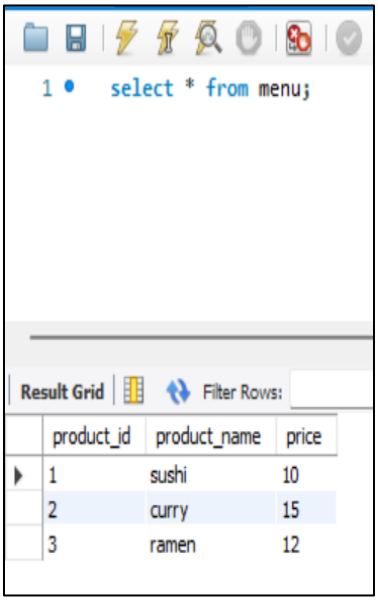
8 Week SQL Challenge

https://8weeksqlchallenge.com/case-study-1/

Case Study #1 - Danny's Diner

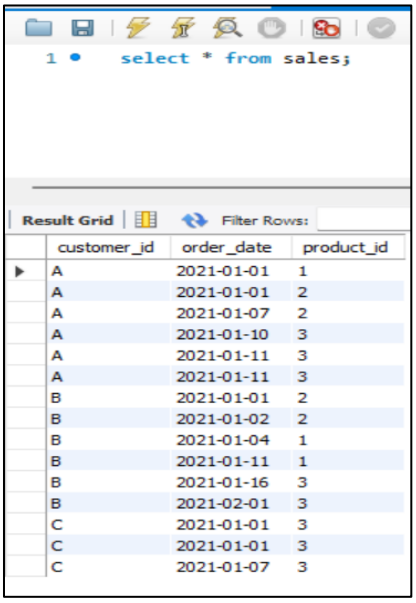
Tables – menu, sales, members



```
1 • select * from menu;
```

Result Grid | Filter Rows:

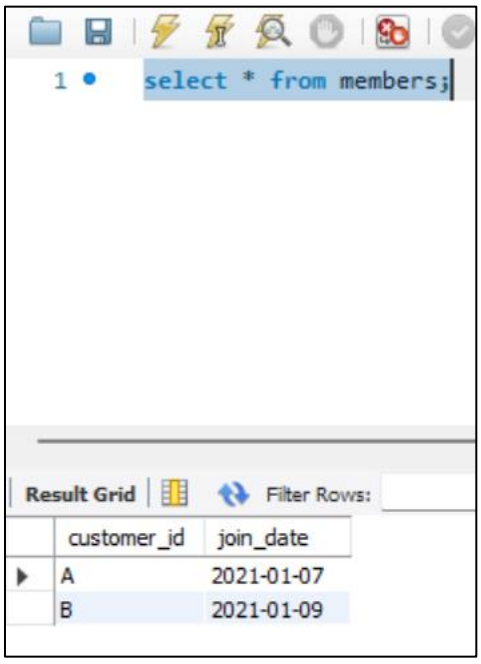
product_id	product_name	price
1	sushi	10
2	curry	15
3	ramen	12



```
1 • select * from sales;
```

Result Grid | Filter Rows:

customer_id	order_date	product_id
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



```
1 • select * from members;
```

Result Grid | Filter Rows:

customer_id	join_date
A	2021-01-07
B	2021-01-09

Solution to Questions

```sql
-- 1. What is the total amount each customer spent at the restaurant?
select sales.customer_id, sum(menu.price) as 'Total amount sppent'
from sales
join menu on sales.product_id = menu.product_id
group by sales.customer_id;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customer_id	Total amount sppent
A	76
B	74
C	36

```sql
-- 2. How many days has each customer visited the restaurant?
select customer_id, count(distinct order_date) as 'No. of Days visited'
from sales
group by customer_id
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customer_id	No. of Days visited
A	4
B	6
C	2

```sql
-- 3. What was the first item from the menu purchased by each customer?
with raw_data as (
Select s.customer_id,s.product_id, s.order_date, m.product_name,
dense_rank () over( partition by order_date order by order_date) as rc
from sales s
join menu m on s.product_id = m.product_id
)
select customer_id, product_name as first_item_purchased, order_date
from raw_data
where order_date = '2021-01-01'
order by customer_id
limit 4;
```

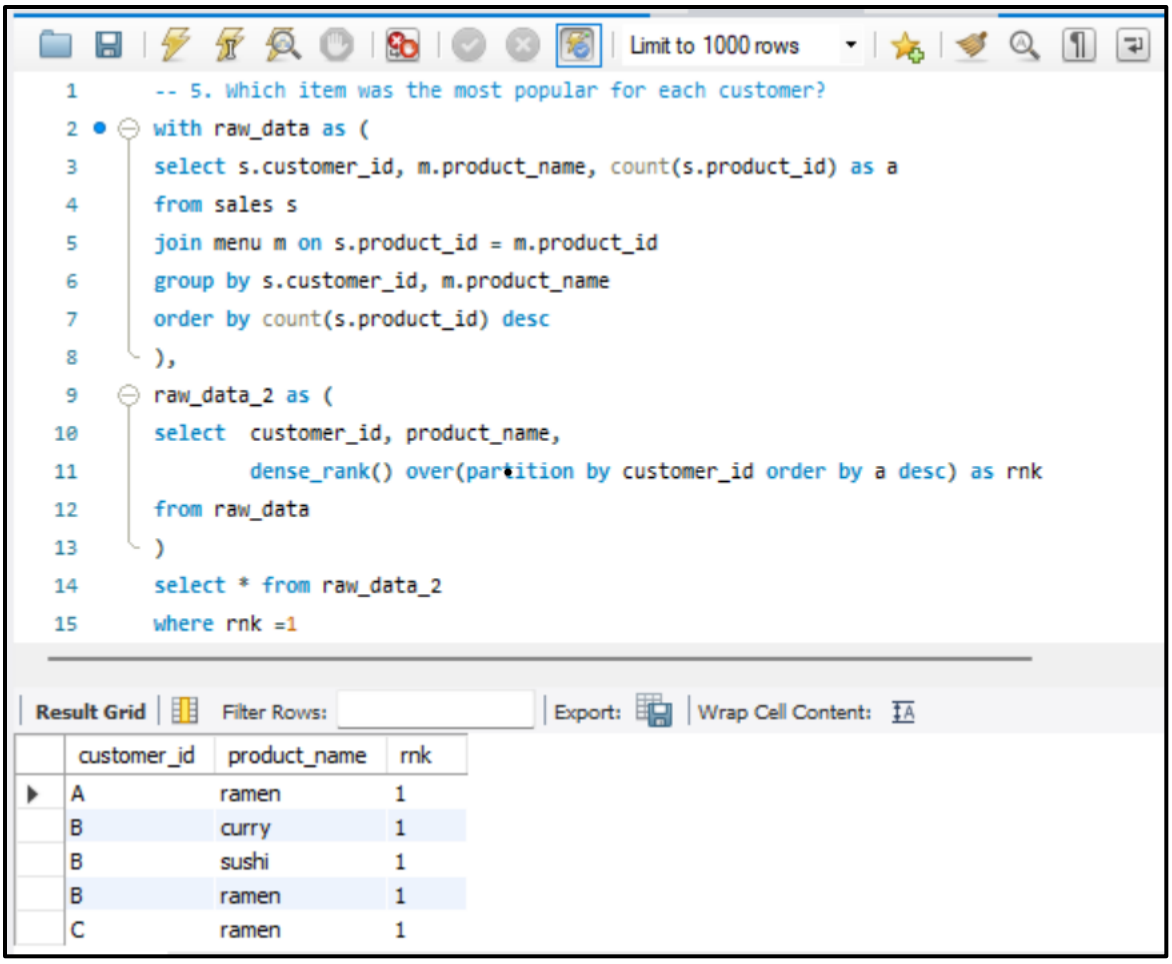
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customer_id	first_item_purchased	order_date
A	sushi	2021-01-01
A	curry	2021-01-01
B	curry	2021-01-01
C	ramen	2021-01-01

```sql
-- 4. What is the most purchased item on the menu and how many times was it purchased by all customers?
with raw_data as (
select s.customer_id, count(s.product_id) as item_purchase_count, m.product_name
from sales s
join menu m on s.product_id = m.product_id
group by s.customer_id,m.product_name
order by item_purchase_count desc
)
select  product_name,
        sum(item_purchase_count) as times_purchased
from raw_data
group by product_name
limit 1
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

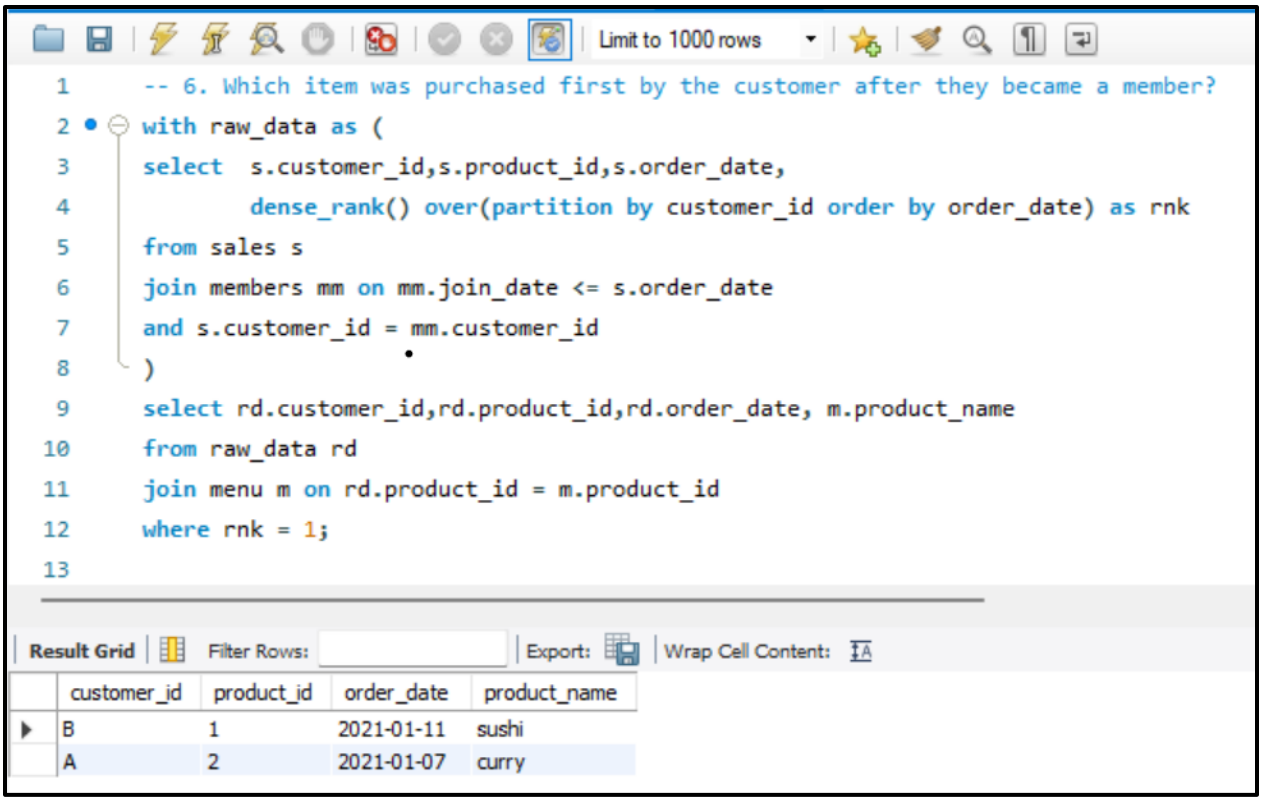
product_name	times_purchased
ramen	8



```sql
-- 5. Which item was the most popular for each customer?
with raw_data as (
select s.customer_id, m.product_name, count(s.product_id) as a
from sales s
join menu m on s.product_id = m.product_id
group by s.customer_id, m.product_name
order by count(s.product_id) desc
),
raw_data_2 as (
select  customer_id, product_name,
        dense_rank() over(partition by customer_id order by a desc) as rnk
from raw_data
)
select * from raw_data_2
where rnk =1
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

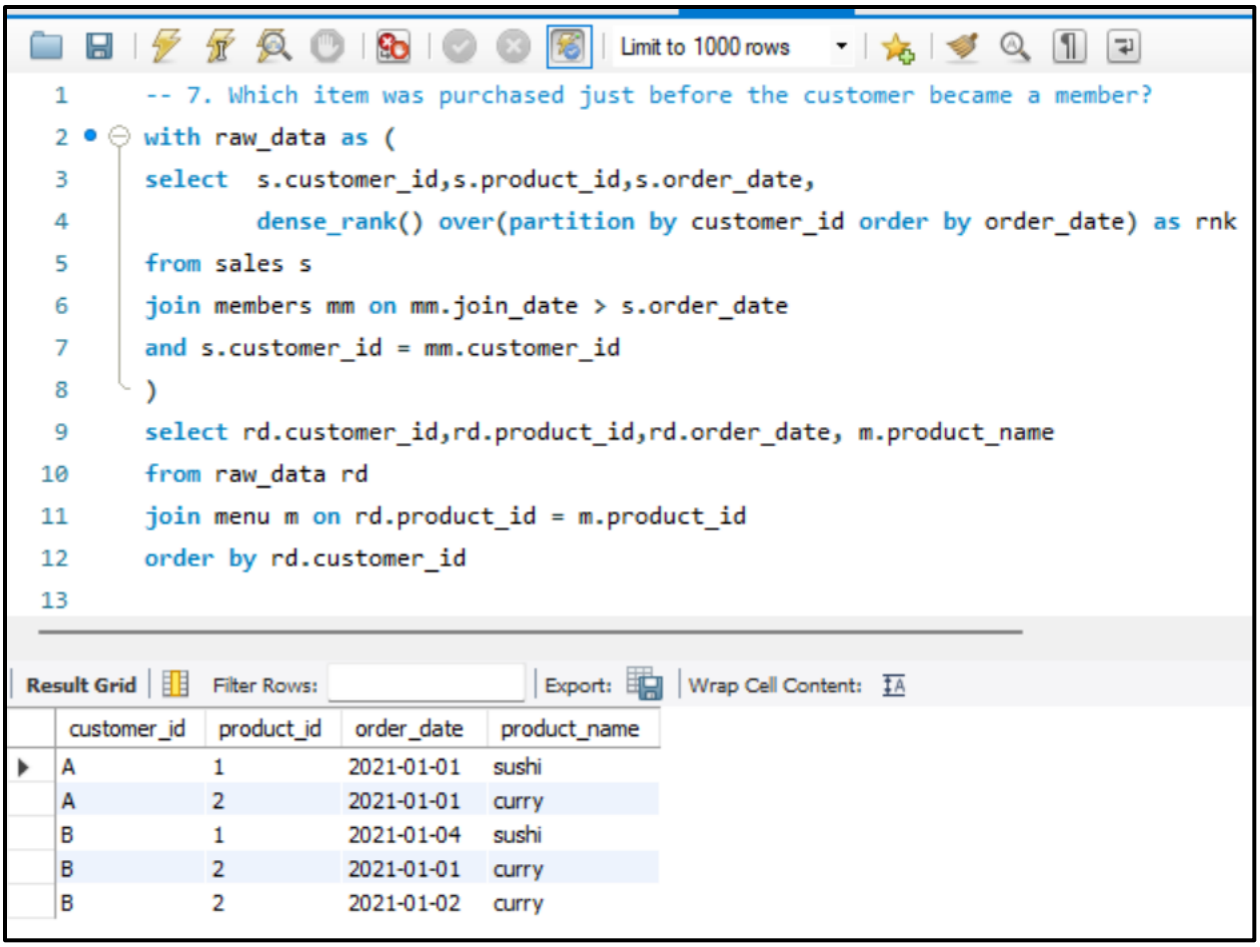
customer_id	product_name	rnk
A	ramen	1
B	curry	1
B	sushi	1
B	ramen	1
C	ramen	1



```sql
-- 6. Which item was purchased first by the customer after they became a member?
with raw_data as (
select  s.customer_id,s.product_id,s.order_date,
        dense_rank() over(partition by customer_id order by order_date) as rnk
from sales s
join members mm on mm.join_date <= s.order_date
and s.customer_id = mm.customer_id
)
select rd.customer_id,rd.product_id,rd.order_date, m.product_name
from raw_data rd
join menu m on rd.product_id = m.product_id
where rnk = 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customer_id	product_id	order_date	product_name
B	1	2021-01-11	sushi
A	2	2021-01-07	curry



```sql
-- 7. Which item was purchased just before the customer became a member?
with raw_data as (
select  s.customer_id,s.product_id,s.order_date,
        dense_rank() over(partition by customer_id order by order_date) as rnk
from sales s
join members mm on mm.join_date > s.order_date
and s.customer_id = mm.customer_id
)
select rd.customer_id,rd.product_id,rd.order_date, m.product_name
from raw_data rd
join menu m on rd.product_id = m.product_id
order by rd.customer_id
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customer_id	product_id	order_date	product_name
A	1	2021-01-01	sushi
A	2	2021-01-01	curry
B	1	2021-01-04	sushi
B	2	2021-01-01	curry
B	2	2021-01-02	curry

```sql
-- 8. What is the total items and amount spent for each member before they became a member?
with total_item as  (
select s.customer_id, count(s.product_id) as 'total_item'
from sales s
join members mm on mm.join_date > s.order_date
and s.customer_id = mm.customer_id
group by s.customer_id
),
total_spent as (
select s.customer_id,sum(m.price) as 'total_spent'
from sales s
join menu m on m.product_id = s.product_id
join members mm on s.order_date < mm.join_date
and s.customer_id=mm.customer_id
group by s.customer_id
)
select ti.customer_id, ti.total_item, ts.total_spent
from total_item ti
join total_spent ts on ti.customer_id = ts.customer_id
```

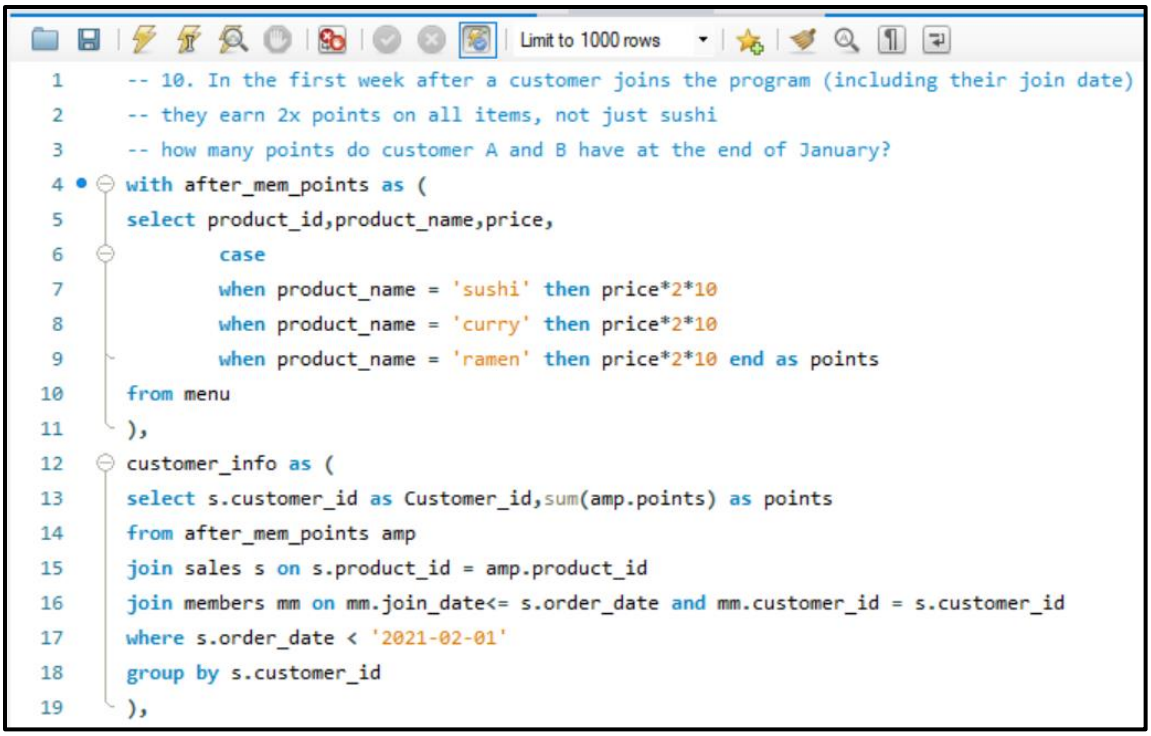
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customer_id	total_item	total_spent
A	2	25
B	3	40

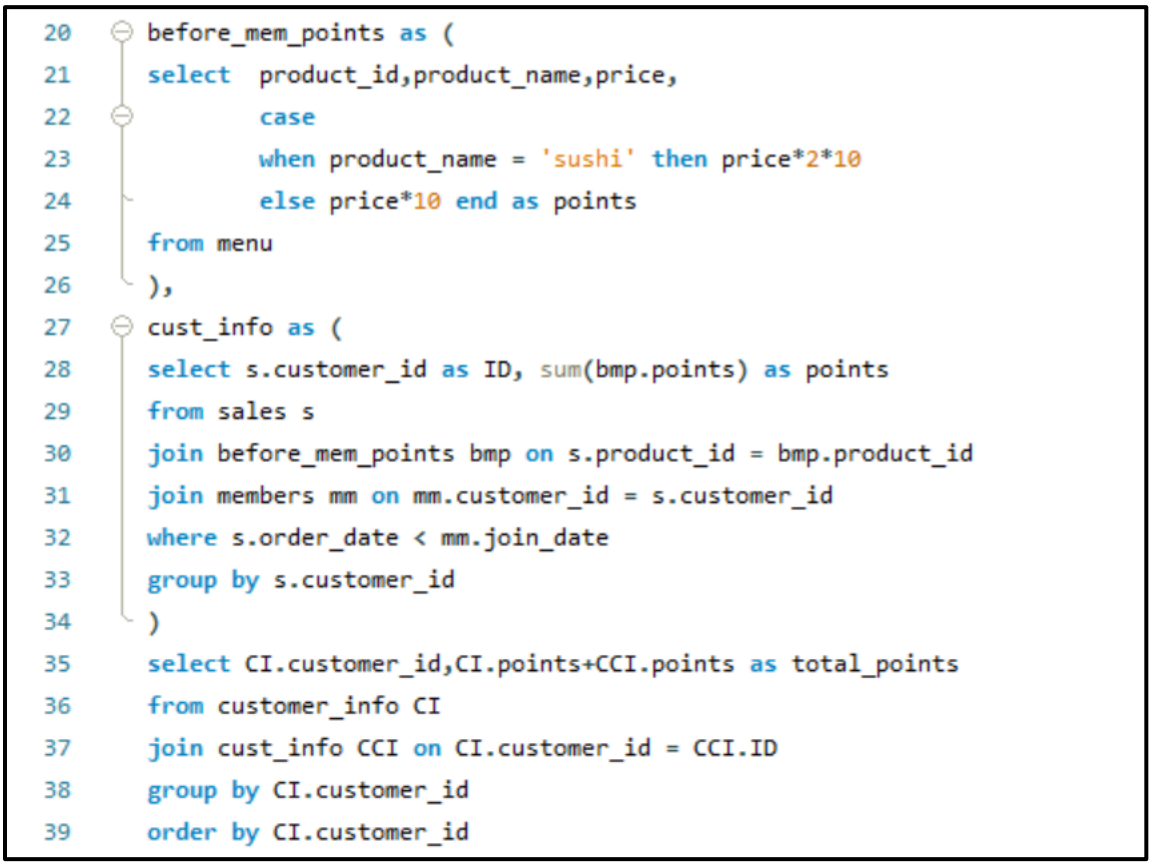
```sql
-- 9.  If each $1 spent equates to 10 points and sushi has a 2x points multiplier
-- how many points would each customer have?
with curry_ramen_points as (
select product_id, price, price*1*10 as points
from menu
where product_name = 'curry' or product_name = 'ramen'
),
sushi_points as (
select product_id, price, price*2*10 as points
from menu
where product_name = 'sushi'
),
total_points as (
select sp.product_id,sp.price, sp.points
from sushi_points sp
union
select crp.product_id,crp.price,crp.points
from curry_ramen_points crp
)
select s.customer_id, sum(tp.points) as 'Total_points'
from sales s
join total_points tp on s.product_id = tp.product_id
group by s.customer_id
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

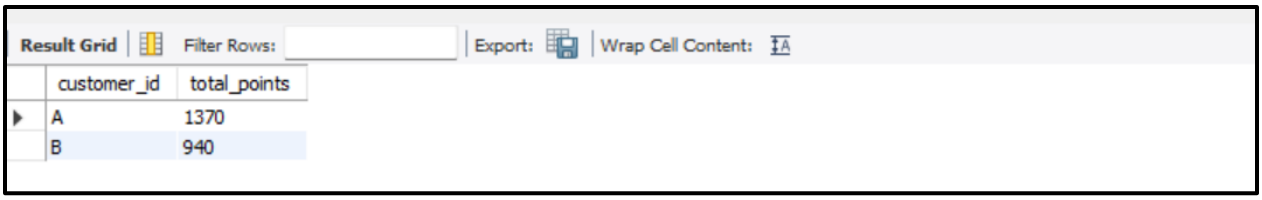
customer_id	Total_points
A	860
B	940
C	360



```sql
-- 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 after_mem_points as (
select product_id,product_name,price,
        case
        when product_name = 'sushi' then price*2*10
        when product_name = 'curry' then price*2*10
        when product_name = 'ramen' then price*2*10 end as points
from menu
),
customer_info as (
select s.customer_id as Customer_id,sum(amp.points) as points
from after_mem_points amp
join sales s on s.product_id = amp.product_id
join members mm on mm.join_date<= s.order_date and mm.customer_id = s.customer_id
where s.order_date < '2021-02-01'
group by s.customer_id
),
```



```sql
before_mem_points as (
select  product_id,product_name,price,
        case
        when product_name = 'sushi' then price*2*10
        else price*10 end as points
from menu
),
cust_info as (
select s.customer_id as ID, sum(bmp.points) as points
from sales s
join before_mem_points bmp on s.product_id = bmp.product_id
join members mm on mm.customer_id = s.customer_id
where s.order_date < mm.join_date
group by s.customer_id
)
select CI.customer_id,CI.points+CCI.points as total_points
from customer_info CI
join cust_info CCI on CI.customer_id = CCI.ID
group by CI.customer_id
order by CI.customer_id
```



customer_id	total_points
A	1370
B	940