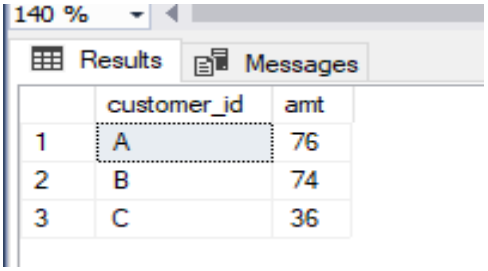
8 week sql challenge

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;
```



	customer_id	amt
1	A	76
2	B	74
3	C	36

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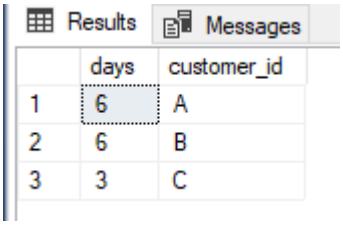
2) How many days has each customer visited the restaurant?
Ans :

```
select  COUNT(order_date) as days, customer_id from dbo.sales  GROUP BY customer_id;
```



	days	customer_id
1	6	A
2	6	B
3	3	C

---

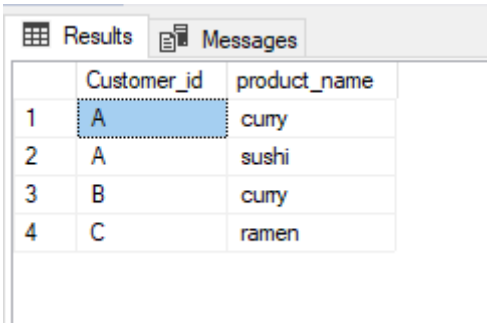
3)What was the first item from the menu purchased by each customer?
Ans :

```
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
```



Results | Messages

	Customer_id	product_name
1	A	curry
2	A	sushi
3	B	curry
4	C	ramen

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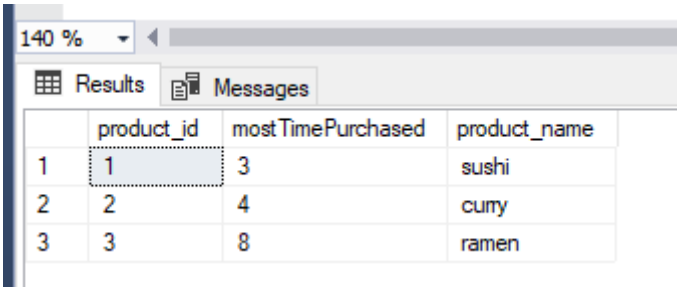
4)What is the most purchased item on the menu and how many times was it purchased by all customers?

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
```



140 %

Results | Messages

	product_id	mostTimePurchased	product_name
1	1	3	sushi
2	2	4	curry
3	3	8	ramen

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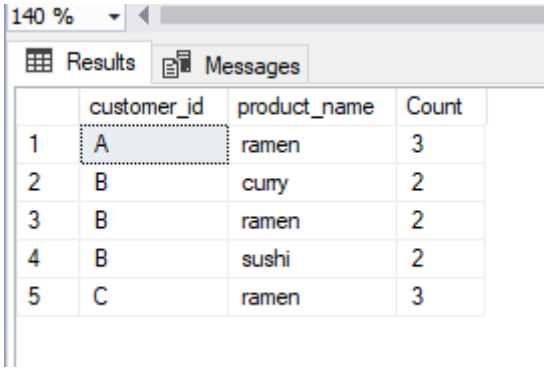
5)Which item was the most popular for each customer?

```
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
```



	customer_id	product_name	Count
1	A	ramen	3
2	B	curry	2
3	B	ramen	2
4	B	sushi	2
5	C	ramen	3

---

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
```

	customer_id	join_date	product_name	order_date	rank
1	A	2021-01-07	curry	2021-01-07	1
2	B	2021-01-09	sushi	2021-01-11	1

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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
```

Results | Messages

	customer_id	join_date	product_name	order_date	rank
1	A	2021-01-07	sushi	2021-01-01	1
2	A	2021-01-07	curry	2021-01-01	1
3	B	2021-01-09	curry	2021-01-01	1

---

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

Ans :

Solution 1)

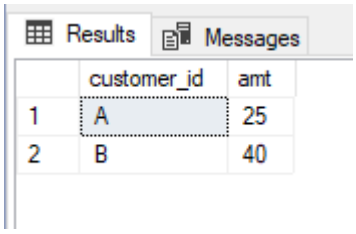
```
select  distinct(s.customer_id) ,sum(m.price) as amt
from dbo.sales s
JOIN  dbo.menu m
ON  s.product_id = m.product_id
join dbo.members mem
on s.customer_id = mem.customer_id
where s.order_date < mem.join_date
group by s.customer_id;
```

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
```



	customer_id	amt
1	A	25
2	B	40

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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)

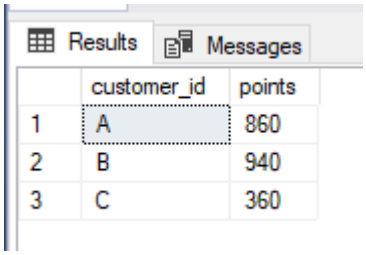
```
with TempTable as (
select  *,
Case when product_id  IN (2,3) then (price * 10) else (price * 20) End as point

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;
```



	customer_id	points
1	A	860
2	B	940
3	C	360

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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;
```