

## Weekly Assignment-1

### Sales Table:

CLIENT_MASTER			PRODUCT_MASTER			SALESMAN_MASTER		
CLIENTNO	vc2(6)	PK & Must start with 'C'	PRODUCTNO	vc2(6)	PK & Must start with 'P'	SALESMANNO	vc2(6)	PK & Must start with 'S'
NAME	vc2(20)	NOT NULL	DESCRIPTION	vc2(15)	NOT NULL	SALESMANNAME	vc2(20)	NOT NULL
ADDRESS1	vc2(30)		PROFITPERC	n(4,2)	NOT NULL	ADDRESS1	vc2(30)	NOT NULL
ADDRESS2	vc2(30)		UNITMEASURE	vc2(10)	NOT NULL	ADDRESS2	vc2(30)	
CITY	vc2(15)		QTYONHAND	n(8)	NOT NULL	CITY	vc2(20)	
PINCODE	n(8)		REORDERLVL	n(8)	NOT NULL	PINCODE	n(8)	
STATE	vc2(15)		SELLPRICE	n(8,2)	NOT NULL & can't be 0	State	vc2(20)	
BALDUE	n(10,2)		COSTPRICE	n(8,2)	NOT NULL & can't be 0	SALAMT	n(8,2)	NOT NULL & Can't be 0
						TGTOGET	n(6,2)	NOT NULL
						YTDSALES	n(6,2)	NOT NULL
						REMARKS	vc2(60)	

  

SALES_ORDER			SALES_ORDER_DETAILS		
ORDERNO	vc2(6)	PK & Must start with 'O'	ORDERNO	vc2(6)	FK to SALES_ORDER
CLIENTNO	vc2(6)	FK to CLIENT_MASTER	PRODUCTNO	vc2(6)	FK to PRODUCT_MASTER
ORDERDATE	date		QTYORDERED	n(8)	
DELYADDR	vc2(25)		QTYDISP	n(8)	
SALESMANNO	vc2(6)	FK to SALESMAN_MASTER	PRODUCTRATE	n(10,2)	
DELYTYPE	char(1)	Check 'P' or 'F'	Create Composite PRIMARY KEY of ORDERNO and PRODUCTNO		
BILLEDYN	char(1)	Check 'Y' or 'N'			
DELYDATE	date				
ORDERSTATUS	vc2(10)	Check 'In Process' or 'Fulfilled' or 'Backorder' or 'Cancelled'			

### Q1:Create Table Commands and Inserting Records:

#### Client\_Master:

CREATE TABLE Client\_Master (

ClientNo VARCHAR(6) PRIMARY KEY CHECK (ClientNo LIKE 'C%'),

Name VARCHAR(20) NOT NULL,

Address1 VARCHAR(30),

Address2 VARCHAR(30),

City VARCHAR(15),

Pincode BIGINT,

State VARCHAR(15),

BalDue DECIMAL(10,2)

);

INSERT INTO Client\_Master VALUES

('C00001','Ivan Bayross','Flat

1','Colaba','Mumbai',400001,'Maharashtra',3500),

```

('C00002','Aman Gupta','Flat
2','Andheri','Mumbai',400002,'Maharashtra',4500),
('C00003','Riya Sharma','Flat
3','Bandra','Mumbai',400003,'Maharashtra',2500),
('C00004','Rahul Mehta','Flat
4','Pune','Pune',411001,'Maharashtra',1500),
('C00005','Sneha Patil','Flat
5','Nagpur','Nagpur',440001,'Maharashtra',2000),
('C00006','Kiran Rao','Flat
6','Indiranagar','Bangalore',560001,'Karnataka',6000),
('C00007','Neha Jain','Flat 7','MG Road','Indore',452001,'MP',1800),
('C00008','Suresh Iyer','Flat 8','T Nagar','Chennai',600001,'TN',2200),
('C00009','Ankit Verma','Flat 9','Sector 18','Noida',201301,'UP',3000),
('C00010','Pooja Nair','Flat 10','Marine
Drive','Kochi',682001,'Kerala',4200);

```

### **Product\_Master:**

```

CREATE TABLE Product_Master (
    ProductNo  VARCHAR(6) PRIMARY KEY CHECK (ProductNo LIKE
'P%'),
    Description VARCHAR(15) NOT NULL,
    ProfitPerc  DECIMAL(4,2) NOT NULL,
    UnitMeasure VARCHAR(10) NOT NULL,
    QtyOnHand   INT NOT NULL,
    ReorderLvl  INT NOT NULL,
    SellPrice   DECIMAL(8,2) NOT NULL CHECK (SellPrice <> 0),

```

```
CostPrice DECIMAL(8,2) NOT NULL CHECK (CostPrice <> 0)
);
```

```
INSERT INTO Product_Master VALUES
('P00001','Trousers',8,'Piece',100,20,1600,1200),
('P00002','Pull Overs',10,'Piece',200,30,1800,1400),
('P00003','Shirts',6,'Piece',0,20,900,700),
('P00004','Jeans',12,'Piece',50,10,2000,1600),
('P00005','Jackets',15,'Piece',0,10,3500,3000),
('P00006','Caps',5,'Piece',300,50,300,200),
('P00007','Shoes',10,'Pair',40,10,2500,2000),
('P00008','Belts',4,'Piece',150,30,600,400),
('P00009','Sweaters',9,'Piece',60,15,1700,1300),
('P00010','Shorts',6,'Piece',80,20,800,600);
```

### **Salesman\_Master:**

```
CREATE TABLE Salesman_Master (
    SalesmanNo VARCHAR(6) PRIMARY KEY CHECK (SalesmanNo LIKE 'S%'),
    SalesmanName VARCHAR(20) NOT NULL,
    Address1 VARCHAR(30) NOT NULL,
    Address2 VARCHAR(30),
    City VARCHAR(20),
```

```
Pincode    BIGINT,  
State      VARCHAR(20),  
SalAmt     DECIMAL(8,2) NOT NULL CHECK (SalAmt <> 0),  
TgtToGet   DECIMAL(6,2) NOT NULL,  
YtdSales   DECIMAL(6,2) NOT NULL,  
Remarks   VARCHAR(60)  
);
```

```
INSERT INTO Salesman_Master VALUES
```

```
('S00001','Aman','Addr1','Addr2','Mumbai',400001,'MH',3000,100,50  
, 'Good'),  
('S00002','Rohit','Addr1','Addr2','Pune',411001,'MH',2800,90,45,'Avg'  
),  
('S00003','Sunil','Addr1','Addr2','Delhi',110001,'DL',3200,120,70,'Goo  
d'),  
('S00004','Kiran','Addr1','Addr2','Bangalore',560001,'KA',3500,130,80  
, 'Excellent'),  
('S00005','Vikas','Addr1','Addr2','Indore',452001,'MP',2600,85,40,'Av  
g'),  
('S00006','Ramesh','Addr1','Addr2','Chennai',600001,'TN',4000,150,9  
0, 'Excellent'),  
('S00007','Deepak','Addr1','Addr2','Noida',201301,'UP',3700,140,85,'  
Good'),  
('S00008','Arjun','Addr1','Addr2','Surat',395001,'GJ',2900,95,55,'Goo  
d'),
```

```
('S00009','Sandeep','Addr1','Addr2','Nagpur',440001,'MH',2700,88,4
4,'Avg'),
('S00010','Mahesh','Addr1','Addr2','Kochi',682001,'KL',3100,105,60,'
Good');
```

### **SALES\_ORDER:**

```
CREATE TABLE Sales_Order (
    OrderNo    VARCHAR(6) PRIMARY KEY CHECK (OrderNo LIKE 'O%'),
    ClientNo   VARCHAR(6) FOREIGN KEY REFERENCES
Client_Master(ClientNo),
    OrderDate  DATE,
    DelyAddr   VARCHAR(25),
    SalesmanNo VARCHAR(6) FOREIGN KEY REFERENCES
Salesman_Master(SalesmanNo),
    DelyType   CHAR(1) CHECK (DelyType IN ('P','F')),
    BilledYn   CHAR(1) CHECK (BilledYn IN ('Y','N')),
    DelyDate   DATE,
    OrderStatus VARCHAR(20) CHECK (OrderStatus IN
('In Process','Fulfilled','Backorder','Cancelled'))
);

INSERT INTO Sales_Order VALUES
('O19001','C00001','2002-04-10','Mumbai','S00001','F','Y','2002-04-
20','Fulfilled'),
```

('O19002','C00002','2002-05-05','Mumbai','S00001','P','N','2002-05-25','In Process'),  
('O19003','C00003','2002-06-15','Mumbai','S00002','F','Y','2026-01-15','Fulfilled'),  
('O19004','C00004','2002-03-18','Pune','S00003','P','N','2002-03-30','Cancelled'),  
('O19005','C00005','2002-02-12','Nagpur','S00004','F','Y','2002-02-28','Fulfilled'),  
('O19006','C00001','2002-01-20','Mumbai','S00001','P','Y','2002-01-30','Fulfilled'),  
('O19007','C00002','2002-06-10','Mumbai','S00002','F','N','2026-01-20','In Process'),  
('O19008','C00003','2002-07-01','Mumbai','S00003','P','Y','2002-07-10','Fulfilled'),  
('O19009','C00004','2002-06-05','Pune','S00004','F','Y','2002-06-20','Fulfilled'),  
('O19010','C00005','2002-04-01','Nagpur','S00005','P','N','2002-04-15','Backorder');

#### **SALES\_ORDER\_DETAILS:**

CREATE TABLE Sales\_Order\_Details (

OrderNo VARCHAR(6),

ProductNo VARCHAR(6),

QtyOrdered INT,

QtyDisp INT,

ProductRate DECIMAL(10,2),

```
PRIMARY KEY (OrderNo, ProductNo),  
FOREIGN KEY (OrderNo) REFERENCES Sales_Order(OrderNo),  
FOREIGN KEY (ProductNo) REFERENCES  
Product_Master(ProductNo)  
);
```

```
INSERT INTO Sales_Order_Details VALUES  
( 'O19001', 'P00001', 3, 3, 1600), -- Ivan → Trousers  
( 'O19001', 'P00002', 2, 2, 1800), -- Pull Overs (<5)  
( 'O19002', 'P00003', 5, 5, 900),  
( 'O19003', 'P00004', 1, 1, 2000),  
( 'O19003', 'P00005', 1, 1, 3500),  
( 'O19004', 'P00006', 10, 10, 300),  
( 'O19005', 'P00007', 2, 2, 2500),  
( 'O19006', 'P00008', 4, 4, 600),  
( 'O19007', 'P00009', 3, 3, 1700),  
( 'O19008', 'P00002', 4, 4, 1800);
```

**Answer following queries with help of above schema:**

**1.Display the names of all client:**

```
select name from Client_Master;
```

	name
1	Ivan Bayross
2	Aman Gupta
3	Riya Sharma
4	Rahul Mehta
5	Sneha Patil
6	Kiran Rao
7	Neha Jain
8	Suresh Iyer
9	Ankit Verma
10	Pooja Nair

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

select \* from Client\_Master where City='Mumbai';

	ClientNo	Name	Address1	Address2	City	Pincode	State	BalDue
1	C00001	Ivan Bayross	Flat 1	Colaba	Mumbai	400001	Maharashtra	3500.00
2	C00002	Aman Gupta	Flat 2	Andheri	Mumbai	400002	Maharashtra	4500.00
3	C00003	Riya Sharma	Flat 3	Bandra	Mumbai	400003	Maharashtra	2500.00

## 3.Display all the Products whose selling price is >2000 and <5000:

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

	ProductNo	Description	ProfitPerc	UnitMeasure	QtyOnHand	ReorderLvl	SellPrice	CostPrice
1	P00005	Jackets	15.00	Piece	0	10	3500.00	3000.00
2	P00007	Shoes	10.00	Pair	40	10	2500.00	2000.00

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



Select Name,City,State from Client\_Master where state<>'Maharashtra';

	Name	City	State
1	Kiran Rao	Bangalore	Karnataka
2	Neha Jain	Indore	MP
3	Suresh Iyer	Chennai	TN
4	Ankit Verma	Noida	UP
5	Pooja Nair	Kochi	Kerala

**5. Display all the information of client\_no C0001 and C0002:**

SELECT \* FROM Client\_Master

WHERE ClientNo IN ('C00001','C00002');

	ClientNo	Name	Address1	Address2	City	Pincode	State	BalDue
1	C00001	Ivan Bayross	Flat 1	Colaba	Mumbai	400001	Maharashtra	3500.00
2	C00002	Aman Gupta	Flat 2	Andheri	Mumbai	400002	Maharashtra	4500.00

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

UPDATE Product\_Master

SET SellPrice = 1150.50

WHERE Description = '1.44 drive';

**7. Delete the record of client\_no C0005:**

DELETE FROM Client\_Master WHERE ClientNo = 'C00005';

Msg 547, Level 16, State 0, Line 1

The DELETE statement conflicted with the REFERENCE constraint "FK\_Sales\_Ord\_Clien\_440B1D61". The conflict occurred in database "sales", table "dbo.Sales\_Order", column 'ClientNo'.

The statement has been terminated.

Completion time: 2026-01-02T15:36:14.0238523+05:30

**Modified Query:**

Using On Delete Cascade

First need to alter the foreign key constraint in child table and if any child table contains child table then that also should be altered and so on..

```
ALTER TABLE Sales_Order
```

```
DROP CONSTRAINT FK__Sales_Ord__Clien__440B1D61;
```

```
ALTER TABLE Sales_Order
```

```
ADD CONSTRAINT FK_SalesOrder_Client
```

```
FOREIGN KEY (ClientNo)
```

```
REFERENCES Client_Master(ClientNo)
```

```
ON DELETE CASCADE;
```

```
ALTER TABLE Sales_Order_Details
```

```
DROP CONSTRAINT FK__Sales_Ord__Order__4AB81AF0;
```

```
ALTER TABLE Sales_Order_Details
```

```
ADD CONSTRAINT FK_SalesOrderDetails_SalesOrder
```

```
FOREIGN KEY (OrderNo)
```

```
REFERENCES Sales_Order(OrderNo)
```

```
ON DELETE CASCADE;
```

Then:

```
DELETE FROM Client_Master WHERE ClientNo = 'C00005';
```

```
{1 row affected}
```

```
{1 row affected}
```

```
Completion time: 2026-01-02T17:11:08.5337325+05:30
```

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

```
SELECT * FROM Client_Master
```

```
WHERE City LIKE '_a%';
```

	ClientNo	Name	Address1	Address2	City	Pincode	State	BalDue
1	C00006	Kiran Rao	Flat 6	Indiranagar	Bangalore	560001	Karnataka	6000.00

### 9. Count the number of products having price $\geq 1500$

```
SELECT COUNT(*) AS Product_Count
```

```
FROM Product_Master
```

```
WHERE SellPrice >= 1500;
```

	Product_Count
1	6

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

```
SELECT QtyOrdered, QtyDisp,
```

```
(QtyOrdered - QtyDisp) AS BalancedQty
```

FROM Sales\_Order\_Details;

	QtyOrdered	QtyDisp	BalancedQty
1	3	3	0
2	2	2	0
3	5	5	0
4	1	1	0
5	1	1	0
6	10	10	0
7	4	4	0
8	3	3	0
9	4	4	0

**Write commands to do following:**

**1. Make Client\_no as primary key:**

ALTER TABLE Client\_Master

ADD CONSTRAINT PK\_Client PRIMARY KEY (ClientNo);

Since it is already a primary key:

```
Msg 1779, Level 16, State 0, Line 27
Table 'Client_Master' already has a primary key defined on it.
Msg 1750, Level 16, State 0, Line 27
Could not create constraint or index. See previous errors.
```

```
Completion time: 2026-01-02T17:23:30.2717291+05:30
```

**2. Add a new column phone\_no:**

ALTER TABLE Client\_Master

ADD Phone\_No VARCHAR(15);

```
Commands completed successfully.
```

```
Completion time: 2026-01-02T17:22:34.7203354+05:30
```

### **3. Add NOT NULL constraint to product\_master:**

```
ALTER TABLE Product_Master
```

```
ALTER COLUMN Description VARCHAR(15) NOT NULL;
```

```
ALTER TABLE Product_Master
```

```
ALTER COLUMN ProfitPerc DECIMAL(4,2) NOT NULL;
```

```
ALTER TABLE Product_Master
```

```
ALTER COLUMN SellPrice DECIMAL(8,2) NOT NULL;
```

```
ALTER TABLE Product_Master
```

```
ALTER COLUMN CostPrice DECIMAL(8,2) NOT NULL;
```

---

```
Commands completed successfully.
```

```
Completion time: 2026-01-02T17:25:03.8462714+05:30
```

### **4. Change size of name column to 60:**

```
ALTER TABLE Client_Master
```

```
ALTER COLUMN Name VARCHAR(60);
```

### **5. Remove pincode column:**

```
ALTER TABLE Client_Master
```

```
DROP COLUMN Pincode;
```

**Define in 1–2 lines with example:**

**1. Recursive Relationship:**

A relationship where a table relates to itself.

Employee(EmpID, ManagerID)

**2. Composite Key:**

Primary key made of more than one column.

PRIMARY KEY (OrderNo, ProductNo)

**3. LIKE operator with pattern matching:**

Used to search values using wildcards.

City LIKE '\_a%'

**4. DROP TABLE command:**

Deletes table structure and data permanently.

DROP TABLE Client\_Master;

**5. Full Outer Join:**

returns matching + non-matching rows from both tables.

SELECT \* FROM A FULL OUTER JOIN B ON A.id = B.id;

**Write queries (JOINS):**

**1. Products sold to 'Ivan Bayross'**

SELECT DISTINCT p.Description

FROM Client\_Master c

JOIN Sales\_Order o ON c.ClientNo = o.ClientNo

JOIN Sales\_Order\_Details d ON o.OrderNo = d.OrderNo

JOIN Product\_Master p ON d.ProductNo = p.ProductNo

WHERE c.Name = 'Ivan Bayross';

**2. Products and quantities to be delivered in current month:**

```
SELECT p.Description, d.QtyOrdered
FROM Sales_Order o
JOIN Sales_Order_Details d ON o.OrderNo = d.OrderNo
JOIN Product_Master p ON d.ProductNo = p.ProductNo
WHERE MONTH(o.DelyDate) = MONTH(GETDATE())
AND YEAR(o.DelyDate) = YEAR(GETDATE());
```

**3. Constantly sold (rapid moving) products:**

```
SELECT p.ProductNo, p.Description
FROM Product_Master p
JOIN Sales_Order_Details d ON p.ProductNo = d.ProductNo
GROUP BY p.ProductNo, p.Description
HAVING COUNT(*) > 1;
```

**4. Clients who purchased 'Trousers':**

```
SELECT DISTINCT c.Name
FROM Client_Master c
JOIN Sales_Order o ON c.ClientNo = o.ClientNo
JOIN Sales_Order_Details d ON o.OrderNo = d.OrderNo
JOIN Product_Master p ON d.ProductNo = p.ProductNo
WHERE p.Description = 'Trousers';
```

**5. Products & orders where Pull Overs < 5 units:**

```
SELECT o.OrderNo, p.Description
FROM Sales_Order o
JOIN Sales_Order_Details d ON o.OrderNo = d.OrderNo
JOIN Product_Master p ON d.ProductNo = p.ProductNo
WHERE p.Description = 'Pull Overs'
AND d.QtyOrdered < 5;
```

**Write queries (SUBQUERIES):**

**1. Non-moving products:**

```
SELECT * FROM Product_Master
WHERE ProductNo NOT IN (
    SELECT DISTINCT ProductNo FROM Sales_Order_Details
);
```

**2. Name and complete address for Order 'O19001':**

```
SELECT Name, Address1, Address2, City, State
FROM Client_Master
WHERE ClientNo = (
    SELECT ClientNo FROM Sales_Order WHERE OrderNo =
    'O19001'
);
```

**3. Clients who placed orders before May 2002:**

```
SELECT DISTINCT Name
FROM Client_Master
WHERE ClientNo IN (
    SELECT ClientNo FROM Sales_Order
    WHERE OrderDate < '2002-05-01'
);
```

**Write commands:**

**Display system date as Saturday, February 11, 2012:**

```
SELECT FORMAT(CAST('2012-02-11' AS DATE),
    'dddd, MMMM dd, yyyy');
```

**Display Balance Due as \$99,999.99:**



```
SELECT FORMAT(BalDue, '$99,999.99')  
FROM Client_Master;
```

**Display message for salesman Aman:**

```
SELECT 'Salesman Aman sold goods of 50 while given target was  
100' AS Message;
```

**Display your Age in Years:**

```
SELECT DATEDIFF(YEAR, '2002-01-01', GETDATE()) AS  
Age_In_Years;
```

