

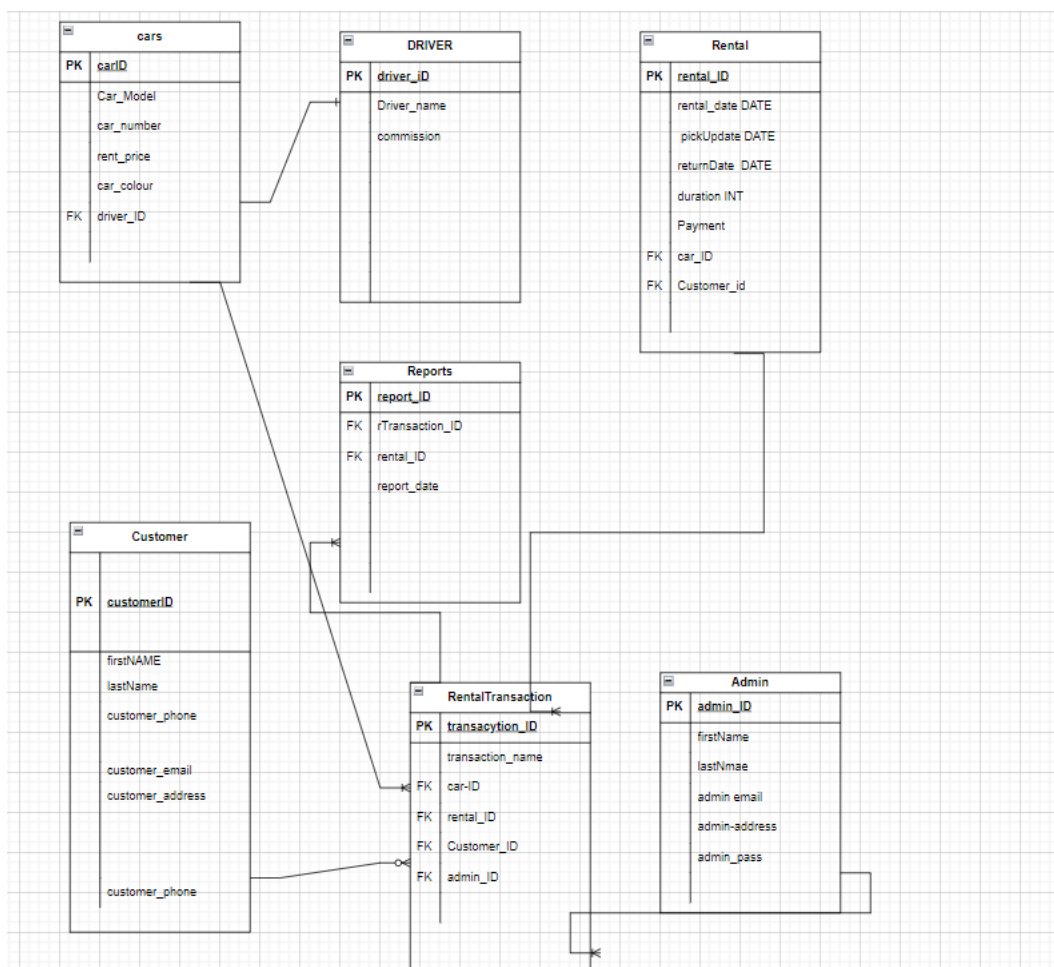
Car rental booking system

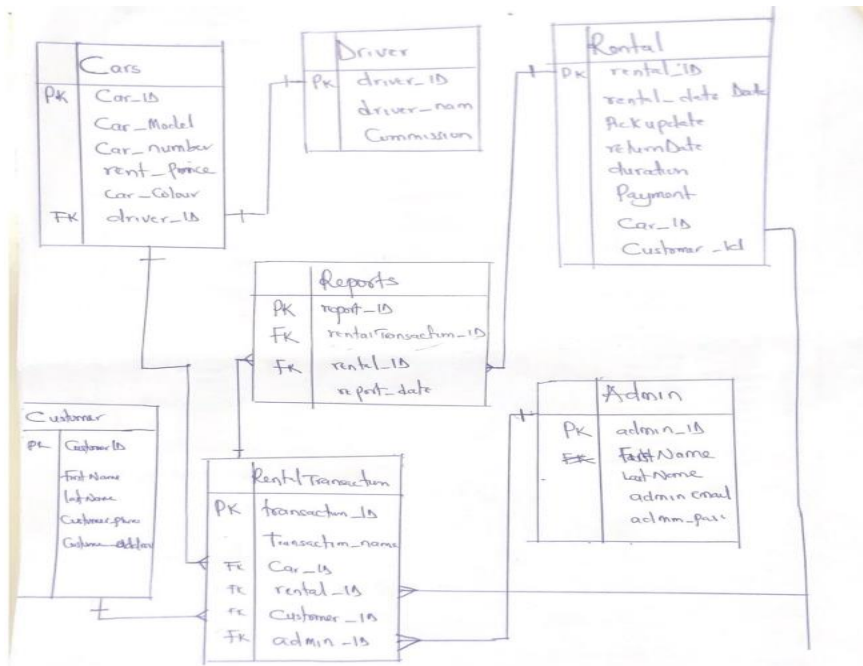
Term Project to include following sections - Each section carries.

The Entity-Relationship (ER) Diagram for the Car Rental Booking System identifies key entities and the relationships between them to model how data flows and connects within the system.

1. ER Diagram (Establish relationships between entities)

Car rental booking system





The Car Rental booking System's Entity-Relationship (ER) Diagram above has tables for admin, customers, Rental transactions, Rental, Driver, Cars and reports.

The system can track and handle consumer requests for rental cars. The system administrator can manage and update data pertaining to rentals and customer-initiated transactions because they have access to the status and information of their clients. Features aimed at guaranteeing the security and oversight of rental and customer data, transactions, and statuses are included in the ER diagram.

2. Physical design (Write create Table scripts. Scripts should include Primary Keys, Foreign Keys etc).

Car rental booking system

```
-- To create Customer Table
CREATE TABLE Customer (
    Customer_ID INT PRIMARY KEY,
    FirstName VARCHAR(255),
    LastName VARCHAR(255),
    Customer_Phone VARCHAR(20),
    Customer_Email VARCHAR(255),
    Customer_address VARCHAR(255)
);
```

```
-- To create Car Table
CREATE TABLE Car (
    Car_ID INT PRIMARY KEY,
    car_Model VARCHAR(255),
    car_number VARCHAR(20),
```

```

    rent_price DECIMAL(10, 2),
    car_Color VARCHAR(255),
    driver_ID INT,
    FOREIGN KEY (driver_ID) REFERENCES Driver(driver_ID)
);

-- To create Rentals Table
CREATE TABLE Rentals (
    rental_id INT PRIMARY KEY,
    rental_date DATE NOT NULL,
    pickUpDate DATE NOT NULL,
    return_date DATE NOT NULL,
    duration INT NOT NULL,
    Payment DECIMAL(10, 2) NOT NULL,
    customer_id INT,
    car_id INT,
    FOREIGN KEY (customer_id) REFERENCES Customer(Customer_ID),
    FOREIGN KEY (car_id) REFERENCES Car(Car_ID)
);

-- To create Driver Table
CREATE TABLE Driver (
    driver_ID INT PRIMARY KEY,
    driver_name VARCHAR(255),
    commission DECIMAL(5, 2)
);

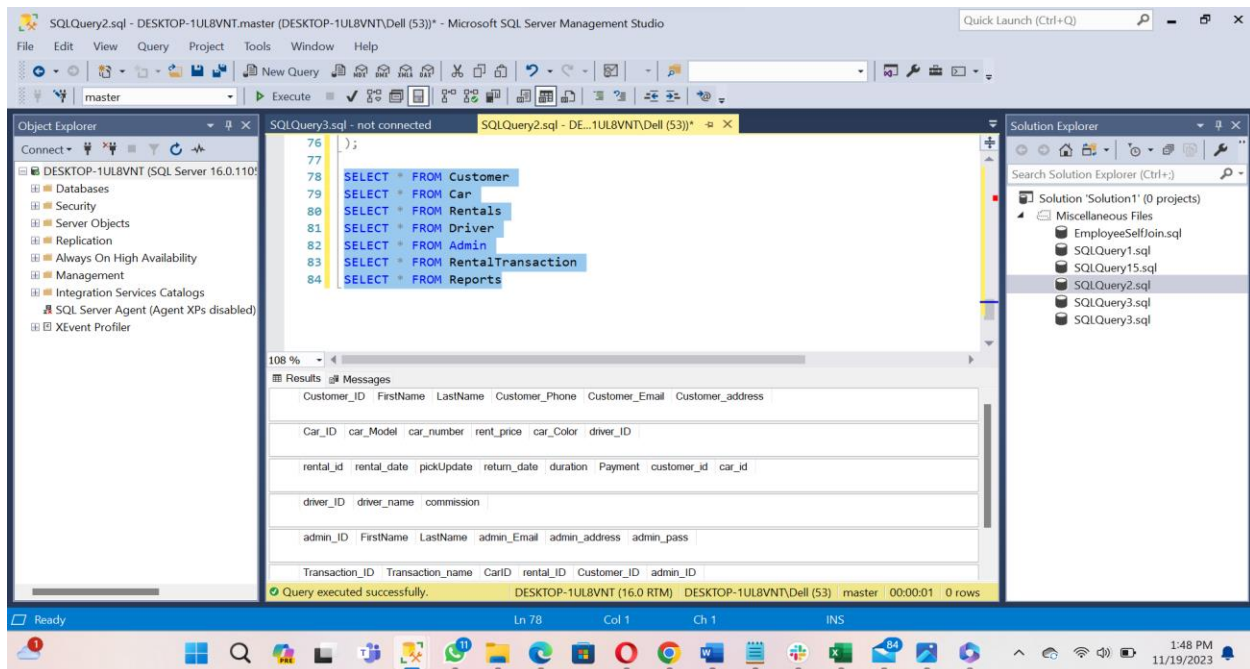
-- To create Admin Table
CREATE TABLE Admin (
    admin_ID INT PRIMARY KEY,
    FirstName VARCHAR(255),
    LastName VARCHAR(255),
    admin_Email VARCHAR(255),
    admin_address VARCHAR(255),
    admin_pass VARCHAR(255)
);

-- To create Transaction Table
CREATE TABLE RentalTransaction (
    Transaction_ID INT PRIMARY KEY,
    Transaction_name VARCHAR(255),
    CarID INT,
    rental_ID INT,
    Customer_ID INT,
    admin_ID INT,
    FOREIGN KEY (CarID) REFERENCES Car(Car_ID),
    FOREIGN KEY (rental_ID) REFERENCES Rentals(rental_id),
    FOREIGN KEY (Customer_ID) REFERENCES Customer(Customer_ID),
    FOREIGN KEY (admin_ID) REFERENCES Admin(admin_ID)
);

-- To create Reports Table
CREATE TABLE Reports (
    Report_ID INT PRIMARY KEY,
    RentalTransaction_ID INT,
    rental_ID INT,
    report_date DATE,

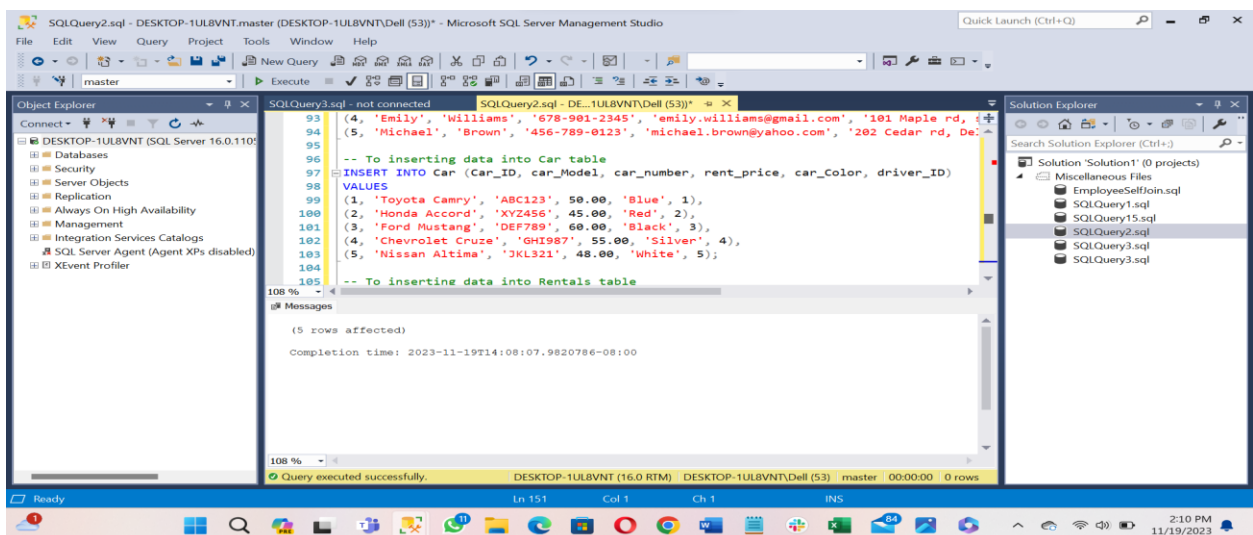
```

```
FOREIGN KEY (RentalTransaction_ID) REFERENCES RentalTransaction(Transaction_ID),
FOREIGN KEY (rental_ID) REFERENCES Rentals(rental_id)
);
```



3-Data (add at least 3 rows in each table. Write INSERT scripts)

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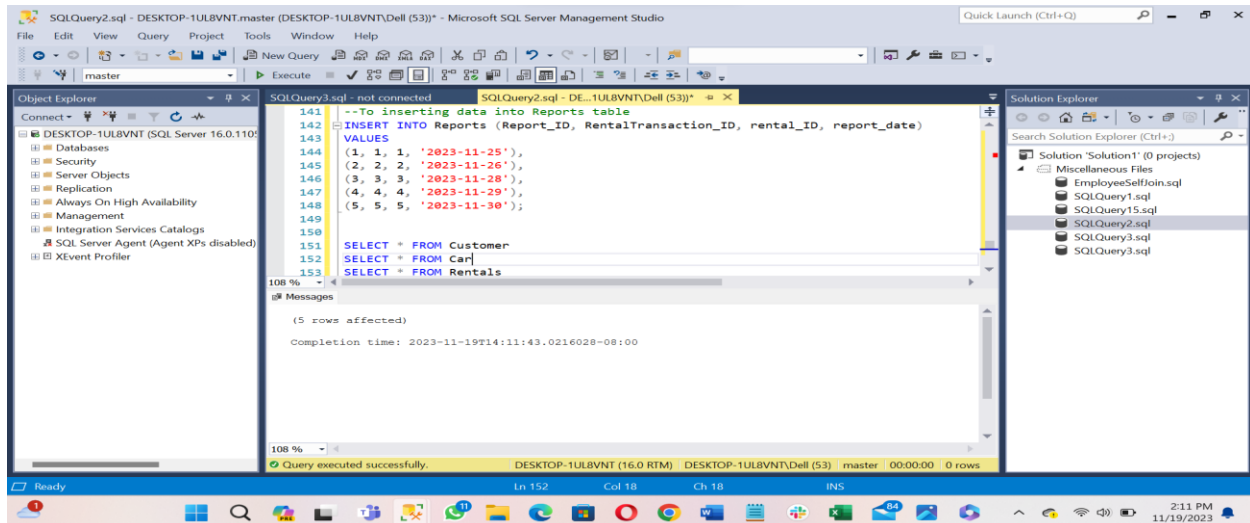


--To Insert data into Customer table

```

INSERT INTO Customer (Customer_ID, FirstName, LastName, Customer_Phone, Customer_Email,
Customer_address)
VALUES
(1, 'Jalal', 'Ade', '672-456-7890', 'jalal.dade@gmail.com', '131 Ave , surrey'),
(2, 'Jane', 'Smith', '987-654-3210', 'jane.smith@yahoo.com', '456 Oak St, Burnaby'),
(3, 'Robert', 'Johnson', '345-678-9012', 'robert.johnson@gmail.com', '789 Pine ave,
surrey'),
(4, 'Emily', 'Williams', '678-901-2345', 'emily.williams@gmail.com', '101 Maple rd,
surrey'),
(5, 'Michael', 'Brown', '456-789-0123', 'michael.brown@yahoo.com', '202 Cedar rd,
Delta');

```



-- To insert data into Car table

```

INSERT INTO Car (Car_ID, car_Model, car_number, rent_price, car_Color, driver_ID)
VALUES
(1, 'Toyota Camry', 'ABC123', 50.00, 'Blue', 1),
(2, 'Honda Accord', 'XYZ456', 45.00, 'Red', 2),
(3, 'Ford Mustang', 'DEF789', 60.00, 'Black', 3),
(4, 'Chevrolet Cruze', 'GHI987', 55.00, 'Silver', 4),
(5, 'Nissan Altima', 'JKL321', 48.00, 'White', 5);

```

-- To insert data into Rentals table

```

INSERT INTO Rentals (rental_id, rental_date, pickUpdate, return_date, duration, Payment,
customer_id, car_id)
VALUES
(1, '2023-11-19', '2023-11-20', '2023-11-25', 5, 250.00, 1, 1),
(2, '2023-11-20', '2023-11-22', '2023-11-26', 4, 180.00, 2, 2),
(3, '2023-11-21', '2023-11-23', '2023-11-28', 5, 300.00, 3, 3),
(4, '2023-11-22', '2023-11-24', '2023-11-29', 5, 275.00, 4, 4),
(5, '2023-11-23', '2023-11-25', '2023-11-30', 5, 260.00, 5, 5);

```

-- To insert data into Driver table

```

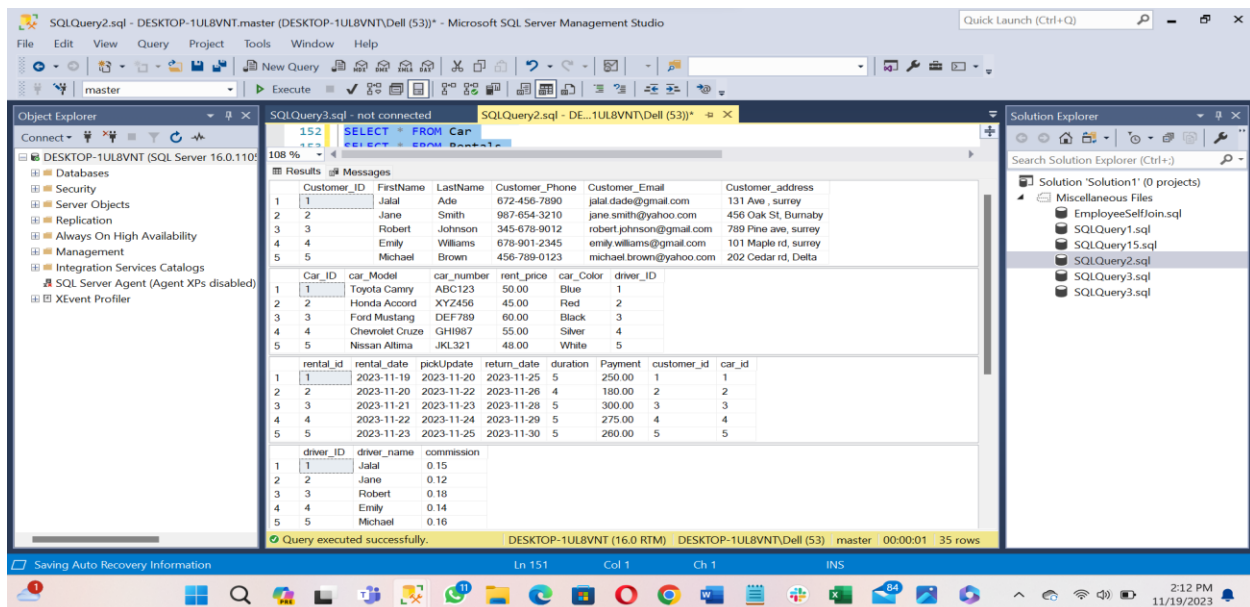
INSERT INTO Driver (driver_ID, driver_name, commission)
VALUES
(1, 'Jalal', 0.15),
(2, 'Jane', 0.12),
(3, 'Robert', 0.18),
(4, 'Emily', 0.14),
(5, 'Michael', 0.16);

```

```
-- To insert data into Admin table
INSERT INTO Admin (admin_ID, FirstName, LastName, admin_Email, admin_address, admin_pass)
VALUES
(1, 'Admin1', 'Smith', 'admin1@gmail.com', '123 Main St, AdminCityA', 'adminpass1'),
(2, 'Admin2', 'Johnson', 'admin2@gmail.com', '456 Oak St, AdminCityB', 'adminpass2'),
(3, 'Admin3', 'Williams', 'admin3@gmail.com', '789 Pine St, AdminCityC', 'adminpass3'),
(4, 'Admin4', 'Brown', 'admin4@gmail.com', '101 Maple St, AdminCityD', 'adminpass4'),
(5, 'Admin5', 'Davis', 'admin5@gmail.com', '202 Cedar St, AdminCityE', 'adminpass5');

-- Insert data into RentalTransaction table
INSERT INTO RentalTransaction (Transaction_ID, Transaction_name, CarID, rental_ID,
Customer_ID, admin_ID)
VALUES
(1, 'Car Rental', 1, 1, 1, 1),
(2, 'Car Rental', 2, 2, 2, 2),
(3, 'Car Rental', 3, 3, 3, 3),
(4, 'Car Rental', 4, 4, 4, 4),
(5, 'Car Rental', 5, 5, 5, 5);

--To insert data into Reports table
INSERT INTO Reports (Report_ID, RentalTransaction_ID, rental_ID, report_date)
VALUES
(1, 1, 1, '2023-11-25'),
(2, 2, 2, '2023-11-26'),
(3, 3, 3, '2023-11-28'),
(4, 4, 4, '2023-11-29'),
(5, 5, 5, '2023-11-30');
```

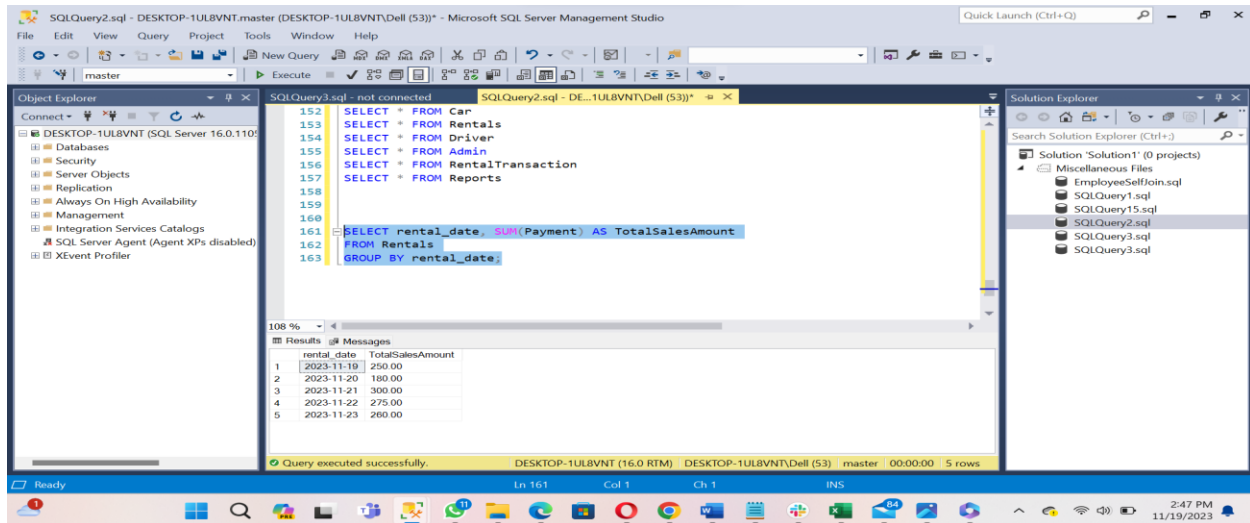


4.Reports (Write at least 3 SQL queries to generate reports. Report 1: To find the total sales amount per day/ per month etc

Car rental booking system

The below query is to calculate the total sales amount for each day

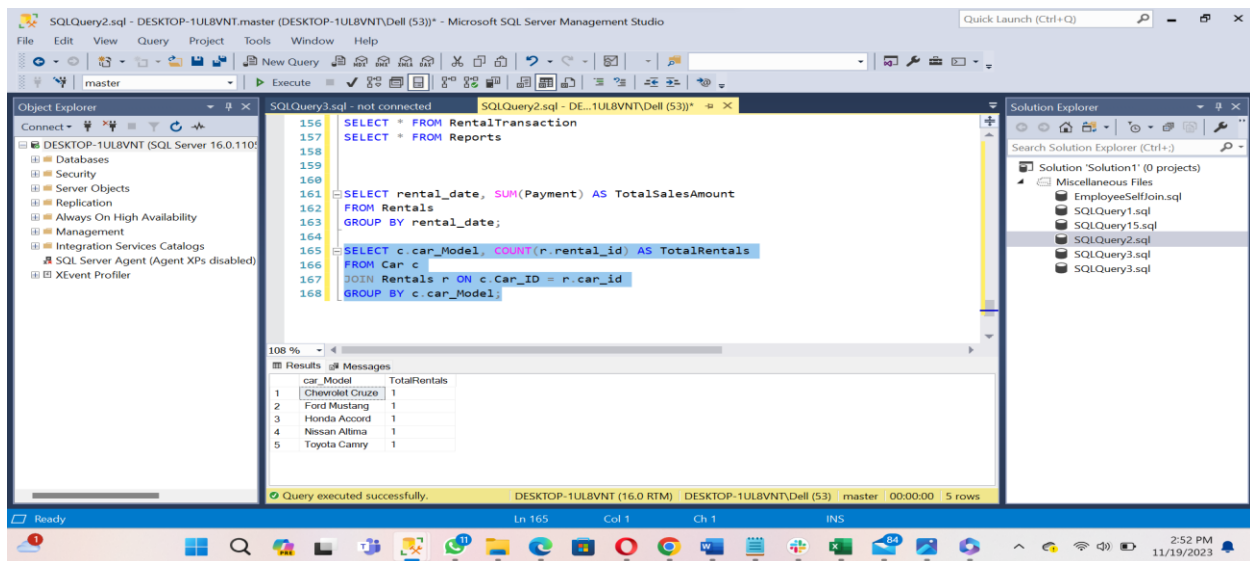
```
SELECT rental_date, SUM(Payment) AS TotalSalesAmount
FROM Rentals
GROUP BY rental_date;
```



This is calculate total Rentals per Car Model:

This query shows the total number of rentals for each car model.

```
SELECT c.car_Model, COUNT(r.rental_id) AS TotalRentals
FROM Car c
JOIN Rentals r ON c.Car_ID = r.car_id
GROUP BY c.car_Model;
```



This is to calculate Monthly Revenue :

This query displays the monthly revenue trend over time.

```

SELECT YEAR(rental_date) AS Year, MONTH(rental_date) AS Month, SUM(Payment) AS
MonthlyRevenue
FROM Rentals
GROUP BY YEAR(rental_date), MONTH(rental_date)
ORDER BY Year, Month;

```

