

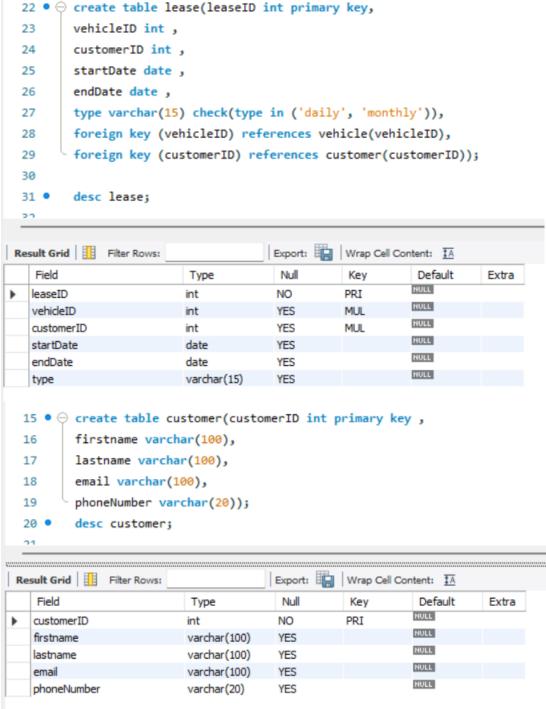


Coding Challenge - Car Rental System - SQL Submitted by : SANKAR ROY

Creation and schema for the database create database CarRental; 2 • use CarRental; 3 4 • ⊖ create table vehicle(vehicleID int primary key, make varchar(100), 5 6 model varchar(100), 7 year year, 8 dailyRate float(5,2), 9 status varchar(100) check(status in ('available' , 'not available')), passengerCapacity int, 10 engineCapacity int); 11 12 13 • desc vehicle; Result Grid Export: Wrap Cell Content: IA Field Null Type Key Default Extra NULL vehideID NO PRI NULL make YES varchar(100) NULL model varchar(100) YES NULL year year YES NULL dailyRate float(5,2) YES NULL varchar(100) YES NULL passengerCapacity YES NULL engineCapacity YES int











```
33 • ⊖ create table payment(paymentID int primary key,
         leaseID int,
 34
         paymentDate date,
 35
 36
         amount float(10,2),
         foreign key (leaseID) references lease(leaseID));
 37
 38
 39 •
         desc payment;
 40
 41 •
         insert into vehicle values
                                              EA AA
Result Grid
              Filter Rows:
                                         Export: Wrap Cell Content: IA
   Field
                            Type
                                          Null
                                                     Key
                                                                 Default
                                                                            Extra
                                                                NULL
  paymentID
                           int
                                          NO
                                                     PRI
                                                                NULL
  leaseID
                            int
                                          YES
                                                     MUL
                                                                NULL
                                          YES
  transactionDate
                            date
                                                                NULL
                           float(10,2)
                                          YES
  amount
```

1. Update the daily rate for a Mercedes car to 68.

```
update vehicle set dailyrate = 68.00 where make = 'mercedes';
         select * from vehicle where make = 'mercedes';
 97 •
 98
                                             Edit: 🚄 🖶 Export/Import: 📳 🐻 Wrap C
Result Grid
              Filter Rows:
   vehideID
             make
                       model
                                     dailyRate
                                               status
                                                        passengerCapacity
                                                                          engineCapacity
                                                                         2599
                      c-dass
                                2022 68.00
                                              available
            mercedes
  NULL
            NULL
                      NULL
                                 NULL NULL
                                              NULL
                                                        NULL
                                                                         NULL
```

2. Delete a specific customer and all associated leases and payments.

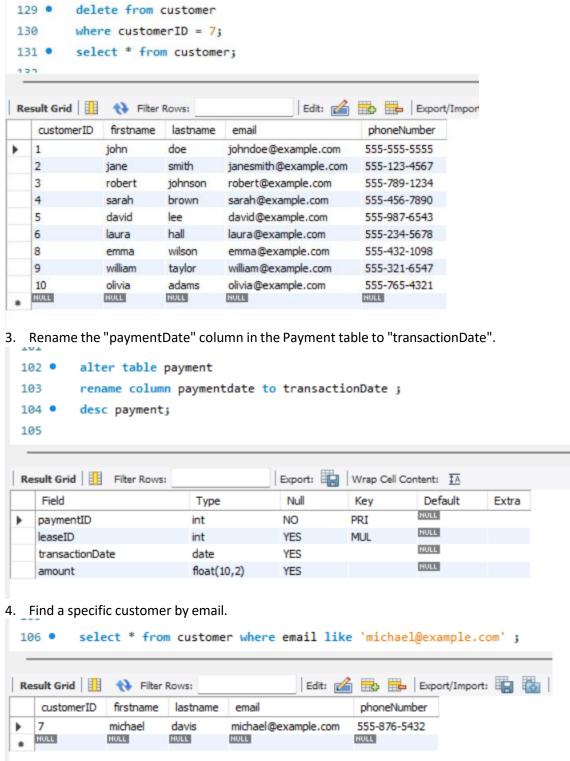




```
121 •
          delete from payment
122
          where leaseID in(select leaseID from lease where customerID = 7);
          select * from payment;
123 •
104
Result Grid Filter Rows:
                                               | Edit: 🚄 🖶 🖶 | Export/Import: 📳 🦝
    paymentID
               leaseID
                        transactionDate
                                        amount
                        2023-01-03
   1
               1
                                       200.00
   2
               2
                        2023-02-20
                                       1000.00
               3
                        2023-03-12
                                       75.00
               4
                        2023-04-25
                                       900.00
   5
               5
                        2023-05-07
                                       60.00
   6
              6
                        2023-06-18
                                       1200.00
   8
              8
                        2023-08-14
                                       1100.00
   9
              9
                        2023-09-09
                                       80.00
   10
               10
                        2023-10-25
                                       1500.00
              NULL
  NULL
                                       NULL
          delete from lease
125 •
126
          where customerID = 7;
          select * from lease;
127 •
Result Grid
                                               Edit: 🇀 🖶 Export
               Filter Rows:
                      customerID
   leaseID
            vehideID
                                  startDate
                                               endDate
                                                           type
                                  2023-01-01
                                              2023-01-05
   1
            1
                      1
                                                           daily
   2
            2
                      2
                                  2023-02-15
                                              2023-02-28
                                                          monthly
   3
            3
                      3
                                                           daily
                                  2023-03-10
                                              2023-03-15
            4
                      4
                                  2023-04-20 2023-04-30
                                                           monthly
            5
                      5
                                  2023-05-05
                                              2023-05-10
                                                           daily
           4
                      3
   6
                                  2023-06-15 2023-06-30
                                                          monthly
   8
            8
                      8
                                  2023-08-12
                                              2023-08-15
                                                          monthly
   9
            3
                      3
                                  2023-09-07
                                              2023-09-10
                                                          daily
                                  2023-10-10
   10
            10
                      10
                                              2023-10-31
                                                          monthly
  NULL
                                              NULL
           NULL
                      NULL
                                                          NULL
```







5. Get active leases for a specific customer.





```
set @date1 = '2023-04-25'; -- current date is of 2024 so made a variable for current date and added date to show a set
  110 •
         select * from lease
  111
         join customer on customer.customerID = lease.customerID
  112
         where customer.firstname = 'sarah' and enddate >= @date1;
                                    Export: Wrap Cell Content: IA
    leaseID vehideID customerID startDate
                                    endDate
                                                    customerID
                                                             firstname
                                                                     lastname
                                                                                           phoneNumber
                           2023-04-20
                                    2023-04-30
                                             monthly
                                                             sarah
                                                                            sarah@example.com
                                                                                          555-456-7890
6. Find all payments made by a customer with a specific phone number.
  115 •
           select payment.*
  116
           from payment
  117
           join lease on payment.leaseid = lease.leaseid
           join customer on customer.customerid = lease.customerid
  118
           where customer.phonenumber = '555-987-6543';
  119
                                                Export: Wrap Cell Content: IA
 paymentID
                leaseID transactionDate
                                        amount
 5
                5
                         2023-05-07
                                        60.00
7. Calculate the average daily rate of all available cars.
           select make , model , avg(dailyrate) as avgDailyRates
  135
           from vehicle
  136
           where status = 'available'
  137
           group by vehicleID;
                                               Export: Wrap Cell Content
 make
               model
                        avgDailyRates
                        50.000000
    toyota
               camry
    honda
               civic
                       45.000000
    nissan
               altima
                        52.000000
    chevrolet
               malibu
                       47.000000
    BMW
               3 series
                      60.000000
    mercedes
               c-class
                        68.000000
    lexus
               ES
                        54.000000
```

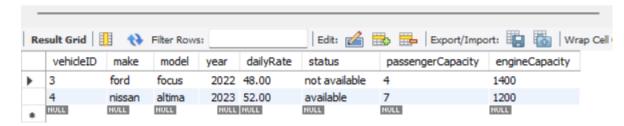
8. Find the car with the highest daily rate.





```
select make , model , dailyrate as highest_daily_rate
139 •
140
         from vehicle
141
         group by vehicleID
         order by dailyrate desc
142
143
         limit 1;
                                            Export: Wrap Cell Content:
   make
                    highest_daily_rate
             model
 mercedes
            c-dass
                    68.00
```

9. Retrieve all cars leased by a specific customer.



10. Find the details of the most recent lease.

```
154 •
          select *
          from lease
155
          order by startdate desc
156
157
          limit 1;
Result Grid
                Filter Rows:
                                               Edit: 🚄 🖶 🖶 Expor
   leaseID
            vehideID
                      customerID
                                  startDate
                                               endDate
                                                           type
   10
            10
                      10
                                  2023-10-10
                                              2023-10-31
                                                          monthly
           NULL
                     NULL
                                                          NULL
  NULL
                                              NULL
```

11. List all payments made in the year 2023.





```
select *
159 •
160
          from payment
          where year(transactiondate) = 2023;
161
Result Grid
                Filter Rows:
                                                 Edit:
   paymentID
               leaseID
                         transactionDate
                                         amount
                        2023-01-03
                                         200.00
   1
               1
   2
                        2023-02-20
                                         1000.00
   3
               3
                        2023-03-12
                                         75.00
   4
                                        900.00
                        2023-04-25
   5
               5
                        2023-05-07
                                         60.00
   6
               6
                        2023-06-18
                                         1200.00
   8
               8
                        2023-08-14
                                         1100.00
   9
               9
                        2023-09-09
                                         80.00
   10
                        2023-10-25
                                         1500.00
               NULL
                                        NULL
  NULL
```

12. Retrieve customers who have not made any payments.

```
select * from customer
      where customerid not in(select customer.customerID from customer
164
165
         join lease on lease.customerid = customer.customerid
      where lease.leaseID in(select leaseID from payment
166
         where leaseID = payment.leaseID));
167
Result Grid
                                           Edit: 🚰 🐯 🖶 Export/Import: 📳
              Filter Rows:
   customerID
              firstname
                        lastname
                                 email
                                                    phoneNumber
  6
                       hall
                                 laura@example.com
                                                   555-234-5678
              laura
              william
                       taylor
                                 william@example.com
                                                   555-321-6547
  NULL
             NULL
                       NULL
                                HULL
                                                   NULL
```

13. Retrieve Car Details and Their Total Payments.



170 •



```
select vehicle.*, sum(payment.amount) as totalAmount
         from vehicle
171
         join lease on vehicle.vehicleID = lease.vehicleID
172
         join payment on payment.leaseid = lease.leaseID
173
         group by vehicleID;
174
                                             Export: Wrap Cell Content: TA
totalAmount
   vehideID
             make
                       model
                                      dailyRate
                                                status
                                                             passengerCapacity
                               year
                                                                               engineCapacity
            toyota
                                2022 50.00
                                               available
                                                                              1450
                                                                                             200.00
  1
                       camry
   2
            honda
                                2023 45.00
                                               available
                                                            7
                                                                              1500
                                                                                             1000.00
                       civic
                                2022 48.00
   3
            ford
                       focus
                                               not available
                                                                              1400
                                                                                             155.00
   4
            nissan
                       altima
                                2023 52.00
                                               available
                                                            7
                                                                              1200
                                                                                             2100.00
   5
                                               available
            chevrolet
                       malibu
                                2022 47.00
                                                                              1800
                                                                                             60.00
                                2022 68.00
                                               available
  8
            mercedes
                       c-dass
                                                            8
                                                                              2599
                                                                                             1100.00
   10
            lexus
                                2023 54.00
                                               available
                                                                              2500
                                                                                             1500.00
```

```
14. Calculate Total Payments for Each Customer.
  177 •
            select customer.* , sum(payment.amount) as totalAmount
  178
            from customer
            join lease on customer.customerID = lease.customerID
  179
            join payment on payment.leaseid = lease.leaseID
  180
            group by customerID;
  181
                                                  Export: Wrap Cell Content: $\frac{1}{4}
  Result Grid Filter Rows:
      customerID
                  firstname
                                      email
                                                             phoneNumber
                                                                            totalAmount
                            lastname
                 john
                            doe
                                      johndoe@example.com
                                                             555-555-5555
                                                                           200.00
     2
                            smith
                                      janesmith@example.com
                                                             555-123-4567
                                                                           1000.00
                 jane
     3
                                      robert@example.com
                 robert
                            johnson
                                                             555-789-1234
                                                                           1355.00
     4
                                      sarah@example.com
                                                             555-456-7890
                                                                           900.00
                 sarah
                            brown
     5
                 david
                            lee
                                      david@example.com
                                                             555-987-6543
                                                                           60.00
     8
                 emma
                            wilson
                                      emma@example.com
                                                             555-432-1098
                                                                           1100.00
     10
                            adams
                                      olivia@example.com
                                                             555-765-4321
                                                                           1500.00
```

15. List Car Details for Each Lease.

```
183 •
         select vehicle.* , lease.*
184
         from vehicle
         join lease on lease.vehicleID = vehicle.vehicleID;
Export: Wrap Cell Content: IA
   vehideID make
                       model
                                     dailyRate status
                                                            passengerCapacity
                                                                                             leaseID
                                                                                                      vehideID
                                                                                                               customerID startDate
                                                                                                                                       endDate
                                                                              engineCapacity
                               year
                                                                                                                                                    type
                                                                                                                                                   daily
            toyota
                      camry
                                2022 50.00
                                               available
                                                                              1450
                                                                                                                           2023-01-01
                                                                                                                                       2023-01-05
                                               available
                                                                                                                           2023-02-15 2023-02-28
  2
            honda
                      civic
                                2023 45.00
                                                                              1500
                                                                                                                                                   monthly
                                2022 48.00
                                               not available
                       focus
                                                                                                                           2023-03-10 2023-03-15
  4
                      altima
                                2023 52.00
                                               available
                                                                              1200
                                                                                            4
                                                                                                               4
                                                                                                                           2023-04-20 2023-04-30
            nissan
                                                                                                                                                   monthly
                      malibu
                                2022 47.00
                                               available
                                                                                             5
                                                                                                                           2023-05-05
                                                                                                                                       2023-05-10
            chevrolet
                                                                              1800
                      altima
                                2023 52.00
                                               available
                                                                              1200
                                                                                                                           2023-06-15 2023-06-30
                                                                                                                                                  monthly
            nissan
            mercedes
                      c-dass
                                2022 68.00
                                               available
                                                                              2599
                                                                                                                           2023-08-12 2023-08-15
                                                                                                                                                   monthly
  3
                                                                                            9
                                                                                                     3
                                                                                                               3
            ford
                      focus
                                2022 48.00
                                               not available
                                                                              1400
                                                                                                                           2023-09-07
                                                                                                                                      2023-09-10
                                                                                                                                                  daily
  10
            lexus
                      ES
                                2023 54.00
                                               available
                                                                              2500
                                                                                                     10
                                                                                                               10
                                                                                                                           2023-10-10 2023-10-31
                                                                                                                                                  monthly
```

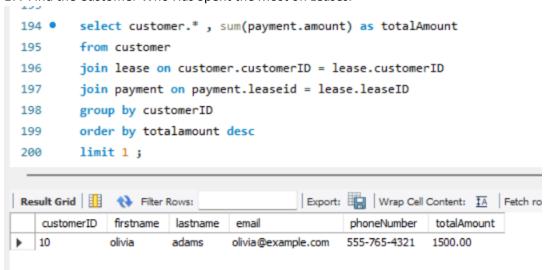
16. Retrieve Details of Active Leases with Customer and Car Information.





```
select lease.*, customer.*, vehicle.*
187 •
188
        from lease
189
        join customer on lease.customerid = customer.customerid
190
         join vehicle on lease.vehicleid = vehicle.vehicleid
        where '2023-06-20' between startdate and enddate;
191
192
Result Grid Filter Rows:
                                                                                                                                                            Export: Wrap Cell Content: IA
  leaseID vehideID customerID startDate
                                          endDate
                                                             customerID
                                                                       firstname lastname
                                                                                                                                                       dailyRate
                                                     type
                                                                                                            phoneNumber vehicleID make
                                                                                                                                         model
                                                                                          email
                                                                                                                                                 vear
                              2023-06-15 2023-06-30 monthly 3
                                                                                                            555-789-1234 4
                                                                                                                                                 2023 52.00
                                                                       robert
                                                                                 iohnson
                                                                                         robert@example.com
                                                                                                                                  nissan
                                                                                                                                         altima
```

17. Find the Customer Who Has Spent the Most on Leases.



18. List All Cars with Their Current Lease Information.

```
set @curdate1 = '2023-05-15'; -- as current date has no active rent so i am using current date as 2023-05-15
204 •
        select vehicle.* , lease.*
205
        from vehicle
        join lease on vehicle.vehicleID = lease.vehicleID
        where enddate > @curdate1;
Export: Wrap Cell Content: IA
   vehideID make
                     model
                            year dailyRate status
                                                        passengerCapacity engineCapacity
                                                                                     leaseID
                                                                                            vehideID
                                                                                                      customerID
                                                                                                                startDate
           nissan
                     altima
                             2023 52.00
                                            available
                                                                        1200
                                                                                                                 2023-06-15
                                                                                                                            2023-06-30
                                                                                                                                       monthly
           mercedes c-class 2022 68.00
                                           available
                                                                                                                 2023-08-12 2023-08-15 monthly
                             2022 48.00
                                                                                                                 2023-09-07 2023-09-10
           ford
                     focus
                                           not available
                                                                        1400
                                                                                     q
                                                                                                                                       daily
  10
                    ES
                            2023 54.00
                                                                       2500
                                                                                     10
                                                                                             10
                                                                                                      10
                                           available
```