use new\_wheels\_dumpfile;

/\*-- QUESTIONS RELATED TO CUSTOMERS

[Q1] What is the distribution of customers across states?

Hint: For each state, count the number of customers.\*/

select

customer\_t.state,

count(customer\_id) as cust\_distribution

from customer\_t

group by customer\_t.state

order by 1 asc;

-- ---------------------------------------------------------------------------------------------------------------------------------

/\* [Q2] What is the average rating in each quarter?

-- Very Bad is 1, Bad is 2, Okay is 3, Good is 4, Very Good is 5.

Hint: Use a common table expression and in that CTE, assign numbers to the different customer ratings.

      Now average the feedback for each quarter.

Note: For reference, refer to question number 4. Week-2: mls\_week-2\_gl-beats\_solution-1.sql.

      You'll get an overview of how to use common table expressions from this question.\*/

with assigned\_rating as

(select

customer\_feedback,

-- Case when to assign values to qualitative data

case

when customer\_feedback='Very Bad' then 1

when customer\_feedback= 'Bad' then 2

when customer\_feedback= 'Okay' then 3

when customer\_feedback='Good' then 4

when customer\_feedback= 'Very Good' then 5

end as cust\_fdbck\_num

from order\_t)

select quarter\_number,

avg(cust\_fdbck\_num)

from order\_t

join assigned\_rating

on order\_t.customer\_feedback=assigned\_rating.customer\_feedback

group by quarter\_number

order by quarter\_number asc;

-- ---------------------------------------------------------------------------------------------------------------------------------

/\* [Q3] Are customers getting more dissatisfied over time?

Hint: Need the percentage of different types of customer feedback in each quarter. Use a common table expression and

determine the number of customer feedback in each category as well as the total number of customer feedback in each quarter.

Now use that common table expression to find out the percentage of different types of customer feedback in each quarter.

Eg: (total number of very good feedback/total customer feedback)\* 100 gives you the percentage of very good feedback.

Note: For reference, refer to question number 4. Week-2: mls\_week-2\_gl-beats\_solution-1.sql.

      You'll get an overview of how to use common table expressions from this question.\*/

with count\_custfdbck as

(select

quarter\_number,

customer\_feedback,

count(customer\_feedback) as count\_cust\_fdbk,

sum(count(customer\_feedback)) over (partition by quarter\_number) as total\_fdbk\_by\_quarter

from order\_t

group by 1,2

order by 1,2 asc)

select

quarter\_number,

customer\_feedback,

(count\_cust\_fdbk/total\_fdbk\_by\_quarter)\*100 as pecent\_feedback

from count\_custfdbck;

-- This table is not part of question 3's submitted answer. This is the CTE table before it was turned

-- into a CTE table. This helps me to see what's going on behind the scenes.

select

quarter\_number,

customer\_feedback,

count(customer\_feedback) as count\_cust\_fdbk,

sum(count(customer\_feedback)) over (partition by quarter\_number) as total\_fdbk\_by\_quarter

from order\_t

group by 1,2

order by 1,2 asc;

-- ---------------------------------------------------------------------------------------------------------------------------------

/\*[Q4] Which are the top 5 vehicle makers preferred by the customer.

Hint: For each vehicle make what is the count of the customers.\*/

select

product\_t.vehicle\_maker,

count(order\_t.customer\_id) as cust\_cnt

from product\_t

left join order\_t

on product\_t.product\_id = order\_t.product\_id

group by 1

order by 2 desc

limit 5;

-- ---------------------------------------------------------------------------------------------------------------------------------

/\*[Q5] What is the most preferred vehicle make in each state?

Hint: Use the window function RANK() to rank based on the count of customers for each state and vehicle maker.

After ranking, take the vehicle maker whose rank is 1.\*/

with preferred\_car as

(select

customer\_t.state,

product\_t.vehicle\_maker,

count(order\_t.order\_id) as order\_count,

rank() over (partition by customer\_t.state order by count(order\_t.order\_id) desc) as ranking

from customer\_t

left join order\_t using (customer\_id)

left join product\_t using (product\_id)

group by 1,2

order by 1, 4 asc)

select

state,

vehicle\_maker,

order\_count,

ranking

from preferred\_car

where ranking=1;

-- I believe both queries (above and below) work. They produce a different order in the

-- response, however.

select

customer\_t.state,

product\_t.vehicle\_maker,

count(order\_t.order\_id) as order\_count,

rank() over (partition by customer\_t.state order by count(order\_t.order\_id) desc)

from customer\_t

left join order\_t using (customer\_id)

left join product\_t using (product\_id)

group by 1,2

order by 1, 4 asc;-- ---------------------------------------------------------------------------------------------------------------------------------

/\*QUESTIONS RELATED TO REVENUE and ORDERS

-- [Q6] What is the trend of number of orders by quarters?

Hint: Count the number of orders for each quarter.\*/

select

order\_t.quarter\_number,

count(order\_t.order\_id) as num\_orders

from order\_t

group by 1

order by 1 asc;

-- ---------------------------------------------------------------------------------------------------------------------------------

/\* [Q7] What is the quarter over quarter % change in revenue?

Hint: Quarter over Quarter percentage change in revenue means what is the change in revenue from the subsequent quarter to the previous quarter in percentage.

To calculate you need to use the common table expression to find out the sum of revenue for each quarter.

Then use that CTE along with the LAG function to calculate the QoQ percentage change in revenue.

\*/

with revenue\_sum as

(select order\_t.quarter\_number,

round(sum(order\_t.quantity\*(order\_t.vehicle\_price\*(1-(order\_t.discount/100)))),2) as current\_revenue

from order\_t

group by 1

order by 1 asc)

select

quarter\_number,

current\_revenue,

lag(current\_revenue,1) over () as previous\_revenue,

-- Quarter over quarter percentage change:

-- =(Current quarter-previous quarter)/previous quarter

100\*(current\_revenue-lag(current\_revenue,1) over ())/lag(current\_revenue,1) over () as QoQ\_change

from revenue\_sum;

-- ---------------------------------------------------------------------------------------------------------------------------------

/\* [Q8] What is the trend of revenue and orders by quarters?

Hint: Find out the sum of revenue and count the number of orders for each quarter.\*/

select

order\_t.quarter\_number,

-- revenue=(number of units sold)(selling price with discount)

-- this line returns the sum of the revenue

-- given discount is a percent, so divide by 100

-- do 1-decimal to get the amount of the product customer must pay

-- multiply this number by the vehicle price to get discounted price

-- multiply this by the quantity for total revenue

-- round (code,2) rounds to 2 decimal places since we're discussing money

round(sum(order\_t.quantity\*(order\_t.vehicle\_price\*(1-(order\_t.discount/100)))),2) as total\_revenue,

count(order\_id) as order\_count

from order\_t

group by 1

order by 1 asc;

select

order\_t.quarter\_number,

-- This code is the revenue without the discount so you can see that this revenue

-- is higher than the actual code above

sum(order\_t.quantity\*order\_t.vehicle\_price) as total\_revenue,

count(order\_id) as order\_count

from order\_t

group by 1

order by 1 asc;

-- ---------------------------------------------------------------------------------------------------------------------------------

/\* QUESTIONS RELATED TO SHIPPING

[Q9] What is the average discount offered for different types of credit cards?

Hint: Find out the average of discount for each credit card type.\*/

select

customer\_t.credit\_card\_type,

avg(order\_t.discount) as avg\_discount

from customer\_t

left join order\_t using (customer\_id)

group by 1

order by 1 asc;

-- ---------------------------------------------------------------------------------------------------------------------------------

/\* [Q10] What is the average time taken to ship the placed orders for each quarters?

Hint: Use the datediff function to find the difference between the ship date and the order date.

\*/

select

order\_t.quarter\_number,

-- gives the number of days between the order date and shipment date

-- rounded to the nearest day

round(avg(datediff(order\_t.ship\_date,order\_t.order\_date))) as average\_time\_days

from order\_t

group by 1

order by 1 asc;

-- --------------------------------------------------------Done----------------------------------------------------------------------

-- ----------------------------------------------------------------------------------------------------------------------------------