Coding Challenge 3

Car Rental System

Table Creation & Data Insertion:

coding challege 3 car rental*

Limit to 1000 rows

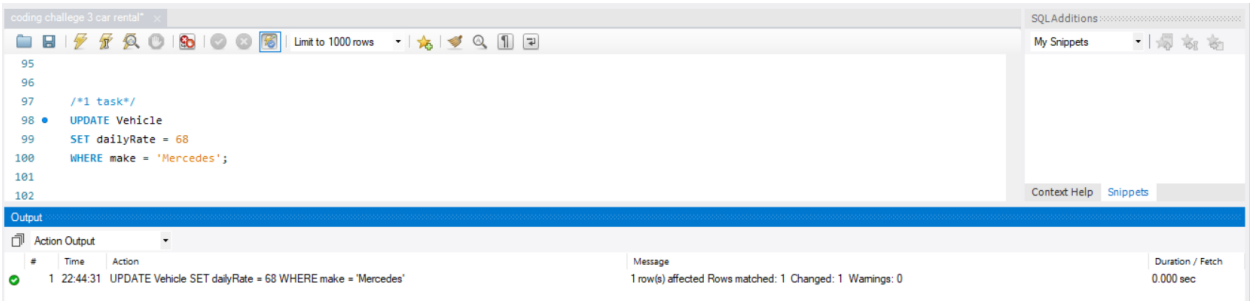
```sql
/* coding challenge 3*/

create database if not exists carrental;
use carrental;

CREATE TABLE Vehicle (
    vehicleID INT PRIMARY KEY,
    make VARCHAR(255),
    model VARCHAR(255),
    year INT,
    dailyRate DECIMAL(10, 2),
    status enum('1','0'),
    passengerCapacity INT,
    engineCapacity int
);


CREATE TABLE Customer (
    customerID INT PRIMARY KEY,
    firstName VARCHAR(255),
    lastName VARCHAR(255),
    email VARCHAR(255),
    phoneNumber VARCHAR(20)
);

CREATE TABLE Lease (
    leaseID INT PRIMARY KEY,
    vehicleID INT,
    customerID INT,
    startDate DATE,
    endDate DATE,
    type VARCHAR(20),
    FOREIGN KEY (vehicleID) REFERENCES Vehicle(vehicleID),
    FOREIGN KEY (customerID) REFERENCES Customer(customerID)
);

CREATE TABLE Payment (
    paymentID INT PRIMARY KEY,
    leaseID INT,
    paymentDate DATE,
    amount DECIMAL(10, 2),
    FOREIGN KEY (leaseID) REFERENCES Lease(leaseID)
);
```

```sql
insert into vehicle values
    (1,'Toyota','Camry',2022,50.00,'1',4,1450),
    (2,'Honda','Civic',2023,45.00,'1',7,1500),
    (3,'Ford','Focus',2022,48.00,'0',4,1400),
    (4,'Nissan','Altima',2023,52.00,'1',7,1200),
    (5,'Cheverlet','Malibu',2022,47.00,'1',4,1800),
    (6,'Hyundai','Sonata',2023,49.00,'0',7,1400),
    (7,'BMW','3 Series',2023,60.00,'1',7,2499),
    (8,'Mercedes','C-Class',2022,58.00,'1',8,2599),
    (9,'Audi','A4',2022,55.00,'0',4,2500),
    (10,'Lexus','ES',2023,54.00,'1',4,2500);

insert into customer(customerid,firstname,lastname,phonenumber) values
    (1,'John','Doe','555-555-5555-'),
    (2,'Jane','smith','555-123-4567'),
    (3,'Robert','Johnson','555-789-1234'),
    (4,'Sarah','Brown','555-456-7890'),
    (5,'David','Lee','555-787-6543'),
    (6,'Laura','hall','555-234-5678'),
    (7,'micheal','davis','555-876-5432'),
    (8,'emma','wilson','555-423-1098'),
    (9,'william','taylor','555-321-6547'),
    (10,'olivia','adams','555-765-4321');
update customer SEt email = concat(firstname,lastname,'@example.com');
```

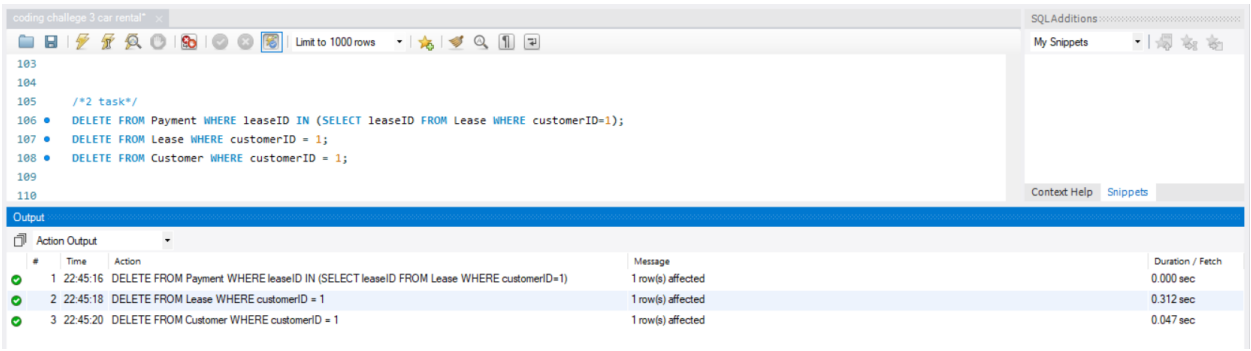
```sql
insert into lease values
(1,1,1,'2023-01-01','2023-01-05','daily'),
(2,2,2,'2023-02-15','2023-02-28','monthly'),
(3,3,3,'2023-03-10','2023-03-15','daily'),
(4,4,4,'2023-04-20','2023-04-30','monthly'),
(5,5,5,'2023-05-05','2023-05-10','daily'),
(6,4,3,'2023-06-15','2023-06-30','monthly'),
(7,7,7,'2023-07-01','2023-07-10','daily'),
(8,8,8,'2023-08-12','2023-08-15','monthly'),
(9,3,3,'2023-09-07','2023-09-10','daily'),
(10,10,10,'2023-10-10','2023-10-31','monthly');

insert into payment values
    (1,1,'2023-01-03',200),
    (2,2,'2023-02-03',1000),
    (3,3,'2023-03-03',75),
    (4,4,'2023-04-03',900),
    (5,5,'2023-05-03',60),
    (6,6,'2023-06-03',1200),
    (7,7,'2023-07-03',40),
    (8,8,'2023-08-03',1100),
    (9,9,'2023-09-03',80),
    (10,10,'2023-10-03',1500);
```

TASK:

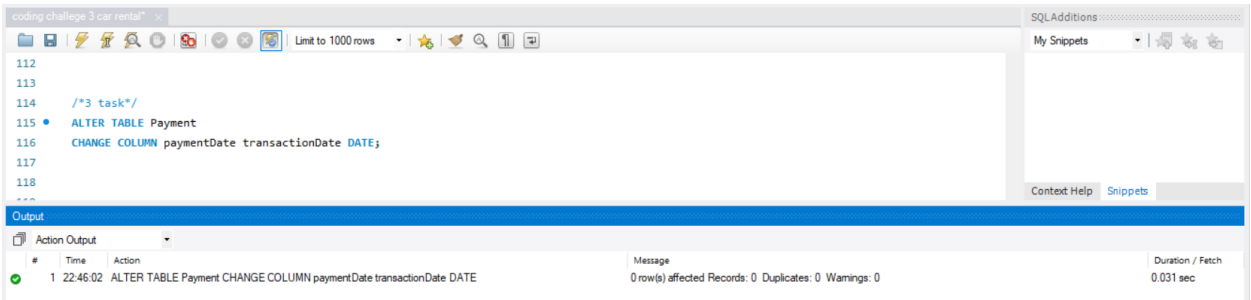
1.


coding challege 3 car rental*
Limit to 1000 rows
SQL Additions
My Snippets
95
96
97 /*1 task*/
98 UPDATE Vehicle
99 SET dailyRate = 68
100 WHERE make = 'Mercedes';
101
102
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:44:31 UPDATE Vehicle SET dailyRate = 68 WHERE make = 'Mercedes' 1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0 0.000 sec

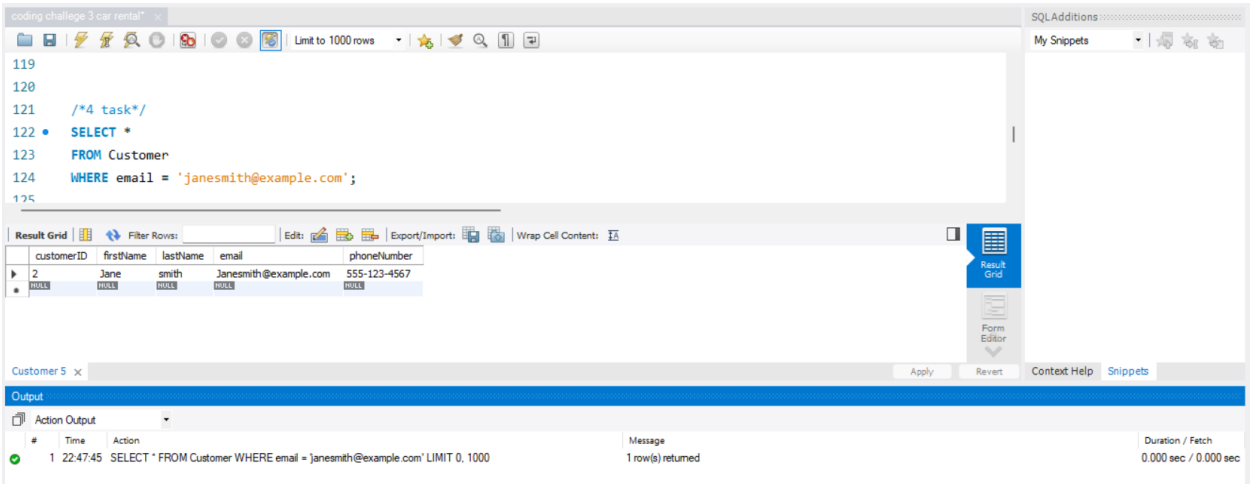
2.


coding challege 3 car rental*
Limit to 1000 rows
SQL Additions
My Snippets
103
104
105 /*2 task*/
106 DELETE FROM Payment WHERE leaseID IN (SELECT leaseID FROM Lease WHERE customerID=1);
107 DELETE FROM Lease WHERE customerID = 1;
108 DELETE FROM Customer WHERE customerID = 1;
109
110
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:45:16 DELETE FROM Payment WHERE leaseID IN (SELECT leaseID FROM Lease WHERE customerID=1) 1 row(s) affected 0.000 sec
2 22:45:18 DELETE FROM Lease WHERE customerID = 1 1 row(s) affected 0.312 sec
3 22:45:20 DELETE FROM Customer WHERE customerID = 1 1 row(s) affected 0.047 sec

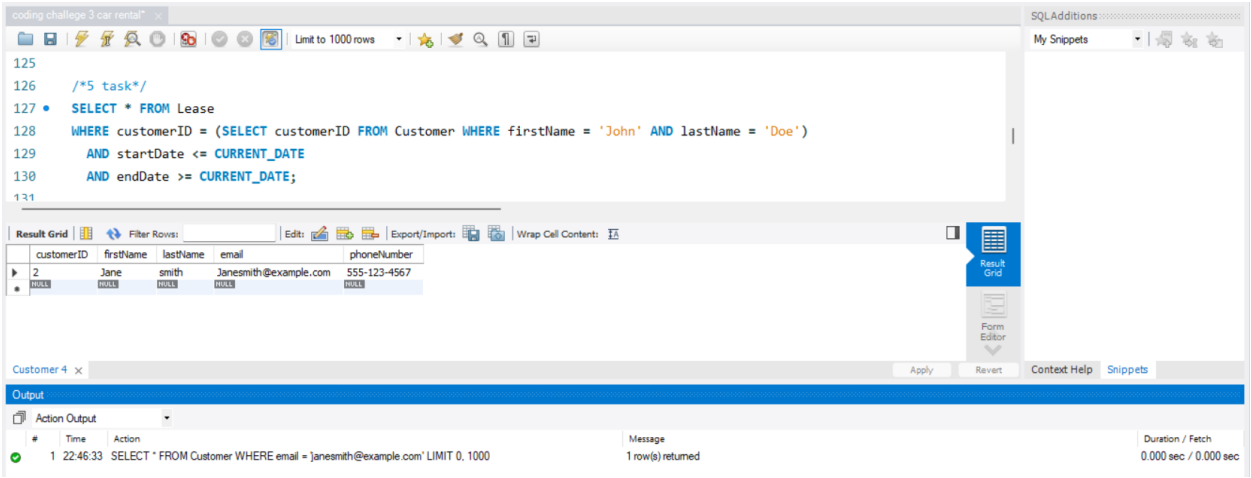
3.


coding challege 3 car rental*
Limit to 1000 rows
SQL Additions
My Snippets
112
113
114 /*3 task*/
115 ALTER TABLE Payment
116 CHANGE COLUMN paymentDate transactionDate DATE;
117
118
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:46:02 ALTER TABLE Payment CHANGE COLUMN paymentDate transactionDate DATE 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.031 sec

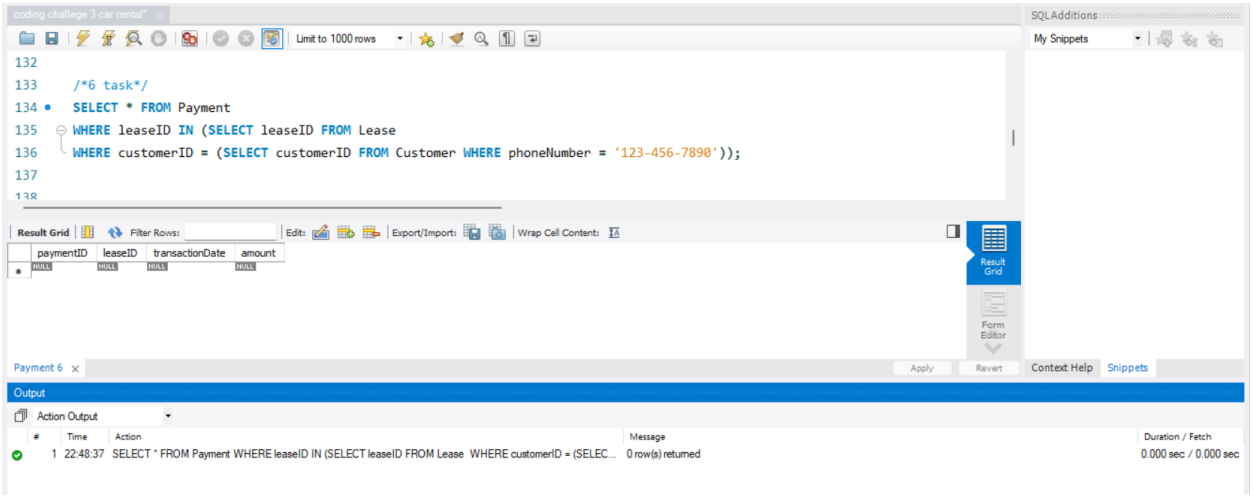
4.


coding challenge 3 car rental*
Limit to 1000 rows
SQLAdditions
My Snippets
119
120
121 /*4 task*/
122 SELECT *
123 FROM Customer
124 WHERE email = 'janesmith@example.com';
125
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
customerID firstName lastName email phoneNumber
2 Jane smith Janesmith@example.com 555-123-4567
NULL NULL NULL NULL NULL
Result Grid
Form Editor
Customer 5
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:47:45 SELECT * FROM Customer WHERE email = 'janesmith@example.com' LIMIT 0, 1000 1 row(s) returned 0.000 sec / 0.000 sec

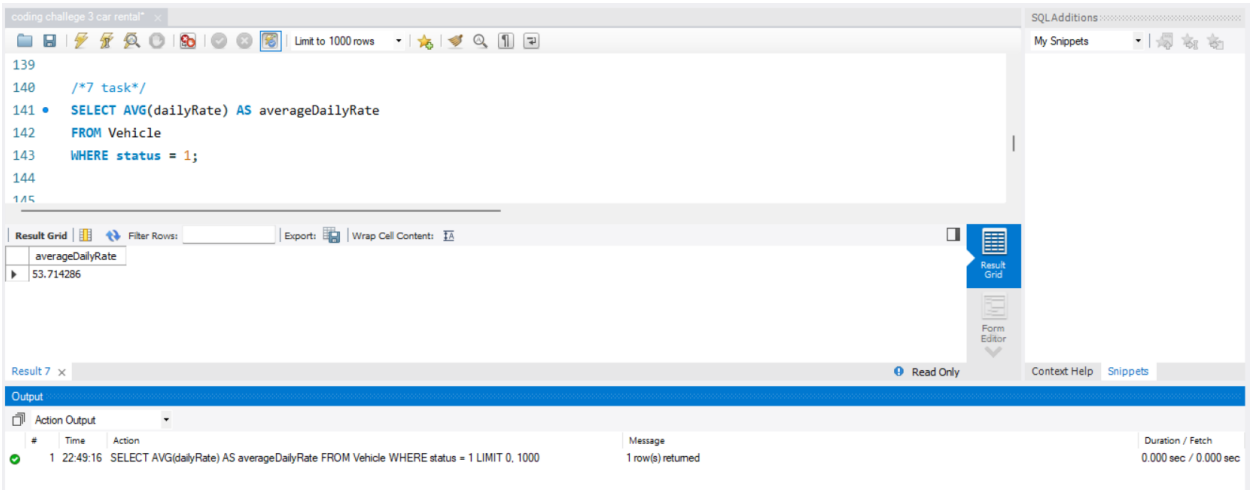
5.


coding challenge 3 car rental*
Limit to 1000 rows
SQLAdditions
My Snippets
125
126 /*5 task*/
127 SELECT * FROM Lease
128 WHERE customerID = (SELECT customerID FROM Customer WHERE firstName = 'John' AND lastName = 'Doe')
129 AND startDate <= CURRENT_DATE
130 AND endDate >= CURRENT_DATE;
131
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
customerID firstName lastName email phoneNumber
2 Jane smith Janesmith@example.com 555-123-4567
NULL NULL NULL NULL NULL
Result Grid
Form Editor
Customer 4
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:46:33 SELECT * FROM Customer WHERE email = 'janesmith@example.com' LIMIT 0, 1000 1 row(s) returned 0.000 sec / 0.000 sec

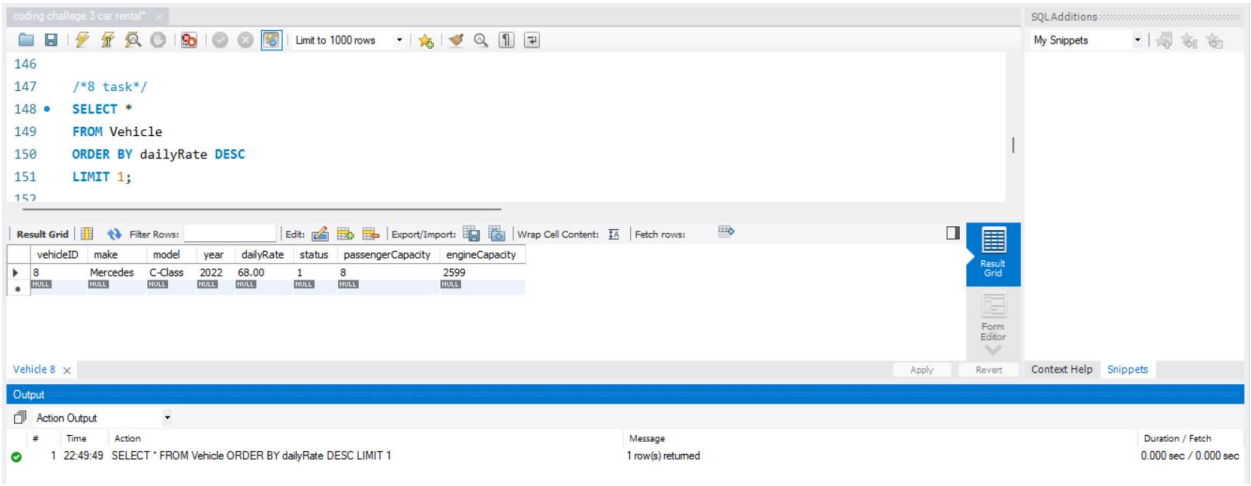
6.


coding challege 3 car rental*
Limit to 1000 rows
SQLAdditions
My Snippets
132
133 /*6 task*/
134 SELECT * FROM Payment
135 WHERE leaseID IN (SELECT leaseID FROM Lease
136 WHERE customerID = (SELECT customerID FROM Customer WHERE phoneNumber = '123-456-7890'));
137
138
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
paymentID leaseID transactionDate amount
NULL NULL NULL NULL
Result Grid
Form Editor
Payment 6
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:48:37 SELECT * FROM Payment WHERE leaseID IN (SELECT leaseID FROM Lease WHERE customerID = (SELEC... 0 row(s) returned 0.000 sec / 0.000 sec

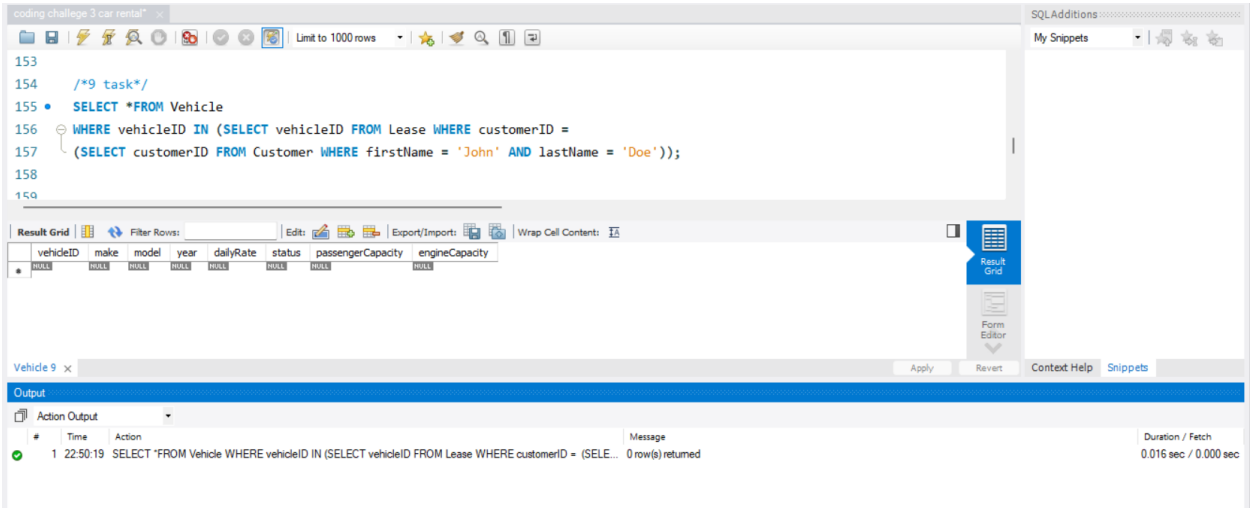
7.


coding challege 3 car rental*
Limit to 1000 rows
SQLAdditions
My Snippets
139
140 /*7 task*/
141 SELECT AVG(dailyRate) AS averageDailyRate
142 FROM Vehicle
143 WHERE status = 1;
144
145
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
averageDailyRate
53.714286
Result Grid
Form Editor
Result 7
Read Only
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:49:16 SELECT AVG(dailyRate) AS averageDailyRate FROM Vehicle WHERE status = 1 LIMIT 0, 1000 1 row(s) returned 0.000 sec / 0.000 sec

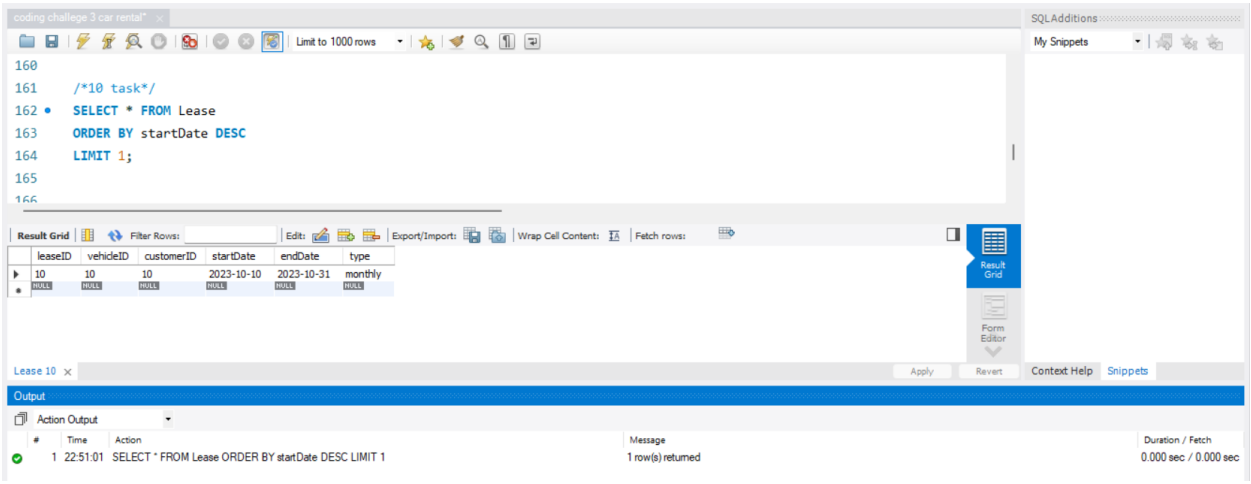
8.


coding challege 3 car rental*
Limit to 1000 rows
SQLAdditions
My Snippets
146
147 /*8 task*/
148 SELECT *
149 FROM Vehicle
150 ORDER BY dailyRate DESC
151 LIMIT 1;
152
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
Fetch rows:
vehicleID make model year dailyRate status passengerCapacity engineCapacity
8 Mercedes C-Class 2022 68.00 1 8 2599
Result Grid
Form Editor
Vehicle 8
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:49:49 SELECT * FROM Vehicle ORDER BY dailyRate DESC LIMIT 1 1 row(s) returned 0.000 sec / 0.000 sec

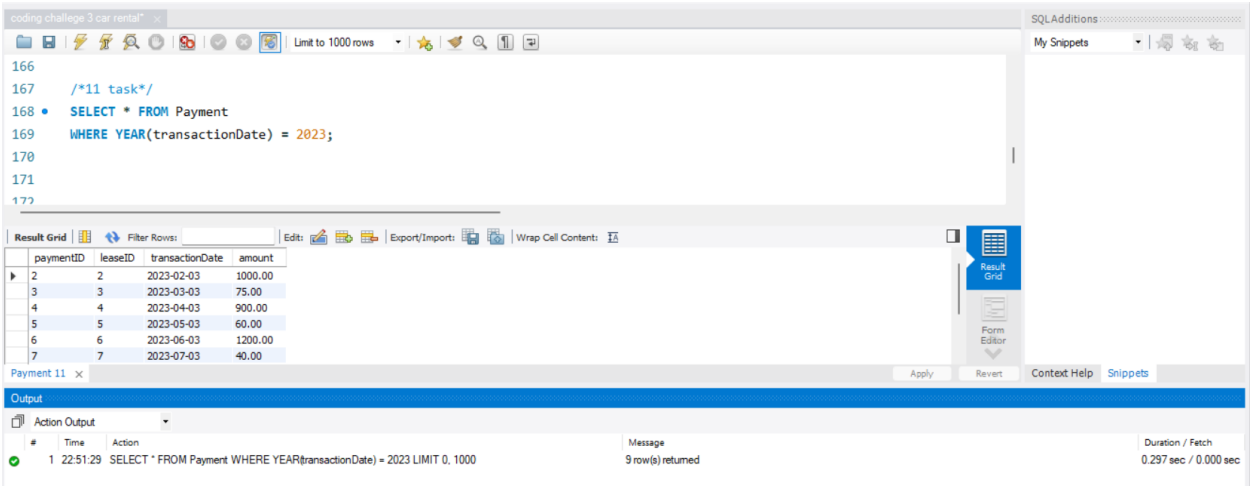
9.


coding challege 3 car rental*
Limit to 1000 rows
SQLAdditions
My Snippets
153
154 /*9 task*/
155 SELECT *FROM Vehicle
156 WHERE vehicleID IN (SELECT vehicleID FROM Lease WHERE customerID =
157 (SELECT customerID FROM Customer WHERE firstName = 'John' AND lastName = 'Doe'));
158
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
vehicleID make model year dailyRate status passengerCapacity engineCapacity
Result Grid
Form Editor
Vehicle 9
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:50:19 SELECT *FROM Vehicle WHERE vehicleID IN (SELECT vehicleID FROM Lease WHERE customerID = (SELE... 0 row(s) returned 0.016 sec / 0.000 sec

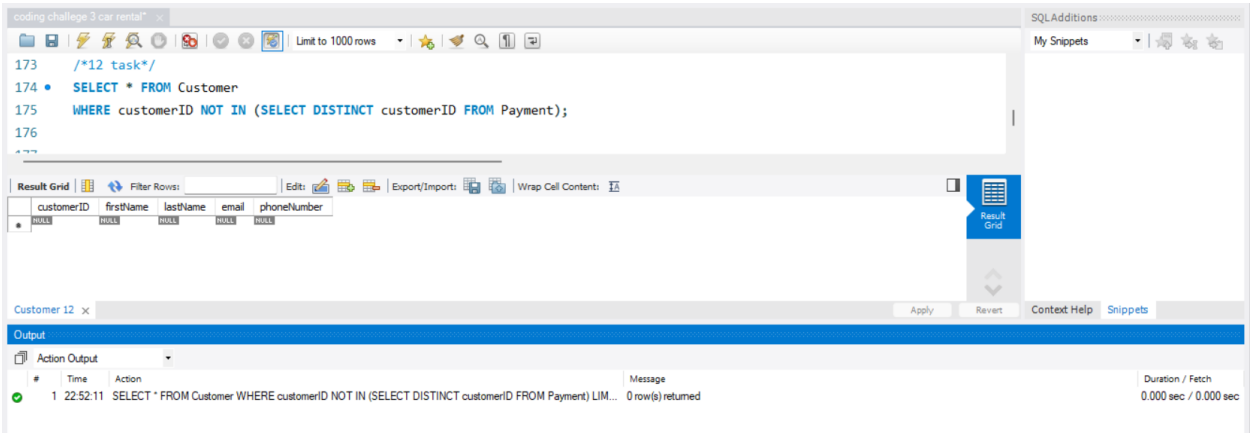
10.


coding challege 3 car rental*
Limit to 1000 rows
SQLAdditions
My Snippets
160
161 /*10 task*/
162 • SELECT * FROM Lease
163 ORDER BY startDate DESC
164 LIMIT 1;
165
166
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
Fetch rows:
leaseID vehicleID customerID startDate endDate type
10 10 10 2023-10-10 2023-10-31 monthly
NULL NULL NULL NULL NULL NULL
Result Grid
Form Editor
Lease 10
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:51:01 SELECT * FROM Lease ORDER BY startDate DESC LIMIT 1 1 row(s) returned 0.000 sec / 0.000 sec

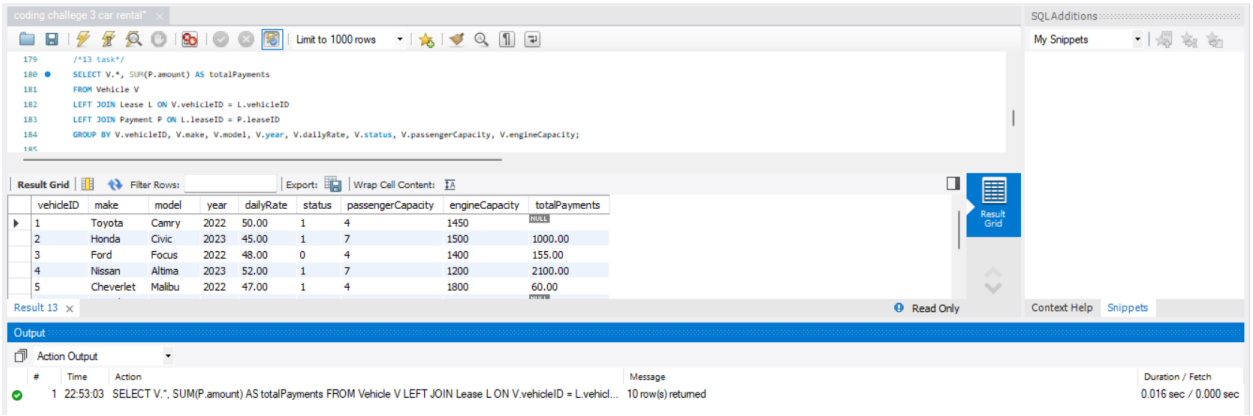
11.


coding challege 3 car rental*
Limit to 1000 rows
SQLAdditions
My Snippets
166
167 /*11 task*/
168 • SELECT * FROM Payment
169 WHERE YEAR(transactionDate) = 2023;
170
171
172
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
paymentID leaseID transactionDate amount
2 2 2023-02-03 1000.00
3 3 2023-03-03 75.00
4 4 2023-04-03 900.00
5 5 2023-05-03 60.00
6 6 2023-06-03 1200.00
7 7 2023-07-03 40.00
Result Grid
Form Editor
Payment 11
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:51:29 SELECT * FROM Payment WHERE YEAR(transactionDate) = 2023 LIMIT 0, 1000 9 row(s) returned 0.297 sec / 0.000 sec

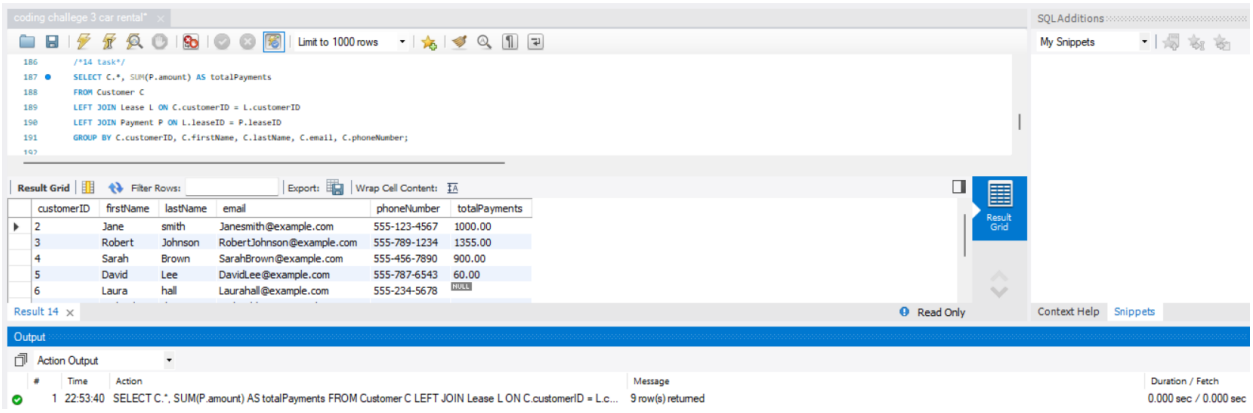
12.


coding challege 3 car rental*
Limit to 1000 rows
SQLAdditions
My Snippets
173 /*12 task*/
174 SELECT * FROM Customer
175 WHERE customerID NOT IN (SELECT DISTINCT customerID FROM Payment);
176
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
customerID firstName lastName email phoneNumber
NULL NULL NULL NULL NULL
Result Grid
Customer 12
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:52:11 SELECT * FROM Customer WHERE customerID NOT IN (SELECT DISTINCT customerID FROM Payment) LIM... 0 row(s) returned 0.000 sec / 0.000 sec

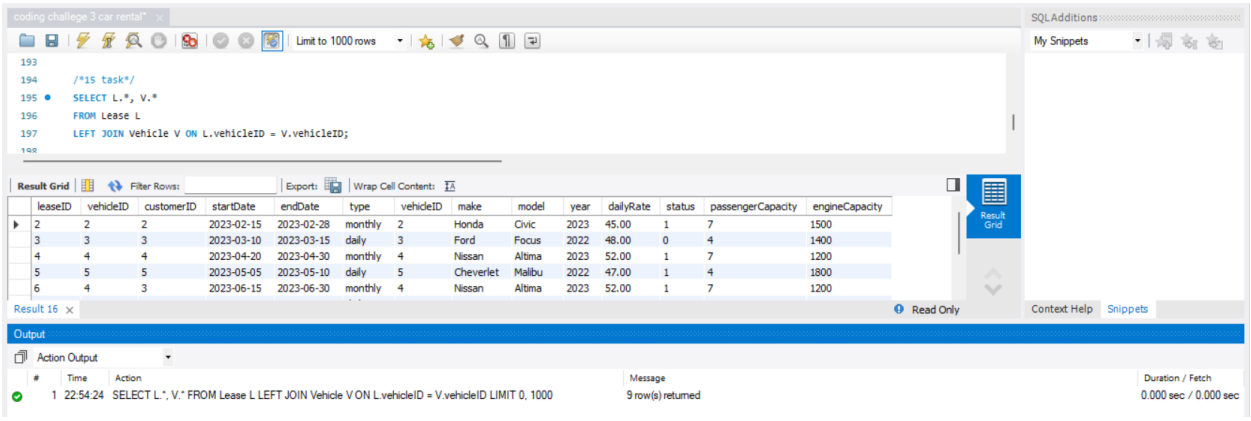
13.


coding challege 3 car rental*
Limit to 1000 rows
SQLAdditions
My Snippets
179 /*13 task*/
180 SELECT V.*, SUM(P.amount) AS totalPayments
181 FROM Vehicle V
182 LEFT JOIN Lease L ON V.vehicleID = L.vehicleID
183 LEFT JOIN Payment P ON L.leaseID = P.leaseID
184 GROUP BY V.vehicleID, V.make, V.model, V.year, V.dailyRate, V.status, V.passengerCapacity, V.engineCapacity;
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
vehicleID make model year dailyRate status passengerCapacity engineCapacity totalPayments
1 Toyota Camry 2022 50.00 1 4 1450 NULL
2 Honda Civic 2023 45.00 1 7 1500 1000.00
3 Ford Focus 2022 48.00 0 4 1400 155.00
4 Nissan Altima 2023 52.00 1 7 1200 2100.00
5 Cheverlet Malibu 2022 47.00 1 4 1800 60.00
Result Grid
Result 13
Read Only
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:53:03 SELECT V.*, SUM(P.amount) AS totalPayments FROM Vehicle V LEFT JOIN Lease L ON V.vehicleID = L.vehicl... 10 row(s) returned 0.016 sec / 0.000 sec

14.


coding challege 3 car rental*
Limit to 1000 rows
SQLAdditions
My Snippets
186 /*14 task*/
187 SELECT C.*, SUM(P.amount) AS totalPayments
188 FROM Customer C
189 LEFT JOIN Lease L ON C.customerID = L.customerID
190 LEFT JOIN Payment P ON L.leaseID = P.leaseID
191 GROUP BY C.customerID, C.firstName, C.lastName, C.email, C.phoneNumber;
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
customerID firstName lastName email phoneNumber totalPayments
2 Jane smith Janesmith@example.com 555-123-4567 1000.00
3 Robert Johnson RobertJohnson@example.com 555-789-1234 1355.00
4 Sarah Brown SarahBrown@example.com 555-456-7890 900.00
5 David Lee DavidLee@example.com 555-787-6543 60.00
6 Laura hall Laurahall@example.com 555-234-5678 NULL
Result Grid
Result 14
Read Only
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 22:53:40 SELECT C.*, SUM(P.amount) AS totalPayments FROM Customer C LEFT JOIN Lease L ON C.customerID = L.c... 9 row(s) returned 0.000 sec / 0.000 sec

15.



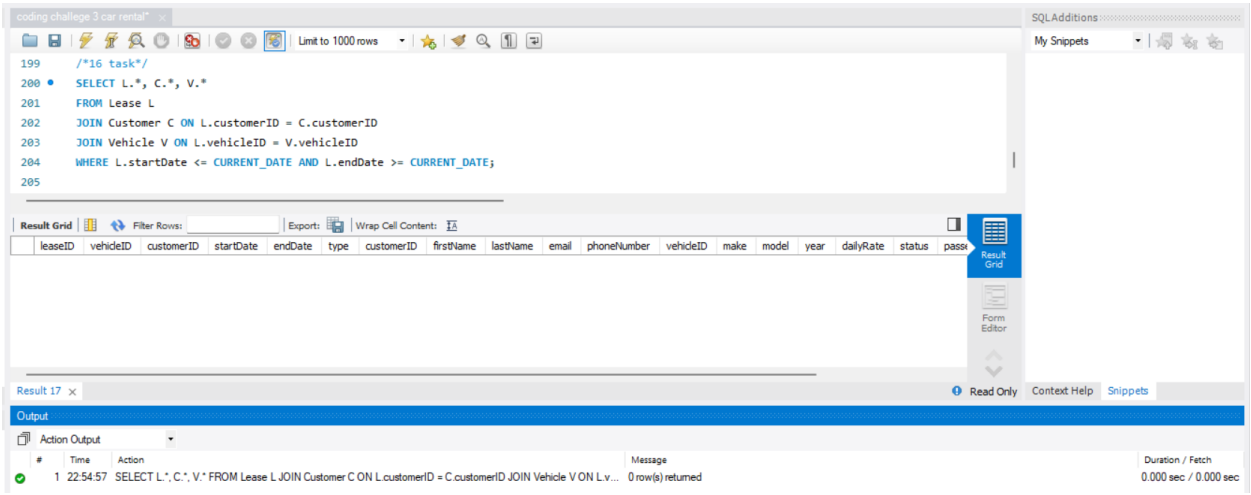
```
193
194    /*15 task*/
195    SELECT L.*, V.*
196    FROM Lease L
197    LEFT JOIN Vehicle V ON L.vehicleID = V.vehicleID;
```

leaseID	vehicleID	customerID	startDate	endDate	type	vehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity
2	2	2	2023-02-15	2023-02-28	monthly	2	Honda	Civic	2023	45.00	1	7	1500
3	3	3	2023-03-10	2023-03-15	daily	3	Ford	Focus	2022	48.00	0	4	1400
4	4	4	2023-04-20	2023-04-30	monthly	4	Nissan	Altima	2023	52.00	1	7	1200
5	5	5	2023-05-05	2023-05-10	daily	5	Cheverlet	Malibu	2022	47.00	1	4	1800
6	4	3	2023-06-15	2023-06-30	monthly	4	Nissan	Altima	2023	52.00	1	7	1200

Output

#	Time	Action	Message	Duration / Fetch
1	22:54:24	SELECT L.*, V.* FROM Lease L LEFT JOIN Vehicle V ON L.vehicleID = V.vehicleID LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec

16.



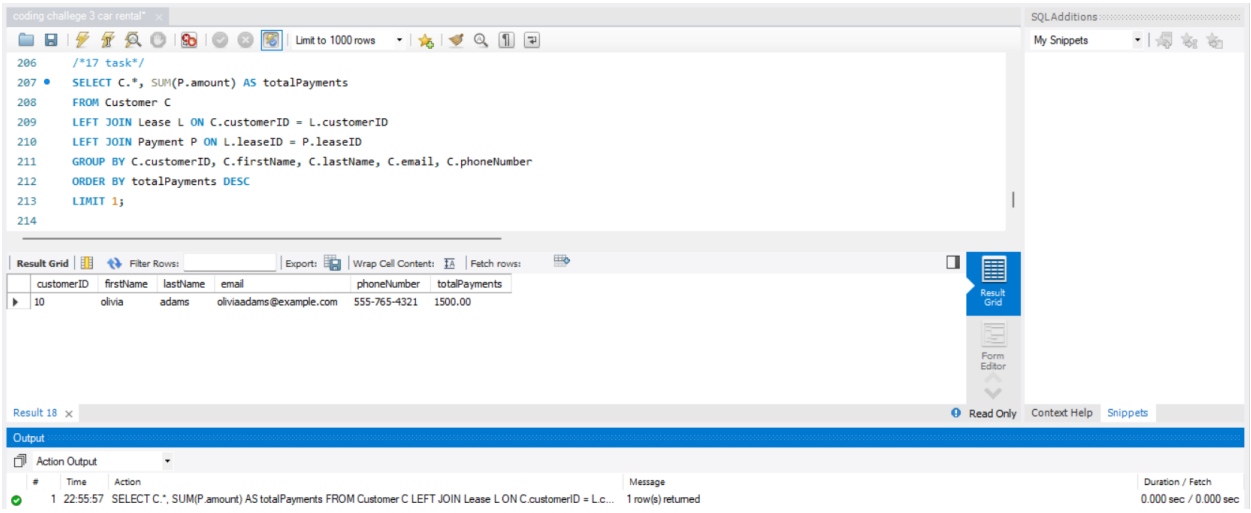
```
199    /*16 task*/
200    SELECT L.*, C.*, V.*
201    FROM Lease L
202    JOIN Customer C ON L.customerID = C.customerID
203    JOIN Vehicle V ON L.vehicleID = V.vehicleID
204    WHERE L.startDate <= CURRENT_DATE AND L.endDate >= CURRENT_DATE;
205
```

leaseID	vehicleID	customerID	startDate	endDate	type	customerID	firstName	lastName	email	phoneNumber	vehicleID	make	model	year	dailyRate	status	passe

Output

#	Time	Action	Message	Duration / Fetch
1	22:54:57	SELECT L.*, C.*, V.* FROM Lease L JOIN Customer C ON L.customerID = C.customerID JOIN Vehicle V ON L.v...	0 row(s) returned	0.000 sec / 0.000 sec

17.



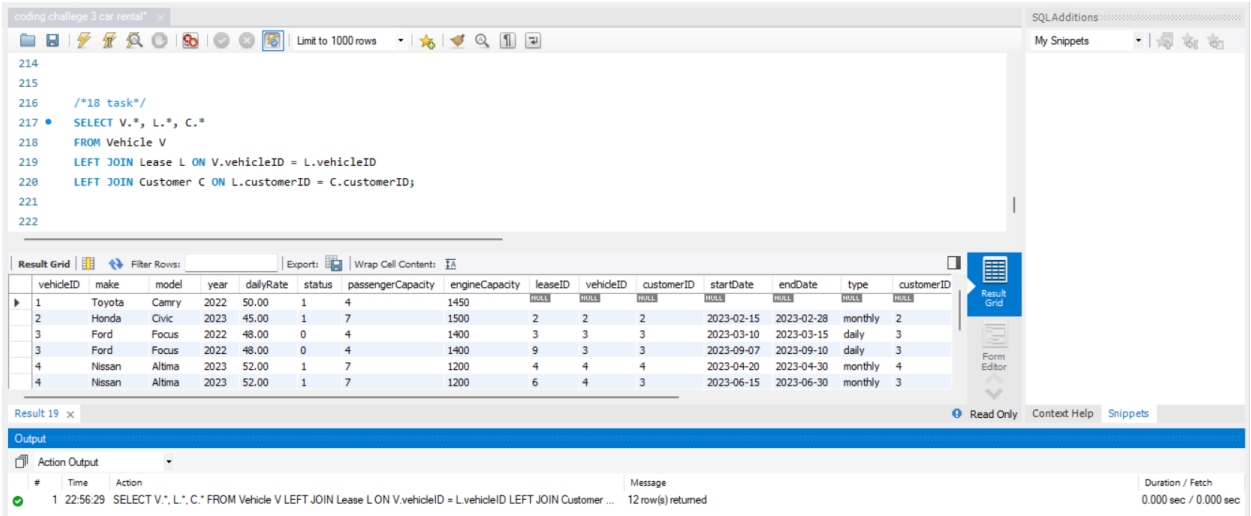
```
206    /*17 task*/
207 •  SELECT C.*, SUM(P.amount) AS totalPayments
208    FROM Customer C
209    LEFT JOIN Lease L ON C.customerID = L.customerID
210    LEFT JOIN Payment P ON L.leaseID = P.leaseID
211    GROUP BY C.customerID, C.firstName, C.lastName, C.email, C.phoneNumber
212    ORDER BY totalPayments DESC
213    LIMIT 1;
214
```

customerID	firstName	lastName	email	phoneNumber	totalPayments
10	olivia	adams	oliviaadams@example.com	555-765-4321	1500.00

Output

#	Time	Action	Message	Duration / Fetch
1	22:55:57	SELECT C.*, SUM(P.amount) AS totalPayments FROM Customer C LEFT JOIN Lease L ON C.customerID = L.c...	1 row(s) returned	0.000 sec / 0.000 sec

18.



```
214
215
216    /*18 task*/
217 •  SELECT V.*, L.*, C.*
218    FROM Vehicle V
219    LEFT JOIN Lease L ON V.vehicleID = L.vehicleID
220    LEFT JOIN Customer C ON L.customerID = C.customerID;
221
222
```

vehicleID	make	model	year	dailyRate	status	passengerCapacity	engineCapacity	leaseID	vehicleID	customerID	startDate	endDate	type	customerID
1	Toyota	Camry	2022	50.00	1	4	1450	NULL	NULL	NULL	NULL	NULL	NULL	NULL
2	Honda	Civic	2023	45.00	1	7	1500	2	2	2	2023-02-15	2023-02-28	monthly	2
3	Ford	Focus	2022	48.00	0	4	1400	3	3	3	2023-03-10	2023-03-15	daily	3
3	Ford	Focus	2022	48.00	0	4	1400	9	3	3	2023-09-07	2023-09-10	daily	3
4	Nissan	Altima	2023	52.00	1	7	1200	4	4	4	2023-04-20	2023-04-30	monthly	4
4	Nissan	Altima	2023	52.00	1	7	1200	6	4	3	2023-06-15	2023-06-30	monthly	3

Output

#	Time	Action	Message	Duration / Fetch
1	22:56:29	SELECT V.*, L.*, C.* FROM Vehicle V LEFT JOIN Lease L ON V.vehicleID = L.vehicleID LEFT JOIN Customer ...	12 row(s) returned	0.000 sec / 0.000 sec