Output

	Time	Action	Response
59	03:50:37	SELECT * FROM CARS WHERE STATUS = 'Available' LIMIT 0, 1000	26 row(s) returned

Query Completed



```
97  -- Find customers living in 'Delhi' and show their first and last names
98  SELECT FIRST_NAME, LAST_NAME FROM CUSTOMERS WHERE CITY = 'Delhi';
99
100
```

Result Grid

FIRST_NAME	LAST_NAME
Amit	Sharma
Sanjay	Kumar
Kunal	Gupta
Ajay	Verma

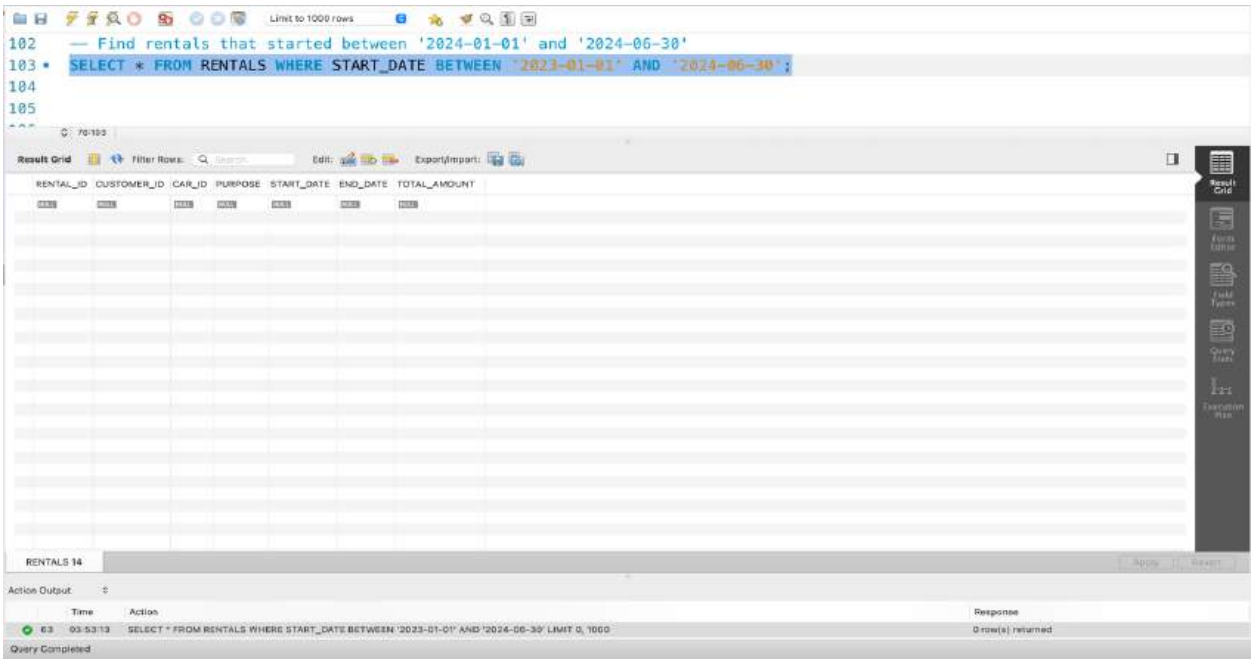
CUSTOMERS 12

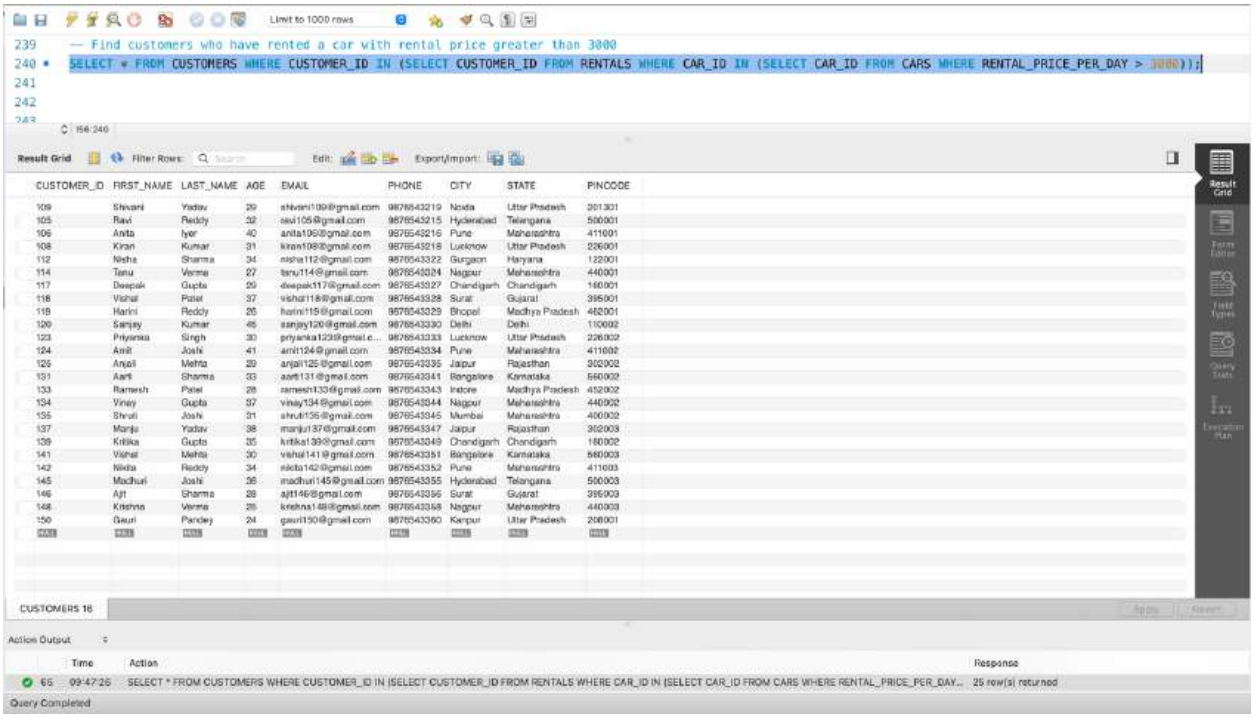
Read Only

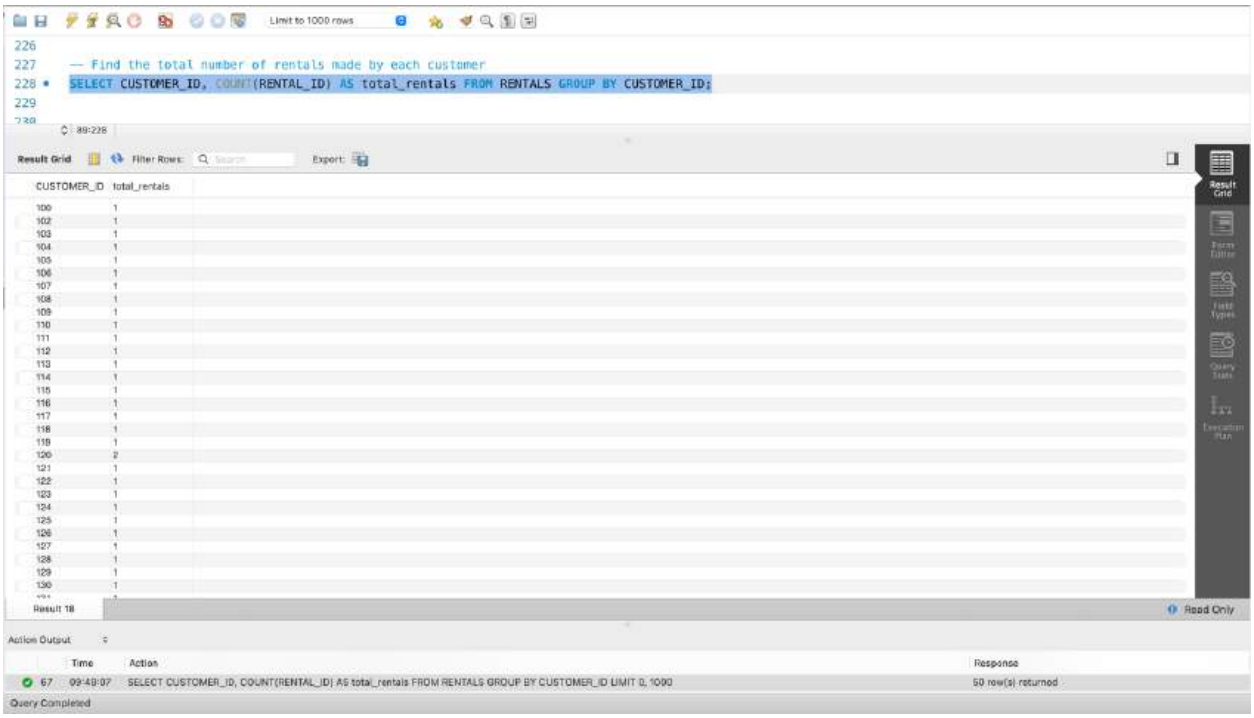
Action Output

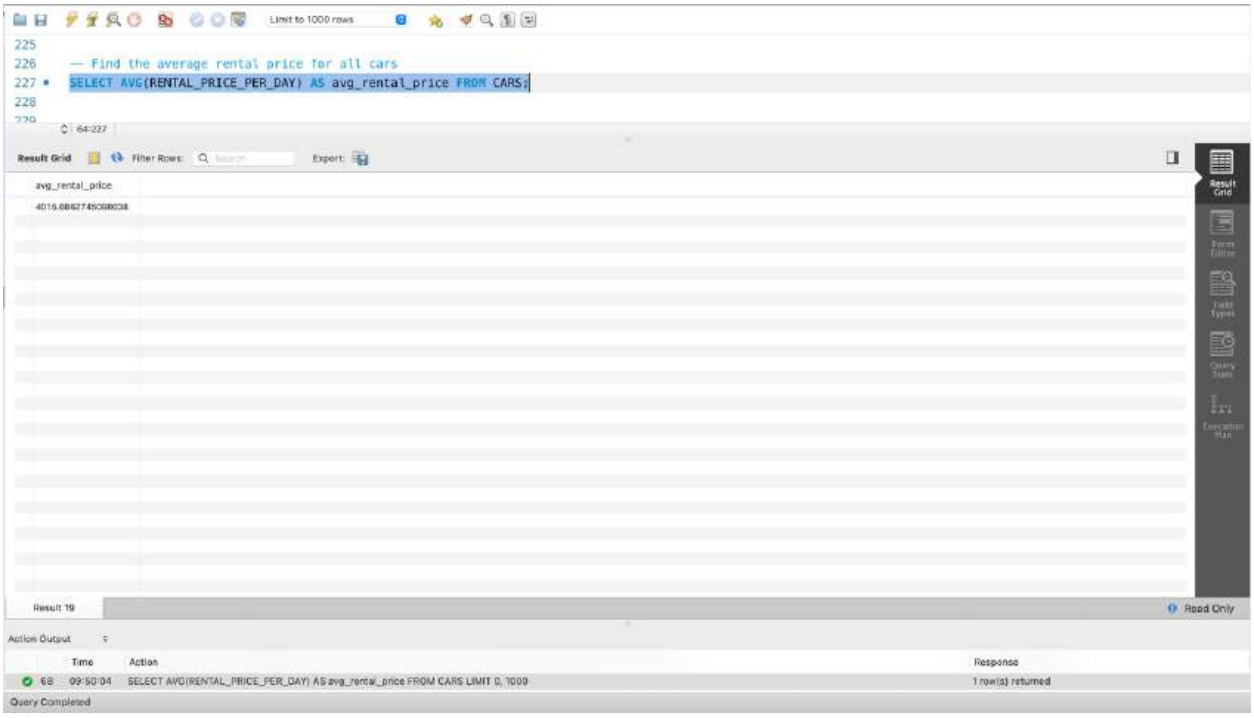
	Time	Action	Response
61	03:52:07	SELECT FIRST_NAME, LAST_NAME FROM CUSTOMERS WHERE CITY = 'Delhi' LIMIT 0, 1000	4 row(s) returned

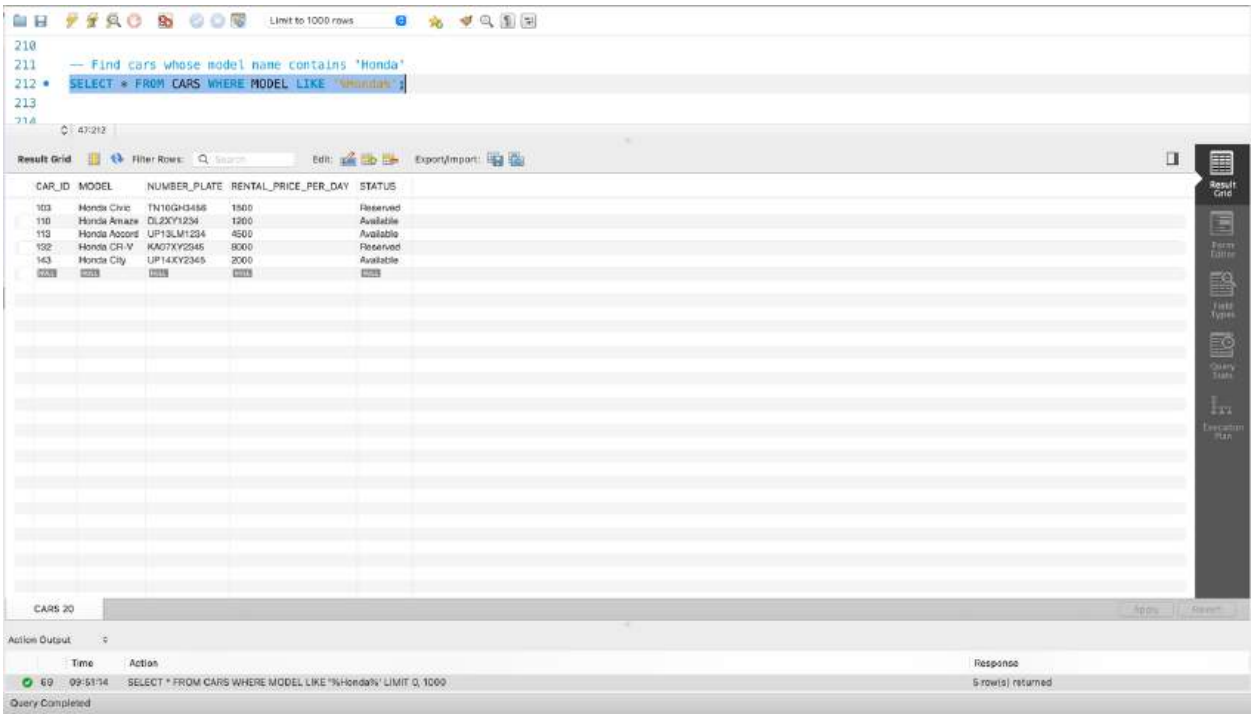
Query Completed


-- Find rentals that started between '2024-01-01' and '2024-06-30'
SELECT * FROM RENTALS WHERE START_DATE BETWEEN '2023-01-01' AND '2024-06-30';
Result Grid
RENTAL_ID CUSTOMER_ID CAR_ID PURPOSE START_DATE END_DATE TOTAL_AMOUNT
RENTALS 14
Action Output
Time Action Response
63 03:53:13 SELECT * FROM RENTALS WHERE START_DATE BETWEEN '2023-01-01' AND '2024-06-30' LIMIT 0, 1000 0 row(s) returned
Query Completed


-- Find customers who have rented a car with rental price greater than 3000
SELECT * FROM CUSTOMERS WHERE CUSTOMER_ID IN (SELECT CUSTOMER_ID FROM RENTALS WHERE CAR_ID IN (SELECT CAR_ID FROM CARS WHERE RENTAL_PRICE_PER_DAY > 3000));
Result Grid
CUSTOMER_ID FIRST_NAME LAST_NAME AGE EMAIL PHONE CITY STATE PINCODE
CUSTOMERS 16
Action Output
Time Action Response
65 09:47:26 SELECT * FROM CUSTOMERS WHERE CUSTOMER_ID IN (SELECT CUSTOMER_ID FROM RENTALS WHERE CAR_ID IN (SELECT CAR_ID FROM CARS WHERE RENTAL_PRICE_PER_DAY... 25 row(s) returned
Query Completed


Limit to 1000 rows
-- Find the total number of rentals made by each customer
SELECT CUSTOMER_ID, COUNT(RENTAL_ID) AS total_rentals FROM RENTALS GROUP BY CUSTOMER_ID;
Result Grid
Filter Rows:
Export:
CUSTOMER_ID total_rentals
Result 18
Read Only
Action Output
Time Action Response
67 09:49:07 SELECT CUSTOMER_ID, COUNT(RENTAL_ID) AS total_rentals FROM RENTALS GROUP BY CUSTOMER_ID LIMIT 0, 1000 50 row(s) returned
Query Completed


Limit to 1000 rows
-- Find the average rental price for all cars
SELECT AVG(RENTAL_PRICE_PER_DAY) AS avg_rental_price FROM CARS;
Result Grid
Filter Rows:
Export:
avg_rental_price
4016.686274509804
Result 19
Read Only
Action Output
Time Action Response
68 09:50:04 SELECT AVG(RENTAL_PRICE_PER_DAY) AS avg_rental_price FROM CARS LIMIT 0, 1000 1 row(s) returned
Query Completed



```
210
211    -- Find cars whose model name contains 'Honda'
212 •  SELECT * FROM CARS WHERE MODEL LIKE '%Honda%';
213
```

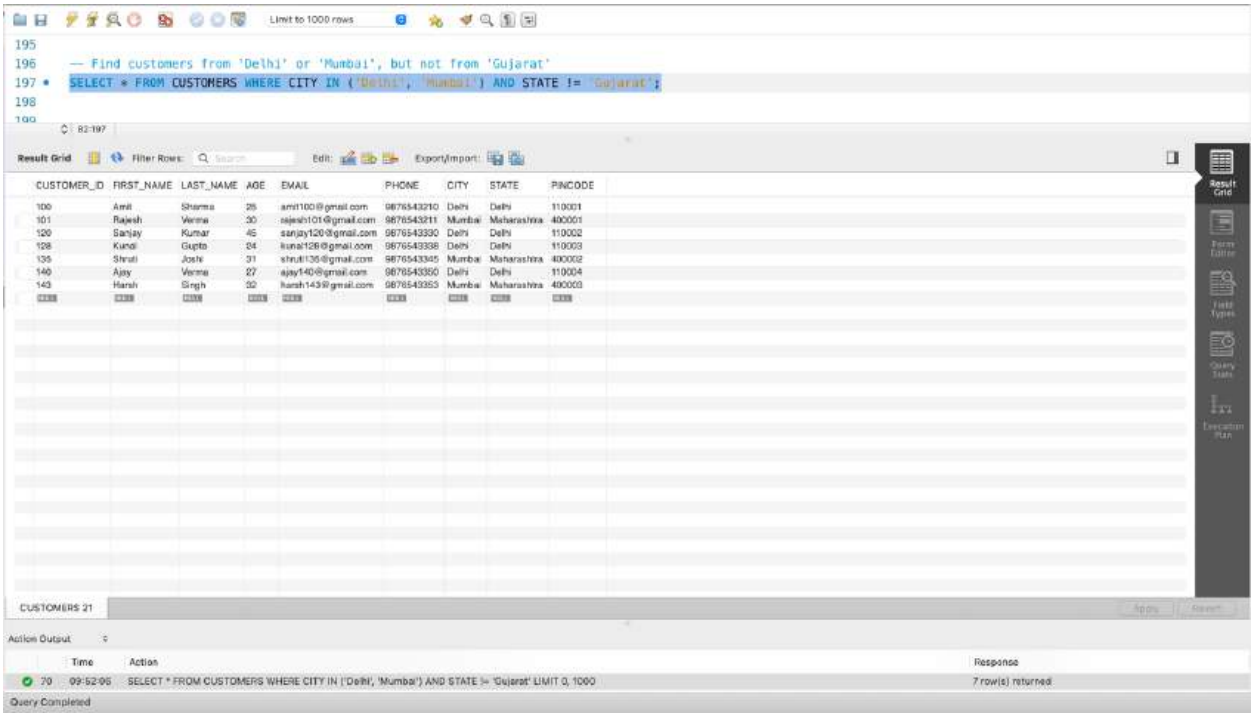
CAR_ID	MODEL	NUMBER_PLATE	RENTAL_PRICE_PER_DAY	STATUS
103	Honda Civic	TN16GH3456	1500	Reserved
110	Honda Amaze	DL20CY1234	1200	Available
113	Honda Accord	UP13JM1234	4500	Available
132	Honda CR-V	KA07XY2345	8000	Reserved
143	Honda City	UP14XY2345	2000	Available

CARS 20

Action Output

	Time	Action	Response
69	09:51:14	SELECT * FROM CARS WHERE MODEL LIKE '%Honda%' LIMIT 0, 1000	5 row(s) returned

Query Completed



```
195
196    -- Find customers from 'Delhi' or 'Mumbai', but not from 'Gujarat'
197 •  SELECT * FROM CUSTOMERS WHERE CITY IN ('Delhi', 'Mumbai') AND STATE != 'Gujarat';
198
```

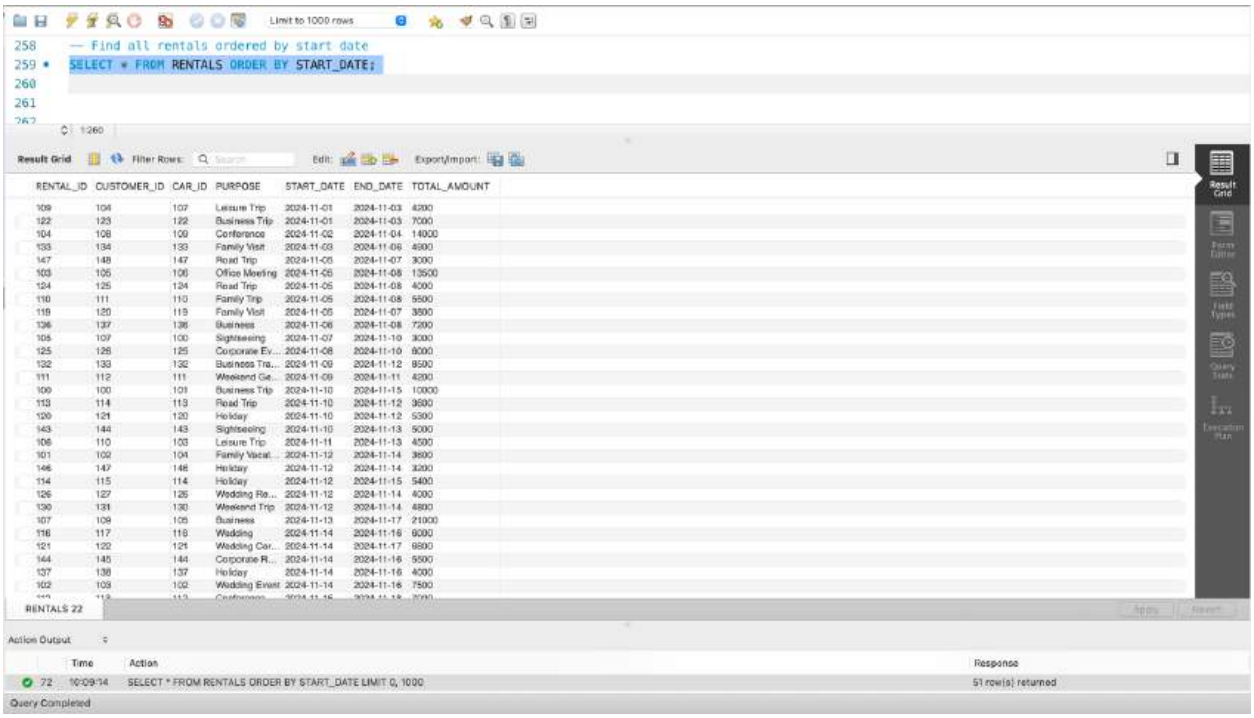
CUSTOMER_ID	FIRST_NAME	LAST_NAME	AGE	EMAIL	PHONE	CITY	STATE	PINCODE
100	Amit	Sharma	25	amit100@gmail.com	9876543210	Delhi	Delhi	110001
101	Rajesh	Verma	30	rajesh101@gmail.com	9876543211	Mumbai	Maharashtra	400001
120	Sanjay	Kumar	45	sanjay120@gmail.com	9876543330	Delhi	Delhi	110002
128	Kunal	Gupta	24	kunal128@gmail.com	9876543338	Delhi	Delhi	110003
135	Shruti	Joshi	31	shruti135@gmail.com	9876543345	Mumbai	Maharashtra	400002
140	Ajay	Verma	27	ajay140@gmail.com	9876543350	Delhi	Delhi	110004
143	Harsh	Singh	32	harsh143@gmail.com	9876543353	Mumbai	Maharashtra	400003

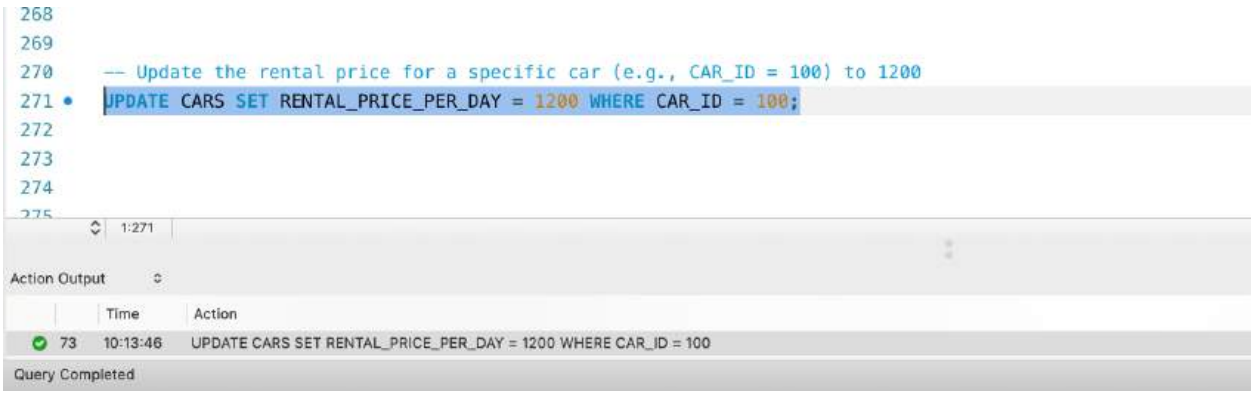
CUSTOMERS 21

Action Output

	Time	Action	Response
70	09:52:06	SELECT * FROM CUSTOMERS WHERE CITY IN ('Delhi', 'Mumbai') AND STATE != 'Gujarat' LIMIT 0, 1000	7 row(s) returned

Query Completed


-- Find all rentals ordered by start date
SELECT * FROM RENTALS ORDER BY START_DATE;
RENTAL_ID CUSTOMER_ID CAR_ID PURPOSE START_DATE END_DATE TOTAL_AMOUNT
RENTALS 22
Action Output
Time Action Response
72 10:09:14 SELECT * FROM RENTALS ORDER BY START_DATE LIMIT 0, 1000 51 row(s) returned
Query Completed


-- Update the rental price for a specific car (e.g., CAR_ID = 100) to 1200
UPDATE CARS SET RENTAL_PRICE_PER_DAY = 1200 WHERE CAR_ID = 100;
Action Output
Time Action
73 10:13:46 UPDATE CARS SET RENTAL_PRICE_PER_DAY = 1200 WHERE CAR_ID = 100
Query Completed

9. Conclusion

Our exploration of existing car rental platforms has provided valuable insights into essential features and user interaction points. By analyzing these sites, we identified key requirements such as rental cities, options for self-driving or chauffeur-driven vehicles, booking dates, and detailed car specifications model, price. This thorough requirement gathering ensures that our system encompasses all necessary data for a smooth rental experience.

In designing our car rental system, we have structured our database to include tables for rental preferences, rental dates, and vehicle details. This approach aligns with industry standards and enhances the system's functionality. By organizing data into clear and accessible tables, we ensure that users can effortlessly search for and book rental vehicles, while rental agencies can manage inventory and reservations efficiently.

The implementation of this car rental database system brings numerous real-time benefits. It streamlines the booking process, provides a user-friendly interface, and enables secure transactions. Rental companies can improve operational efficiency, reduce manual errors, and enhance customer satisfaction through timely and accurate information. Overall, our system offers a comprehensive solution that meets user needs and supports the dynamic operations of car rental businesses.