Weekly Assignment-1

Create Database

```
Create Database SalesDB;
```

Create Tables

Create Client Table

```
Create table Client (
    ClientNo varchar(6) Primary Key,
    Name varchar(20) Not Null,
    Address1 varchar(30),
    Address2 varchar(30),
    City varchar(15),
    PinCode numeric(8),
    State varchar(15),
    BalDue decimal(10,2),
    Check (ClientNo like 'c%')
);
```

Create Product Table

```
Create table Product (
    ProductNo varchar(6) Primary Key,
    Description varchar(15) Not Null,
    ProfitPerc decimal(4,2) Not Null,
    UnitMeasure varchar(10) Not Null,
    QtyOnHand numeric(8) Not Null,
    ReorderLvl numeric(8) Not Null,
    SellPrice decimal(8,2) Not Null,
    CostPrice decimal(8,2) Not Null,
    Check (ProductNo like 'p%'),
    Check (SellPrice <> 0),
    Check (CostPrice <> 0)
);
```

Create Salesman Table

```
Create table Salesman (
    SalesmanNo varchar(6) Primary Key,
    SalesmanName varchar(20) Not Null,
    Address1 varchar(30) Not Null,
    Address2 varchar(30),
    City varchar(20),
    PinCode numeric(8),
    State varchar(20),
    SalAmt decimal(8,2) Not Null,
    TgtToGet decimal(6,2) Not Null,
    YtdSales decimal(6,2) Not Null,
    Remarks varchar(60),
```

```
    Check (SalesmanNo like 's%'),
    Check (SalAmt <> 0)
);
```

Create SalesOrder Table

```
Create table SalesOrder (
    OrderNo varchar(6) Primary Key,
    ClientNo varchar(6),
    OrderDate date,
    DelyAddr varchar(25),
    SalesmanNo varchar(6),
    DelyType char(1),
    BilledYN char(1),
    DelyDate date,
    OrderStatus varchar(20),
    Check (OrderNo like 'o%'),
    Check (DelyType in ('p','f')),
    Check (BilledYN in ('y','n')),
    Check (OrderStatus in ('in process','fulfilled','backorder','cancelled')),
    Foreign key (ClientNo) References Client(ClientNo),
    Foreign key (SalesmanNo) References Salesman(SalesmanNo)
);
```

Create SalesOrderDetails Table

```
Create table SalesOrderDetails (
    OrderNo varchar(6),
    ProductNo varchar(6),
    QtyOrdered numeric(8),
    QtyDisp numeric(8),
    ProductRate decimal(10,2),
    Primary key (OrderNo, ProductNo),
    Foreign key (OrderNo) References SalesOrder(OrderNo),
    Foreign key (ProductNo) References Product(ProductNo)
);
```

Insert Records

Insert Records into Client Table

```
insert into Client
values
('C00001','Rohit Mehta','Flat 10','Andheri East','Mumbai',400069,'Maharashtra',18000),
('C00002','Priya Nair','House 22','Vyttila','Kochi',682019,'Kerala',22000),
('C00003','Suresh Rao','Plot 5','BTM Layout','Bangalore',560076,'Karnataka',14000),
('C00004','Ivan Bayross','A-9','Lajpat Nagar','Delhi',110024,'Delhi',26000);
```

Insert Records into Product Table

```
insert into Product
values
```

('P00001','Formal Shirts',4.50,'Piece',180,40,2200,1800),
('P00002','Trousers',6.00,'Piece',140,35,2600,2100),
('P00003','Pull Overs',5.00,'Piece',120,30,2800,2200),
('P00004','Jackets',8.00,'Piece',110,30,4500,3800),
('P00005','Winter Coats',7.00,'Piece',90,25,5200,4500);

Insert Records into Salesman Table

```
insert into Salesman
values
('S00011','Karthik','D-12','T Nagar','Chennai',600017,'Tamil Nadu',4000,200,100,'Excellent'),
('S00012','Meena','E-18','Panampilly','Kochi',682036,'Kerala',3500,180,90,'Good'),
('S00013','Ajay','F-7','Koramangala','Bangalore',560095,'Karnataka',3800,160,80,'Average'),
('S00014','Pooja','G-4','Dwarka','Delhi',110075,'Delhi',4200,220,110,'Excellent'),
('S00015','Aman','A-14','Worli','Mumbai',400002,'Maharashtra',3000,100,50,'Good');
```

Insert Records into SalesOrder Table

```
insert into SalesOrder
values
('O18999','C00002','2025-04-15','Kochi','S00012','P','Y','2025-04-30','Fulfilled'),
('O19001','C00001','2025-05-10','Mumbai','S00011','F','N','2025-05-25','In Process'),
('O19002','C00002','2025-05-15','Kochi','S00012','P','Y','2025-06-01','Fulfilled'),
('O19003','C00003','2025-06-05','Bangalore','S00013','F','N','2025-06-20','Backorder'),
('O19004','C00004','2025-05-28','Delhi','S00014','P','Y','2025-06-10','Fulfilled'),
('O19005','C00001','2026-01-02','Mumbai','S00015','F','N','2026-01-03','In Process');
```

Insert Records into SalesOrderDetails Table

```
insert into SalesOrderDetails
values
('O18999','P00001',4,4,2200),
('O19001','P00001',5,5,2200),
('O19002','P00002',3,3,2600),
('O19003','P00003',2,2,2800),
('O19004','P00004',1,1,4500),
('O19005','P00001',6,6,2200);
```

Answer following queries with the help of above schema:

1. Display the names of all the clients.

```
select Name from Client;
```

	Name
1	Rohit Mehta
2	Priya Nair
3	Suresh Rao
4	Ivan Bayross

2.Display all the clients who are located in Mumbai.

```
select * from Client where City='Mumbai';
```

	ClientNo	Name	Address1	Address2	City	PinCode	State	BalDue
1	C00001	Rohit Mehta	Flat 10	Andheri East	Mumbai	400069	Maharashtra	18000.00

3.Display all the products whose selling price is > 2000 and < 5000.

```
select * from Product where SellPrice>2000 and SellPrice<5000;
```

	ProductNo	Description	ProfitPerc	UnitMeasure	QtyOnHand	ReorderLvl	SellPrice	CostPrice
1	P00001	Formal Shirts	4.50	Piece	180	40	2200.00	1800.00
2	P00002	Trousers	6.00	Piece	140	35	2600.00	2100.00
3	P00003	Pull Overs	5.00	Piece	120	30	2800.00	2200.00
4	P00004	Jackets	8.00	Piece	110	30	4500.00	3800.00

4. Display Name, City and State of clients not in the state of Maharashtra.

```
select Name , City ,State from Client where State!='Maharashtra';
```

	Name	City	State
1	Priya Nair	Kochi	Kerala
2	Suresh Rao	Bangalore	Karnataka
3	Ivan Bayross	Delhi	Delhi

5. Display address information of client no C00001 and C00002.

```
select ClientNo,Address1,Address2,City,PinCode,State  from Client;
```

	ClientNo	Address1	Address2	City	PinCode	State
1	C00001	Flat 10	Andheri East	Mumbai	400069	Maharashtra
2	C00002	House 22	Vyttila	Kochi	682019	Kerala
3	C00003	Plot 5	BTM Layout	Bangalore	560076	Karnataka
4	C00004	A-9	Lajpat Nagar	Delhi	110024	Delhi

6.Change the selling price of '1.44 drive' to Rs. 1150.50.

```
update Product
set SellPrice=1150.0
where Description='1.44 drive';
```

7.Delete the record of client no C00005.

```
delete from Client where ClientNo ='C00005';
```

8.Display the clients who stay in a city whose second letter is 'a'.

```
select * from Client where City like'_a%';
```

	ClientNo	Name	Address1	Address2	City	PinCode	State	BalDue
1	C00003	Suresh Rao	Plot 5	BTM Layout	Bangalore	560076	Karnataka	14000.00

9.Count the number of products having price greater than or equal to 1500.

```
select count(*) as No_Of_Products from Product where SellPrice>1500;
```

	No_Of_Products
1	4

10. Display qtyordered, qtydisp and balanceqty (not in table).

```
select s.QtyOrdered,s.QtyDisp,p.QtyOnHand as balanceQty
from
SalesOrderDetails as s
join product as p
on s.ProductNo=p.ProductNo;
```

	QtyOrdered	QtyDisp	BalanceQty
1	4	4	180
2	5	5	180
3	3	3	140
4	2	2	120
5	1	1	110
6	6	6	180

Write Commands to do Following:

1.Make Client_no as primary key in client_master

```
alter table Client
add Constraint pk_client Primary Key (ClientNo);
```

2.Add a new column phone_no in the client_master table

```
alter table Client
add phone_no varchar (15);
```

3.Add NOT NULL constraint in product_master table

```
alter table Product
alter column Description varchar(50) NOT NULL;

alter table product
alter column ProfitPerc decimal(5,2) NOT NULL;

alter table Product
alter column SellPrice decimal(10,2) NOT NULL;

alter table Product
alter column CostPrice decimal(10,2) NOT NULL;
```

4.Change size of name column to 60 in client_master table

```
alter table Client
alter column Name varchar(60);
```

5.Remove pincode column from client_master table

```
alter table Client
drop column Pincode;
```

Define in 1 or 2 lines and give one example also:

1. Recursive Relationship

A recursive relationship is when a table refers to itself to show a relationship between its own records.
Example: In an Employee table, one employee can have another employee as their manager, and both are stored in the same table.

2. Composite Key

A Composite key is a Primary key is a combination of two or more columns that uniquely identify a record.
Example : An address in the Client table is stored using two columns to hold location details. Address1 = '12 MG Road', Address2 = 'Near Metro Station', City = 'Bangalore', PinCode = 560001, State = 'Karnataka'.

3. The LIKE Operator with Pattern Matching

The LIKE operator is used to find records where the text matches a specific pattern, such as starting with, ending with, or containing certain letters.
Example: select * from Client where City like'_a%';

4.DROP TABLE Command

The DROP TABLE command is used to remove a table structure as well as its data from a database.
Example: DROP TABLE SalesOrder;

5. FULL OUTER JOIN

A FULL OUTER JOIN displays all rows from both tables, including matching and non-matching rows. Rows without a match display NULL.
Example:

```
select sod.OrderNo,p.ProductNo,p.Description,sod.QtyOrdered
from
Product P
FULL OUTER JOIN
SalesOrderDetails sod
on p.ProductNo=sod.ProductNo;
```

WRITE QUERIES FOR FOLLOWING DESCRIPTIONS: (Joins)

1.Find out the products which have been sold to Ivan Bayross.

```
select distinct p.productno, p.description from Client c
join SalesOrder s
on c.clientno = s.clientno
join SalesOrderDetails sod
on s.orderno = sod.orderno
join product p
on sod.productno = p.productno
where c.name = 'Ivan Bayross';
```

	productno	description
1	P00004	Jackets

2.Finding out the products and their quantities that will have to be delivered in the current month.

```
select
    p.ProductNo,
    p.Description,
    sod.QtyOrdered
from SalesOrder s
join SalesOrderDetails sod
on s.OrderNo = sod.OrderNo
join Product p
on sod.ProductNo = p.ProductNo
where
   month(s.DelyDate) = month(getdate())
   and year(s.DelyDate) = year(getdate());
```

	ProductNo	Description	QtyOrdered
1	P00001	Formal Shirts	6

3. Listing the ProductNo and description of constantly sold (i.e. rapidly moving) products.

```
select p.ProductNo, p.Description
from Product p
join SalesOrderDetails sod
on p.ProductNo = sod.ProductNo
group by p.ProductNo, p.Description
having count(sod.OrderNo) > 1;
```

	ProductNo	Description
1	P00001	Formal Shirts

4. Finding the names of clients who have purchased Trousers.

```
select c.ClientNo,c.Name , p.Description
from
Client c
join
SalesOrder so
on c.ClientNo=so.ClientNo
join
SalesOrderDetails sod
on so.OrderNo=sod.OrderNo
join
Product p
on sod.ProductNo=p.ProductNo
```

where p.Description='Trousers';

	ClientNo	Name	Description
1	C00002	Priya Nair	Trousers

5. Listing the products and orders from customers who have ordered less than 5 units of Pull Overs.

```
select c.ClientNo,c.Name,p.Description,sod.QtyOrdered
from Client c
join
SalesOrder so
on c.ClientNo=so.ClientNo
join SalesOrderDetails sod
on so.OrderNo=sod.OrderNo
join Product p
on sod.ProductNo=p.ProductNo
where p.description = 'Pull Overs'and sod.qtyordered < 5;
```

	ClientNo	Name	Description	QtyOrdered
1	C00003	Suresh Rao	Pull Overs	2

WRITE QUERIES FOR FOLLOWING DESCRIPTIONS: (Subqueries)

1.Finding the non-moving products i.e. products not being sold.

```
select * from Product
where ProductNo not in (
select distinct ProductNo from SalesOrderDetails);
```

	ProductNo	Description	ProfitPerc	UnitMeasure	QtyOnHand	ReorderLvl	SellPrice	CostPrice
1	P00005	1.44 drive	7.00	Piece	90	25	5200.00	4500.00

2.Finding the name and complete address for the customer who has placed Order number 'O19001'.

```
select Name, Address1, Address2, City,pincode, State
from client
where ClientNo =(
select ClientNo from salesorder where orderno = 'O19001');
```

	Name	Address1	Address2	City	pincode	State
1	Rohit Mehta	Flat 10	Andheri East	Mumbai	400069	Maharashtra

3.Finding the clients who have placed orders before the month of May '02.
(Since I took 2025 Orderdates will consider May ' 25)

```
select * from Client where ClientNo in (
select ClientNo from SalesOrder
where OrderDate < '2025-05-01');
```

	ClientNo	Name	Address1	Address2	City	PinCode	State	BalDue
1	C00002	Priya Nair	House 22	Vyttila	Kochi	682019	Kerala	22000.00

WRITE COMMANDS TO DO FOLLOWING

1. Display system date as Saturday, February 11, 2012.

```
select format(cast('2012-02-11' as date), 'dddd, MMMM dd, yyyy') as SystemDate;
```

	SystemDate
1	Saturday, February 11, 2012

2. Display Balance Due from Client master as $99,999.99.

```
select
    Name,
    Format(BalDue, '$99,999.99') as BalanceDue
from Client;
```

	Name	BalanceDue
1	Rohit Mehta	$999991800099
2	Priya Nair	$999992200099
3	Suresh Rao	$999991400099
4	Ivan Bayross	$999992600099

3. Display message as 'Salesman Aman sold goods of 50 while the given target was 100'.

```
select
'Salesman ' + SalesmanName +
'sold goods of ' + cast(YtdSales as varchar) +
' while given target was ' + cast(TgtToGet as varchar) as message
from Salesman where SalesmanName = 'Aman';
```

	message
1	Salesman Amansold goods of 50.00 while given target was 100.00

4. Display your Age in Years.

```
select datediff(year, '2005-03-20', getdate()) as Age;
```

	Age
1	21