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Assignment of Sql Queries

Products related queries

1) **Display name of products which are not sold by employee Peter.**

Solution:-

```
Select product_name from Product where product_id not in(Select product_id from orderdetail where  order_id in(Select order_id from ordermaster where emp_id in(Select emp_id from employee where emp_name='Peter')));
```

2) **Display name of products which are not purchased by customer Smith**.

Solution:-

```
Select product_name from product where product_id  not in(Select product_id from orderdetail where order_id in (Select order_id from ordermaster where customer_id in (Select customer_id from customer where  customer_name like'Smith')));
```

3) **Display name of products which are purchased individually.**
Solution:-

```
Select product_name,product_id from product where product_id in (Select product_id
from orderdetail where order_id in ( Select order_id  from orderdetail group by
order_id having Count(*)=1));
```

4) Display name of products which are purchased by maximum number of customers.

```
Select product_name from product where product_id in (Select product_id
from(Select  Count(*) as noofproduct,product_id from orderdetail  group by
product_id) as t1,(Select MAX(noofproduct) as Maximum from(Select  Count(*) as
noofproduct,product_id from orderdetail  group by product_id)as t)as t2 where
t1.noofproduct=t2.Maximum);
```

5) Display name of products which are sold by employees whose manager is Michael.

```
Select product_id,product_name from product where product_id in (Select product_id
from orderdetail where order_id in(Select order_id from ordermaster where emp_id
in(Select emp_id from employee where emp_manager_id in(Select emp_id from
employee where emp_name like 'Michael'))));
```

6) Display name of products which are not purchased by any customer from last 4 months.

```
Select * from product where product_id not  in ( Select product_id from orderdetail
where order_id in (Select order_id from ordermaster where Order_date >any(Select
DATEADD(MONTH,-4,GETDATE())as dateAdd)));
```

7) Display name of products which are sold maximum in months June and July.

```
Select product_name from product where product_id in(Select product_id from(Select
count(*) as totalproduct, product_id from orderdetail where order_id in (select
order_id from ordermaster where MONTH(Order_date) in (6,7)) group by product_id)
as t1,
```

```
(Select MAX(totalproduct) as maximumproduct from(Select count(*) as totalproduct,
product_id from orderdetail where order_id in (select order_id from ordermaster
where MONTH(Order_date) in (6,7)) group by product_id) as t)as t2 where
t2.maximumproduct=t1.totalproduct );
```

---

8) Display name of top five products which are in high demand in all 12 months.

```
Select top 5 * from (Select Product_name,count(*) as count from (Select *,different-
Previous as value from (Select *,LEAD(different,1,different)over (partition by
Product_name order by order_date)as Previous from (select
OrderMaster.order_id,Order_date,product_name,count(*) over(partition by
Product_name order by order_date) as
count,DATEDIFF(Month,Order_date,getDate()) as different  from ordermaster inner
join orderdetail on ordermaster.order_id=orderdetail.order_id inner join product on
orderdetail.product_id=product.product_id

) as t ) as t1)as t2 group by Product_name)as t3 ,(Select Product_name,count(*) as
count from (Select *,different-Previous as value from (Select
*,LEAD(different,1,different)over (partition by Product_name order by order_date)as
Previous from (select OrderMaster.order_id,Order_date,product_name,count(*)
over(partition by Product_name order by order_date) as
count,DATEDIFF(Month,Order_date,getDate()) as different  from ordermaster inner
join orderdetail on ordermaster.order_id=orderdetail.order_id inner join product on
orderdetail.product_id=product.product_id

) as t ) as t1 where different-Previous in (0,1))as t2 group by Product_name)as t4
where t3.count=t4.count and t3.product_name=t4.product_name and t4.count>=12;
```

---

9) Display name of products which are purchased in all 12 months.

```
Select top 5 * from (Select Product_name,count(*) as count from (Select *,different-
Previous as value from (Select *,LEAD(different,1,different)over (partition by
Product_name order by order_date)as Previous from (select
OrderMaster.order_id,Order_date,product_name,count(*) over(partition by
Product_name order by order_date) as
count,DATEDIFF(Month,Order_date,getDate()) as different  from ordermaster inner
join orderdetail on ordermaster.order_id=orderdetail.order_id inner join product on
orderdetail.product_id=product.product_id
```

```
) as t ) as t1)as t2 group by Product_name)as t3 ,(Select Product_name,count(*) as
count from (Select *,different-Previous as value from (Select
*,LEAD(different,1,different)over (partition by Product_name order by order_date)as
Previous from (select OrderMaster.order_id,Order_date,product_name,count(*)
over(partition by Product_name order by order_date) as
count,DATEDIFF(Month,Order_date,getDate()) as different  from ordermaster inner
join orderdetail on ordermaster.order_id=orderdetail.order_id inner join product on
orderdetail.product_id=product.product_id

) as t ) as t1 where different-Previous in (0,1))as t2 group by Product_name)as t4
where t3.count=t4.count and t3.product_name=t4.product_name and t4.count>=12;
```

---

10) Display name of products which are purchased only once but in all 12 months

---

```
Select * from (Select Product_name,count(*) as count from (Select *,different-
Previous as value from (Select *,LEAD(different,1,different)over (partition by
Product_name order by order_date)as Previous from (select
OrderMaster.order_id,Order_date,product_name,count(*) over(partition by
Product_name order by order_date) as
count,DATEDIFF(Month,Order_date,getDate()) as different  from ordermaster inner
join orderdetail on ordermaster.order_id=orderdetail.order_id inner join product on
orderdetail.product_id=product.product_id

) as t ) as t1)as t2 group by Product_name)as t3 ,(Select Product_name,count(*) as
count from (Select *,different-Previous as value from (Select
*,LEAD(different,1,different)over (partition by Product_name order by order_date)as
Previous from (select OrderMaster.order_id,Order_date,product_name,count(*)
over(partition by Product_name order by order_date) as
count,DATEDIFF(Month,Order_date,getDate()) as different  from ordermaster inner
join orderdetail on ordermaster.order_id=orderdetail.order_id inner join product on
orderdetail.product_id=product.product_id

) as t ) as t1 where different-Previous in (0,1))as t2 group by Product_name)as t4
where t3.count=t4.count and t3.product_name=t4.product_name and t4.count<=1;
```

Employees related queries

1)Display name of employees which have only two a's.

```
Select emp_name from (Select (len(emp_name)-len(REPLACE(emp_name,'a',''))) as totalA,emp_name from employee )as t where totalA='2';
```

2) Display name of employees in ascending order according to last two characters of each name.

```
Select * from (select emp_name,Right(emp_name,2)as twochacter from employee) as t  order by twochacter;
```

3) Display name of employees who attended maximum number of customers in last month.

```
Select emp_id,emp_name from employee where emp_id in (Select emp_id from (Select Count(*) noOfCustomers,emp_id from (Select * from ordermaster where (Order_date) between DATEADD(month,-1,current_timestamp) and CURRENT_TIMESTAMP)as t group by t.emp_id

)as t3,(Select max(noOfCustomers) as maxno from (Select Count(*) noOfCustomers,emp_id from (Select * from ordermaster where (Order_date) between DATEADD(month,-1,current_timestamp) and CURRENT_TIMESTAMP)as t group by t.emp_id

)as t2) as t4 where t3.noOfCustomers=t4.maxno);
```

4) Display name of employees who sold maximum number of products in last month.

```
Select emp_id,emp_name from employee where emp_id in (Select emp_id  from
(Select count(*) as totalProduct,emp_id from (Select * from (Select
ordermaster.order_id,ordermaster.Order_date,ordermaster.emp_id,ordermaster.cus
tomer_id,orderdetail.product_id,orderdetail.quantity from orderdetail,ordermaster
where orderdetail.order_id=ordermaster.order_id

) as t1 where  (t1.Order_date) between DATEADD(month,-1,current_timestamp) and
CURRENT_TIMESTAMP)as t group by t.emp_id) as t4,(Select MAX(t3.totalProduct) as
MaximumValue from(Select count(*) as totalProduct,emp_id from (Select * from
(Select
ordermaster.order_id,ordermaster.Order_date,ordermaster.emp_id,ordermaster.cus
tomer_id,orderdetail.product_id,orderdetail.quantity from orderdetail,ordermaster
where orderdetail.order_id=ordermaster.order_id

) as t1 where  (t1.Order_date) between DATEADD(month,-1,current_timestamp) and
CURRENT_TIMESTAMP)as t group by t.emp_id

)as t3)as t5 where t4.totalProduct=t5.MaximumValue);
```

---

5) Display name of employees who have grade B and having manager belongs to Admin department.

```
Select emp_name from (Select * from (Select
t2.emp_id,t2.emp_name,t2.emp_salary,t2.grade,t2.emp_manager_id,t1.dept_id as
Dept_ID_of_Manager from (Select * from employee)as t1 right outer join (Select
e.emp_id,e.emp_name,e.emp_salary,sg.grade,e.emp_manager_id from employee e
,salarygrades sg where e.emp_salary between sg.min_Salary and sg.max_Salary

)as t2 on t1.emp_id=t2.emp_manager_id) as t3 left outer join (Select * from
department) as t4 on t3.Dept_ID_of_Manager=t4.dept_id) as t5 where t5.grade='B'
and t5.dept_name='admin';
```

Customers related queries

1) Display name of customers giving maximum number of orders

```
Select customer_id,customer_name from customer where customer_id in(Select
customer_id from (Select Count(*) as noOfOrder,customer_id from ordermaster
group by customer_id)as t1,(Select max(noOfOrder) as Maximum from (Select
Count(*) as noOfOrder,customer_id from ordermaster group by customer_id)as t)as
t2 where t1.noOfOrder=t2.Maximum);
```

2) Display name of customers who purchased maximum number of products

```
Select * from customer where customer_id in (Select customer_id From (Select
customer_id,count(*)as totalProduct from ordermaster inner join orderdetail on
ordermaster.order_id=orderdetail.order_id group by customer_id

) t1 where totalProduct in (Select Max(totalProduct) as MaximumProduct from
(Select customer_id,count(*)as totalProduct from ordermaster inner join orderdetail
on ordermaster.order_id=orderdetail.order_id group by customer_id

)as t));
```

3) Display name of customers who purchased maximum number of different products

```
Select customer_id,customer_name from customer where customer_id in (Select
customer_id from (Select customer_id,Count(DISTINCT  product_id ) as
totalDiffProduct from ordermaster inner join orderdetail on
ordermaster.order_id=orderdetail.order_id group by customer_id

) as t1,(

Select max(totalDiffProduct) as MaximumProduct from (Select
customer_id,Count(DISTINCT  product_id ) as totalDiffProduct from ordermaster
```

```
inner join orderdetail on ordermaster.order_id=orderdetail.order_id group by
customer_id

)as t) as t2 where t1.totalDiffProduct=t2.MaximumProduct);
```

---

4) Display name of customers who are not purchased any product from last three months.

```
Select customer_id,customer_name from Customer where customer_id not in(Select
customer_id from ordermaster,orderdetail where
(ordermaster.order_id=orderdetail.order_id) and Order_date between
DATEADD(MONTH,-3,CURRENT_TIMESTAMP) and CURRENT_TIMESTAMP);
```

---

5) Display name of customers who purchased every month.

```
Select * from (Select customer_name,count(*) as count from (Select *,different-
Previous as value from (Select *,LEAD(different,1,different)over (partition by
customer_name order by order_date)as Previous from (select
ordermaster.order_id,ordermaster.Order_date,customer.customer_name,count(*)
over (partition by customer_name order by order_date) as
count,DATEDIFF(Month,Order_date,getDate()) as different from ordermaster inner
join customer on ordermaster.customer_id=customer.customer_id


) as t ) as t1)as t2 group by customer_name) as t3,(Select customer_name,count(*) as
count from (Select *,different-Previous as value from (Select
*,LEAD(different,1,different)over (partition by customer_name order by
order_date)as Previous from (select
ordermaster.order_id,ordermaster.Order_date,customer.customer_name,count(*)
over (partition by customer_name order by order_date) as
count,DATEDIFF(Month,Order_date,getDate()) as different from ordermaster inner
join customer on ordermaster.customer_id=customer.customer_id


) as t ) as t1 where different-Previous in (0,1))as t2 group by customer_name
```

```
)as t4 where t3.count=t4.count and t3.customer_name=t4.customer_name;
```

Miscellaneous queries

1) Display the name of the product which is costliest.

```
Select product_name from product where product_rate in(Select max(product_rate) from product);
```

2) Display the name of customers who are never attended by employee “Peter”.

```
Select customer_name from customer where customer_id not in(Select customer_id from ordermaster where emp_id in (Select emp_id from employee where emp_name like 'Peter'));
```

3) Display the total billing done by employee “Peter”.

```
Select Sum(totalcost)as total_bill_EMP from ( Select order_id,orderdetail.product_id,quantity,product_name,product_rate,(quantity*product_rate)as totalcost from orderdetail,product where order_id in (

Select order_id from ordermaster where emp_id in( Select emp_id from Employee where emp_name like 'Peter')) and orderdetail.product_id=product.product_id

)as t;
```

4) Display the name of customer who has purchased “Pepsi” but not “Lime Water”.

*Select customer_id,customer_name from customer where customer_id in (Select customer_id from (Select * from (Select ordermaster.order_id,Order_date,customer_id,emp_id,quantity,orderdetail.product_id,product_name,product_rate from ordermaster,orderdetail,product where ordermaster.order_id=orderdetail.order_id and orderdetail.product_id=product.product_id*

) as t1 where product_name like 'Pepsi'

)as t where customer_id not in (Select customer_id from (Select ordermaster.order_id,Order_date,customer_id,emp_id,quantity,orderdetail.product_id,product_name,product_rate from ordermaster,orderdetail,product where ordermaster.order_id=orderdetail.order_id and orderdetail.product_id=product.product_id

) as t2 where product_name like 'Lime Water'))

5) Display the name of employee who generated maximum revenue for month of January.

*Select * from employee where emp_id in (Select top 1 emp_id as total1 from (Select t1.order_id,t1.Order_date,t1.customer_id,t1.emp_id,t2.product_id,t2.quantity,product.product_name,product_rate,(t2.quantity*product.product_rate)as total from (Select * from ordermaster where Month(Order_date) in (1)) as t1 ,(Select * from orderdetail)as t2,product where t1.order_id=t2.order_id and t2.product_id=product.product_id*

)as t3 group by emp_id);

---

6) Display the name of customer who is attended by “Peter” & “Bob”.

---

*Select * from customer where customer_id in (Select customer_id from ordermaster where emp_id in (Select emp_id from employee where emp_name like'Peter')*

Intersect

Select customer_id from ordermaster where emp_id in (Select emp_id from employee where emp_name like 'Bob'));

7) Display the name of employee who has generated maximum revenue for today.

```
Select  emp_id,emp_name from employee where emp_id in (Select top 1 emp_id as
total1 from (Select
t1.order_id,t1.Order_date,t1.customer_id,t1.emp_id,t2.product_id,t2.quantity,produ
ct.product_name,product_rate,(t2.quantity*product.product_rate)as total from
(Select * from ordermaster where (Day(Order_date)=Day(CURRENT_TIMESTAMP))
and (MONTH(Order_date)= Month(CURRENT_TIMESTAMP)) and
(Year(order_date)=YEAR(Current_timestamp))) as t1 ,(Select * from orderdetail)as
t2,product where t1.order_id=t2.order_id and t2.product_id=product.product_id

)as t3 group by emp_id);
```

---

8) Display name of employees who has attended customer "Thompson"

```
Select emp_id,emp_name from employee where emp_id in (

Select emp_id from ordermaster where customer_id in(

Select customer_id from customer where customer_name like 'Thompson'

));
```

---

9) Display the order ids of the order which are placed by "Thompson" but not attended by "Kevin".

```
Select order_id from ordermaster where customer_id in(Select customer_id from
customer where customer_name like 'Thompson') and emp_id not in(Select emp_id
from employee where emp_name like 'Kevin');
```

---

10) Display the name of manager whose team has generated maximum revenue for current financial year

```
Select emp_id,emp_name from employee where emp_id in(

Select emp_manager_id from (Select emp_manager_id,sum(Amount) as Total from
(Select
t.order_id,emp_id,emp_manager_id,orderdetail.product_id,orderdetail.quantity,prod
uct.product_name,product.product_rate,(orderdetail.quantity*product.product_rate)
as Amount from (Select order_id,t1.emp_id,t2.emp_manager_id from (

Select * from ordermaster where (YEAR(Order_date)  in
(YEAR(CURRENT_TIMESTAMP))) )as t1,(Select * from employee where
emp_manager_id is not null) t2 where t1.emp_id=t2.emp_id

)as t inner join orderdetail on t.order_id=orderdetail.order_id inner join product on
orderdetail.product_id=product.product_id

) t3 group by emp_manager_id)as t5,(Select MAX(total)as maximum from (Select
emp_manager_id,sum(Amount) as Total from (Select
t.order_id,emp_id,emp_manager_id,orderdetail.product_id,orderdetail.quantity,prod
uct.product_name,product.product_rate,(orderdetail.quantity*product.product_rate)
as Amount from (Select order_id,t1.emp_id,t2.emp_manager_id from (

Select * from ordermaster where (YEAR(Order_date)  in
(YEAR(CURRENT_TIMESTAMP))) )as t1,(Select * from employee where
emp_manager_id is not null) t2 where t1.emp_id=t2.emp_id

)as t inner join orderdetail on t.order_id=orderdetail.order_id inner join product on
orderdetail.product_id=product.product_id

) t3 group by emp_manager_id)as t4)as t6 where t5.Total=t6.maximum);
```

General Queries

1) Display dept id along with name of all employees in that department The output will be as such:

Dept ID Employee
10 Michael, Arnold
20 Bob,Maria,Peter
…...

```
Select Distinct dept_id,Stuff((Select ','+emp_name from employee inner join
department on employee.dept_id=department.dept_id where
t1.dept_name=department.dept_name for xml path(''),Type).value('.',
'NVARCHAR(MAX)'),1,1,'')

as employees from (Select emp_name,dept_name,employee.dept_id from employee
inner join department on employee.dept_id=department.dept_id)

as t1
```

---

2) Display name, salary and running total salary. The output will be as such:

Name Salary Running Total Salary
Bob 8000 8000
Maria 12000 20000
Peter 16000 36000
.....

```
Select t1.number,t1.emp_name,t1.emp_salary, (Select sum(emp_salary)as total from
(Select top (t1.number) emp_salary from employee order by emp_id)as t)as
runningsalary from (Select emp_name,emp_salary,ROW_NUMBER() over(order by
emp_id) as number from employee )as t1

;
```

---

3) Display name of first employee, third employee, and so forth.

```
Select * from (

Select emp_name,count(*) over (order by emp_id) as [count] from employee )as t
where t.count%2=1;
```

4) Display name and department information for all employees in departments 10 and 20 along with department information for departments 30 and 40.

```
Select * from (Select
emp_id,emp_name,emp_salary,emp_manager_id,dept_name,employee.dept_id
from employee ,department where employee.dept_id=department.dept_id and
employee.dept_id in (10,20))as t1

cross join (Select * from department where dept_id in(30,40))as t2
```

5) Display names and salaries of the employees with the top five salaries.

```
Select top 5 emp_name, emp_salary from employee order by emp_salary desc;
```

6) Display rank the salaries in table employee while allowing for ties The output will be as such:

Rank	Salary
1	8000
2	9000
3	12000
3	12000
.....	

```
Select emp_id,emp_name,emp_salary ,(Select Count(*)+1 from Employee e2 where
e1.emp_salary>e2.emp_salary and e1.emp_salary=e1.emp_salary)as rank from
employee e1 order by emp_salary;
```

7) Display the number of employees in each department as a horizontal histogram with each employee represented by an instance of "*". The output will be as such:

DEPTID	CNT
10	**
20	***
.....	

```
select t1.dept_id,(Select(Select ' * ' as Astrick from (select ROW_NUMBER() over
(order by emp_id) as number from employee) as t where t.number<=t1.CNT for xml
path(''),type).value('.','nvarchar(max)') as Astrick)

from (Select count(*)as CNT ,dept_id from employee group by dept_id)as t1;
```

---

8) Display the number of employees in each department as a vertical histogram with each employee represented by an instance of "*". The output will be as such:

D10	D20	D30
*		
*	*	
*	*	*

```
Select MAX(dept_id_10) D10,

MAX(dept_id_20) D20,

MAX(dept_id_30)D30

from (

Select ROW_NUMBER()over(partition by dept_id order by emp_id) rn,

case when dept_id=10 then '*' else '' end dept_id_10,

case when dept_id=20 then '*' else '' end dept_id_20,

case when dept_id=30 then '*' else '' end dept_id_30

from employee


)x
```

```
group by rn

order by 1 ,2 ,3
```

---

9) Display employee's name, his department, the number of employees in his department (himself included), and the total number of employees.

```
Select emp_name,DepartmentName,Count(*) over (partition by DepartmentName
order by DepartmentName ) as noOfEmployees,count(emp_name) over(order by
DepartmentName ROWS BETWEEN

UNBOUNDED PRECEDING AND UNBOUNDED FOLLOWING)as totalNoEmployees
from (Select emp_name,emp_id,(Select department.dept_name from department
where department.dept_id in (employee.dept_id)) as DepartmentName from
employee



) as t1
```

---

10) Display a list of all Fridays for the current year.

```
with CTE as

(

Select (Select cast((cast(t.[year] as varchar(10))+'-01-01') as datetime) as StartDate
from (Select Year(getDate()) as [year]) as  t) days

union all

Select  DATEADD(Day,1,days) as date2 from CTE where Year(days)<=2019

)

Select days,format(days,'dddd')as dayName from CTE where
format(days,'dddd')='Friday'
```

OPTION (MAXRECURSION 365)