

# 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
				TGTTGET	n(6,2) NOT NUL
				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,'Goo
d'),
('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;
```

