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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')));

1. **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')));

1. **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));

1. **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);

1. **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'))));

1. **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)));

1. **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 );

1. **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;

1. **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;

1. **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.customer\_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.customer\_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,product.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,product.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,product.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)