-- This is the solution for 1st case study of the challenge

-- CREATING DATA SET

CREATE TABLE sales (

"customer\_id" VARCHAR(1),

"order\_date" DATE,

"product\_id" INTEGER

);

INSERT INTO sales

("customer\_id", "order\_date", "product\_id")

VALUES

('A', '2021-01-01', '1'),

('A', '2021-01-01', '2'),

('A', '2021-01-07', '2'),

('A', '2021-01-10', '3'),

('A', '2021-01-11', '3'),

('A', '2021-01-11', '3'),

('B', '2021-01-01', '2'),

('B', '2021-01-02', '2'),

('B', '2021-01-04', '1'),

('B', '2021-01-11', '1'),

('B', '2021-01-16', '3'),

('B', '2021-02-01', '3'),

('C', '2021-01-01', '3'),

('C', '2021-01-01', '3'),

('C', '2021-01-07', '3');

CREATE TABLE menu (

"product\_id" INTEGER,

"product\_name" VARCHAR(5),

"price" INTEGER

);

INSERT INTO menu

("product\_id", "product\_name", "price")

VALUES

('1', 'sushi', '10'),

('2', 'curry', '15'),

('3', 'ramen', '12');

CREATE TABLE members (

"customer\_id" VARCHAR(1),

"join\_date" DATE

);

INSERT INTO members

("customer\_id", "join\_date")

VALUES

('A', '2021-01-07'),

('B', '2021-01-09');

Select \*

From members

Select \*

From menu

Select \*

From Sales

-- SOLUTIONS

--1 Total amount spend by each customer

Select S.customer\_id, Sum(M.price)

From Menu m

join Sales s

On m.product\_id = s.product\_id

group by S.customer\_id

--2 How manu dats customer visited the restauraunt

Select customer\_id, count(distinct(order\_date))

From Sales

Group by customer\_id

-- 3. What was the first item from the menu purchased by each customer?

With Rank as

(

Select S.customer\_id,

M.product\_name,

S.order\_date,

DENSE\_RANK() OVER (PARTITION BY S.Customer\_ID Order by S.order\_date) as rank

From Menu m

join Sales s

On m.product\_id = s.product\_id

group by S.customer\_id, M.product\_name,S.order\_date

)

Select Customer\_id, product\_name

From Rank

Where rank = 1

-- 4. What is the most purchased item on the menu and how many times was it purchased by all customers?

Select Top 1 M.product\_name , Count(S.product\_id)

From Menu m

join Sales s

On m.product\_id = s.product\_id

Group by M.product\_name

Order by Count(S.product\_id) desc

-- 5. Which item was the most popular for each customer?

With rank as

(

Select S.customer\_ID ,

M.product\_name,

Count(S.product\_id) as Count,

Dense\_rank() Over (Partition by S.Customer\_ID order by Count(S.product\_id) DESC ) as Rank

From Menu m

join Sales s

On m.product\_id = s.product\_id

group by S.customer\_id,S.product\_id,M.product\_name

)

Select Customer\_id,Product\_name,Count

From rank

where rank = 1

-- 6. Which item was purchased first by the customer after they became a member?

With Rank as

(

Select S.customer\_id,

M.product\_name,

Dense\_rank() OVER (Partition by S.Customer\_id Order by S.Order\_date) as Rank

From Sales S

Join Menu M

ON m.product\_id = s.product\_id

JOIN Members Mem

ON Mem.Customer\_id = S.customer\_id

Where S.order\_date >= Mem.join\_date

)

Select \*

From Rank

Where Rank = 1

-- 7. Which item was purchased just before the customer became a member?

With Rank as

(

Select S.customer\_id,

M.product\_name,

Dense\_rank() OVER (Partition by S.Customer\_id Order by S.Order\_date) as Rank

From Sales S

Join Menu M

ON m.product\_id = s.product\_id

JOIN Members Mem

ON Mem.Customer\_id = S.customer\_id

Where S.order\_date < Mem.join\_date

)

Select customer\_ID, Product\_name

From Rank

Where Rank = 1

-- 8. What is the total items and amount spent for each member before they became a member?

Select S.customer\_id,count(S.product\_id ) as quantity ,Sum(M.price) as total\_sales

From Sales S

Join Menu M

ON m.product\_id = s.product\_id

JOIN Members Mem

ON Mem.Customer\_id = S.customer\_id

Where S.order\_date < Mem.join\_date

Group by S.customer\_id

-- 9. If each $1 spent equates to 10 points and sushi has a 2x points multiplier - how many points would each customer have?

With Points as

(

Select \*, Case When product\_id = 1 THEN price\*20

Else price\*10

End as Points

From Menu

)

Select S.customer\_id, Sum(P.points) as Points

From Sales S

Join Points p

On p.product\_id = S.product\_id

Group by S.customer\_id

-- 10. In the first week after a customer joins the program (including their join date) they earn 2x points on all items, not just sushi - how many points do customer A and B have at the end of January?

Select

s.customer\_id

,Sum(CASE

When (DATEDIFF(DAY, me.join\_date, s.order\_date) between 0 and 7) or (m.product\_ID = 1) Then m.price \* 20

Else m.price \* 10

END) As Points

From members as me

Inner Join sales as s on s.customer\_id = me.customer\_id

Inner Join menu as m on m.product\_id = s.product\_id

where s.order\_date >= me.join\_date and s.order\_date <= CAST('2021-01-31' AS DATE)

Group by s.customer\_id