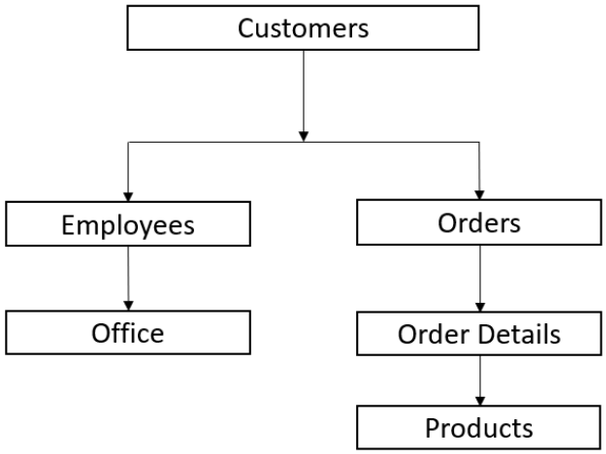
Data Modelling:-



Customer Table: -

Column Name	Data type
Customer number (sno)	INT(PK)
Customer Name	Varchar(50)
Contact Last name	Varchar(50)
Contact First Name	Varchar(50)
Phone Num	Varchar(20)
Address Line 1	Varchar(50)
Address Line 2	Varchar(50)
City	Varchar(25)
State	Varchar(25)
Postal Code	Int
Country	Varchar(25)
Sales Rep Employee Number	Int
Credit limit	Decimal(10,2)

Employees Table:-

Column Name	Data Type
Employee Number	Int(PK)
Last Name	Varchar(50)
First Name	Varchar(50)
Extension	Varchar(10)
Email Id	Varchar(100)
Office Code	Int
Manager Id	Int
Job Title	Varchar(50)

Order Table:-

Column Name	Data Type
Order Number	Int(PK)
Order Date	Date
Required Date	Date
Shipped Date	Date
Status	Varchar(25)
Comments	Text
Customer Number	Int

Office Table:-

Column Name	Data Type
Office Code	Int(PK)
City	Varchar(15)
Phone Num	Varchar(20)
Address Line 1	Varchar(50)
Address Line 2	Varchar(50)
State	Varchar(50)
Country	Varchar(15)
Postal Code	Int
Territory	Varchar(25)

Order Details Table:-

Column Name	Data Type
Order Number	Int(PK)
Product Code	Varchar(15)
Quantity Ordered	Int
Price Each	Decimal(10,2)
Order Line Number	Int

Product Table: -

Column Name	Data Type
Product Code	Varchar(50)PK
Product Name	Varchar(70)
Product Line	Varchar(50)
Product Scale	Varchar(25)
Product Vendor	Varchar(50)
Product Description	Text
Quantity In Stock	Int
Buy Price	Decimal(10,2)
MSRP	Decimal(10,2)

1. Find the customers details who are from USA.

```
Select *
From Customers
Where upper(Country) = 'USA' ;
```

2. Find the customers whose postal code is missing.

```
Select *
from Customers
Where Postalcode is null;
```

3. Find the customers whose postal code and state are missing.

```
Select *
from Customers
Where Postalcode is null and State is null;
```

4. Find customers who don’t have any credit limit.

```
Select *
from customers
where creditLimit is null or Creditlimit = 0;
```

5. Find customers who are from one of the countries USA, France, Norway.

```
Select *
from customers
where country in ('USA', 'France', 'Norway');
```

6. Find all the customers whose customer number is from 100 to 150.

```
Select *
from customers
where Customernumber between 100 and 150;
```

7. Find all the customer details who has the highest credit limit.

```
Select *
from customers
order by creditlimit desc
limit 1 ;
```

8. Find the customers details whose name start with A.

```
Select *
from customers
where customername like 'A%';
```

9. Find count of customers whose name end with '.' (dot).

```
Select count(customername)
, count(*)
, Count(customernumber) as customercount
from customers
where customername like '%.';
```

10. Find highest, lowest, average and sum of credit limit.

```
Select max(creditlimit) as maximum_credit_limit
, Min(creditlimit) as minimun_credit_limit
, avg(creditlimit) as Average_credit_limit
, Sum(creditlimit) as total_credit_limit
from customers;
```

11. Find customers who have placed at least 1 order.

```
select * from customers
where customernumber in ( select customernumber from orders);

Select c.*
from customers as c
inner join orders as od
on c.customernumber = od.customerNumber;
```

12. Find customers who have not ordered anything.

```
select * from customers
where customernumber not in (select customernumber from orders);

Select c.*
from customers as c
left join orders as od
on c.customernumber = od.customerNumber
where od.Customernumber is null;
```

13. Find the no. of orders from each country.

```
Select country
, Count(distinct ordernumber) as cnt
from customers as c
Inner join orders as od
on c.customernumber = od.customerNumber
group by Country;
```

14. Find the details of top 5 customers who have placed more no of orders.

```
select c.*
from customers as c
inner join
( select customernumber, count(ordernumber) cnt
from orders
group by customernumber
order by cnt desc
limit 5 ) o
on c.customernumber = o.customernumber:

select * from customers
where customernumber in
(select customernumber
from
( select customernumber, count(ordernumber) cnt
from orders
group by customernumber
order by cnt desc
limit 5 ) o
)
;
```

15. Find out which employee is responsible for the most no of orders.

```
select e.*, od.cnt from employees as e
inner join
( select c.salesrepemployeenumber
, count(o.ordernumber) cnt
from customers as c
inner join orders as o
on c.customernumber = o.customernumber
group by c.salesrepemployeenumber
order by cnt desc
limit 1) od
on e.employeenumber = od.salesrepemployeenumber
;
```

16. Find out which customer has placed the most valuable order.

```
select cus.*
, dos.Total_order_value
, dos.Count_of_orders  from customers as cus
inner join
( Select
c.customernumber
, Count(odts.ordernumber) as Count_of_orders
, sum(odts.quantityOrdered*odts.priceEach) as Total_order_value
from customers as c
left  join orders as od
on c.customernumber = od.customerNumber
left join orderdetails as odts
on od.orderNumber = odts.ordernumber
group by odts.ordernumber , c.customernumber
order by Total_order_value desc
limit 1 ) as dos
on cus.customernumber = dos.customernumber;
```

17. Find the top 5 most valuable orders and the customer details who placed the order

```
Select cus.*
, dos.ordernumber, dos.total_order_value
from customers as cus
inner join
( select c.customernumber, od.ordernumber
, sum(odts.quantityOrdered*odts.priceEach) as Total_order_value
from customers as c
left  join orders as od
on c.customernumber = od.customerNumber
left join orderdetails as odts
on od.orderNumber = odts.ordernumber
group by od.ordernumber , c.customernumber
order by Total_order_value desc
limit 5 ) as dos
on cus.customernumber = dos.customernumber;
```

18. Rank the performance of employees based on the number of orders.

```
Select *, dense_rank() over (order by total_order desc) as rnk
from
(Select c.salesRepEmployeeNumber , count(od.orderNumber) as total_order
from customers as c
inner join orders as od
on c.customernumber = od.customerNumber
group by c.salesRepEmployeeNumber
order by total_order desc) as performance;
```

19. Calculate the orders distribution by month and by year.

```
select year(orderdate) as Order_year
, month(orderdate) as order_month
, count(ordernumber) as cnt
from orders
group by year(orderdate), month(orderdate);
```

20. Find the no. of days taken to ship each order. And find the average shipping days (Order id ,)

-- DIFF of Dates :-

```
select
ordernumber
, orderDate
, shippedDate
, datediff(shippeddate ,orderdate) as no_of_days
from orders;
```

-- AVG:-

```
select
 avg(datediff(shippeddate ,orderdate)) as difference
from orders;
```

21. Find the customer details who have placed an order and then cancelled it.

```
select cust.*
from orders as ord
left join customers as cust
on cust.customerNumber = ord.customerNumber
where ord.status = 'Cancelled' ;
```

22. Calculate Orders distribution by product category

```
select p.productline
, count(distinct od.ordernumber) cnt from
orderdetails od
left join products as p
on od.productcode = p.productcode
group by p.productline
order by cnt desc ;
```