**8 week sql challenge**

Each of the following case study questions can be answered using a single SQL statement:

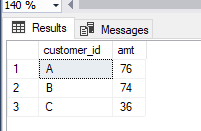
1) What is the total amount each customer spent at the restaurant?  
Ans :  
 select distinct(s.customer\_id) ,sum(m.price) as amt

from dbo.sales s

JOIN dbo.menu m

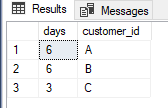
ON s.product\_id = m.product\_id

group by s.customer\_id;



2) How many days has each customer visited the restaurant?  
Ans :

select COUNT(order\_date) as days, customer\_id from dbo.sales GROUP BY customer\_id;



3)What was the first item from the menu purchased by each customer?  
Ans :  
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

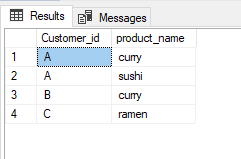
group by s.order\_date,m.product\_name, s.customer\_id

)

select Customer\_id, product\_name

from Rank

where rank = 1



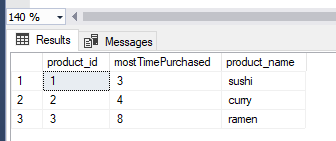
4)What is the most purchased item on the menu and how many times was it purchased by all customers?  
Ans :  
  
select s.product\_id, count(s.product\_id) mostTimePurchased, m.product\_name

from sales s

join menu m

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

group by s.product\_id, m.product\_name

having count(s.product\_id) > 1  
  


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

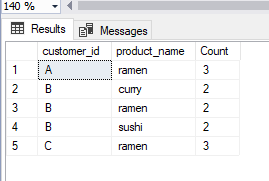
join sales s

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

group by s.customer\_id,m.product\_name,s.product\_id)

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?  
Ans :   
with Rank as

(

select

s.customer\_id,

mem.join\_date,

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

join members mem

On s.customer\_id = mem.customer\_id

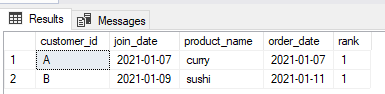
where s.order\_date >=mem.join\_date

)

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,

mem.join\_date,

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

join members mem

On s.customer\_id = mem.customer\_id

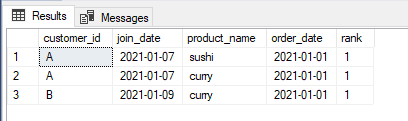
where s.order\_date < mem.join\_date

)

select \*

from Rank

where rank =1



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

Ans :

Solution 1)  
select distinct(s.customer\_id) ,sum(m.price) as amt

from dbo.sales s

JOIN dbo.menu m

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

join dbo.members mem

on s.customer\_id = mem.customer\_id

where s.order\_date < mem.join\_date

group by s.customer\_id;  
  
Solution 2)  
with Rank as

(

select

s.customer\_id,

mem.join\_date,

m.product\_name,

m.price,

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

join members mem

On s.customer\_id = mem.customer\_id

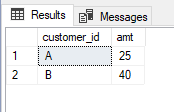
where s.order\_date <mem.join\_date

)

select distinct(customer\_id) , sum(price) as amt

from rank

group by 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?

Ans :   
Solution 1)

with TempTable as (

select \*,

Case when product\_id IN (2,3) then (price \* 10) else (price \* 20) End as point

from menu

)

select s.customer\_id, sum(point) as points from TempTable t

join sales s

on s.product\_id = t.product\_id

group by s.customer\_id;

Solution 2)

with TempTable as (

select \*,

Case when product\_name = 'sushi' then (price \* 20) else (price \* 10) End as point

from menu

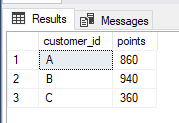
)

select s.customer\_id, sum(point) as points from TempTable t

join sales s

on s.product\_id = t.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?  
with TempTable as (

select \*,

Case when product\_id in (1,2,3) then (price \* 20) End as point

from menu

)

select s.customer\_id, sum(point) as points from TempTable t

join sales s

on s.product\_id = t.product\_id

join members mem

on s.customer\_id = mem.customer\_id

where s.order\_date < = dateadd(day,7, mem.join\_date)

group by s.customer\_id;