# ASSIGNMENT - 4

Q1. You are an Analyst working for an E-commerce brand.Understand the below problems and write the relevant queries to complete the analysis.

A. The leadership wants to know the customer base who have ordered only once in the past 6 months such that they can be provided with certain offers to prevent customer churn.

   a. Also, find the number of purchases in each category for these customers.

B. The company is tying up with a Bank for providing offers to a certain set of premium customers only. We want to know those customers who have ordered for a total amount of more than 7000 in the past 3 months.

C. The leadership wants to know which is their top-selling category and least-selling category in 2021

D. We need to flag the Shipper companies whose average delivery time is less than 3 days to incentivize them

E. Find out the Average delivery time for each category by each shipper

F. We need to see the most used Payment method by customers such that we can tie-up with those Banks in order to attract more customers to our website

G. Write a query to show the number of customers, number of orders placed, and total order amount per month in the year 2021. Assume that we are only interested in the monthly reports for a single year (January-December).

H. Find the no. of orders fulfilled by Suppliers residing in the same Country as the customer.

I. Find the cumulative sum of total order amount for the year 2021

J. Find the cumulative sum of total orders placed for the year 2020

Q2. What is the difference between CTE and Subquery?

Q3. You are given two tables, Table1 has 500 rows and Table2 has 0 rows. What will the below query return

"select * from Table1, Table2;"

Q4. What is the difference between a natural join and a cross join?

Q5. What is the difference between a natural join and inner join?

Q6. Determine the no. of records that we will get when you perform
   A. Inner join
   B. Left join
   C. Full Outer join
   D. Right join
   E. Cross join

The joining key for the two tables is Column A.

Table 1

| A | B |
|---|---|
| 1 | B1 |
| 1 | B2 |
| 1 | B3 |
| 3 | B4 |
| 3 | B5 |
| 5 | B6 |
| 5 | B7 |
| 5 | B8 |
| Null | B9 |

Table 2

| A | C |
|---|---|
| 1 | C1 |
| 1 | C2 |
| 3 | C3 |

| | |
|---|---|
| 3 | C4 |
| 3 | C5 |
| Null | C6 |
| 4 | C7 |
| 5 | C8 |
| Null | C9 |

## Q7. What is the difference between a Union and a Join ?

## Q8. What is the difference between Intersect and Inner Join ?

## ANSWERS :-

**Q.1 A.** `SELECT CUSTOMERID FROM ORDERS WHERE DATEDIFF(MONTH,OrderDate,GETDATE())=-6 GROUP BY CUSTOMERID HAVING COUNT(ORDERID)=1;`

**Q.1 B.** `select CUSTOMERID, SUM(total_order_amount)as total from orders where orderdate BETWEEN '2021-09-28' AND '2021-12-28' group by customerid having SUM(total_order_amount)>='7000' order by CustomerID;`

**Q.1 D.** `select B.CompanyName from (select shipperid,avg(datediff(day,orderdate,deliverydate)) as avg_del_day from orders group by ShipperID having avg(datediff(day,orders.orderdate,deliverydate))<3 ) left join shippers B  on a.shipperId=b.ShipperID group by b.companyname;`

**Q.1 E.** `select avg (datediff(day,'orderdate','deliverydate')) as avg_days, A.shipperID, c.CategoryID from orders as A left join OrderDetails as B on A.orderid=B.OrderID left join products as C on b.ProductID=c.ProductID`

`group by ShipperID, CategoryID, avg_days;.`

**Q.1 f.** `select count('orders.PaymentID')total,PaymentType from orders as a left join payments as b on a.paymentid=b.paymentid group by paymenttype;`

**Q.1 g.**`select month(orderdate)months,count(distinct customerID)no_of_customer, count(distinct orderID)no_of_orders,sum(total_order_amount)total_amount from orders where year(orderdate)=2021 group by month(orderdate) order by months;`

**Q.1 h.**
`select count(orderid)no_of_od,SupplierID from orders A left join Customers1 B on A.customerid=b.CustomerID`

```
left join suppliers C on A.ShipperID = C.SupplierID
where B.country=C.Country
group by SupplierID;
```

Q.1 i. & j. only day wise commulative have been taught. Ill cover this once that get done.


Q.2 CTE lets you create recursive queries but sub queries doesn't also CTE are temporary result set.

Q.3. we'll find no records as a result set.

 Q.4.  Natural Join joins two tables based on same attribute name and datatypes wherease Cross Join will produce cross or Cartesian product of two tables if there is no condition specifies.

Q.5. in Natural Join, The resulting table will contain all the attributes of both the tables but keep only one copy of each common column        In Inner Join, The resulting table will contain all the attribute of both the tables including duplicate columns also.

Q.6.  number of records

A. Inner join  = 15
B. Left join = 16
C. Full Outer join = 19
D. Right join = 18
E. Cross join= 81