```
-- 6 Which item was purchased first by the customer after they became a
member?
select * from
(select c.*, rank() over(partition by userid order by created_date) rnk
from
(select a.userid, a.created_date, a.product_id, b.gold_signup_date
from sales a
inner join goldusers_signup b
on a.userid = b.userid and created_date > gold_signup_date) c) d
where rnk = 1;
```

Output

userid integer	created_date date	product_id integer	gold_signup_date date	rnk bigint
1	2018-03-19	3	2017-09-22	1
3	2017-12-07	2	2017-04-21	1

```
--7 Which item was purchased just before the customer became a member?
select * from
(select c.*, rank() over(partition by userid order by created_date desc)
rnk from
(select a.userid, a.created_date, a.product_id, b.gold_signup_date
from sales a
inner join goldusers_signup b
on a.userid = b.userid and created_date <= gold_signup_date) c) d
where rnk = 1;
```

Output

userid integer	created_date date	product_id integer	gold_signup_date date	rnk bigint
1	2017-04-19	2	2017-09-22	1
3	2016-12-20	2	2017-04-21	1

```
--8 What is the total orders and amount spent for each member before they
became a member?
select userid, count(created_date) no_of_order_purchased, sum(price)
total_amount_spent from
(select c.*, d.price from (select a.userid, a.created_date, a.product_id,
b.gold_signup_date
from sales a
inner join goldusers_signup b
on a.userid = b.userid and created_date <= gold_signup_date) c
inner join product d
on c.product_id = d.product_id) e
group by userid
order by userid;
```

Output

userid integer	no_of_order_purchased bigint	total_amount_spent bigint
1	5	4030
3	3	2720

```
-- 9 If buying each product generates points for eg 5rs = 2 zomato point
and each product has different purchasing points
-- for eg for p1 5rs = 1 zomato point, for p2 10rs = 5 zomato point and
p3 5rs = 1 zomato point.

select userid, sum(total_points)*2.5 total_money_earned from
(select e.*, amount_spent/points total_points from
(select d.*, case when product_id = 1 then 5 when product_id = 2 then 2
when product_id = 3 then 5 end as points from
(select userid, product_id, sum(price) amount_spent from
(select a.userid, a.product_id, b.price
from sales a
inner join product b
on a.product_id = b.product_id) c
group by userid, product_id) d) e) f
group by userid;
```

Output

userid integer	total_money_earned numeric
3	4242.5
2	1907.5
1	4572.5

```
--10 Calculate points collected by each customers and for which product
most points have given till now.
select * from
(select g.*, rank() over(order by total_points_earned desc)rnk from
(select product_id, sum(points_earned) total_points_earned from
(select e.*, total_amount/points as points_earned from
(select d.*, case when product_id = 1 then 5 when product_id = 2 then 2
when product_id = 3 then 5 end as points from
(select userid, product_id,sum(price) total_amount from
(select a.userid, a.product_id, b.price
from sales a
inner join product b
using(product_id)) c
group by userid, product_id) d) e) f
group by product_id) g) h
where rnk = 1;
```

Output

product_id integer	total_points_earned numeric	rnk bigint
2	3045	1

```
/* 11 In the first one year after a customer joins the gold program
(including their join date) irrespective
of what the customer has purchased they earn 5 zomato points for every 10
rs spent who earned more 1 or 3
and what was their points earnings in their first year?
*/

select c.*, d.price*0.5 total_points_earned from
(select a.*, b.gold_signup_date
from sales a
inner join goldusers_signup b
on a.userid = b.userid and created_date >= gold_signup_date and
created_date <= DATE (gold_signup_date) + interval '1 year')c
inner join
product d on c.product_id = d.product_id
order by userid;
```

Output

userid integer	created_date date	product_id integer	gold_signup_date date	total_points_earned numeric
1	2018-03-19	3	2017-09-22	165.0
3	2017-12-07	2	2017-04-21	435.0

```
-- 12 Rank all the transactions of the customers
select *, rank() over(partition by userid order by created_date) from
sales;
```

Output

userid	created_date	product_id	rank
1	11-03-2016	1	1
1	20-05-2016	3	2
1	09-11-2016	1	3
1	11-03-2017	2	4
1	19-04-2017	2	5
1	19-03-2018	3	6
1	23-10-2019	2	7
2	24-09-2017	1	1
2	08-11-2017	2	2
2	10-09-2018	3	3
2	20-07-2020	3	4
3	10-11-2016	1	1
3	15-12-2016	2	2
3	20-12-2016	2	3
3	07-12-2017	2	4
3	18-12-2019	1	5