

WEEKLY ASSIGNMENT -1
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--1 CREATING SALES DB

```
create database sales_db;
use sales_db;
```

--2 CREATING TABLES

```
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 CHAR(8),
    STATE VARCHAR(15),
    BALDUE DECIMAL(10,2)
);

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)
);
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 CHAR(8),
    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)
);
CREATE TABLE SALES_ORDER (
    ORDERNO VARCHAR(6) PRIMARY KEY
        CHECK (ORDERNO LIKE 'O%'),
    CLIENTNO VARCHAR(6) NOT NULL,
    ORDERDATE DATE,
    DELYADDR VARCHAR(25),
    SALESMANNO VARCHAR(6) NOT NULL,
    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')),

CONSTRAINT FK_SO_CLIENT
FOREIGN KEY (CLIENTNO)
REFERENCES CLIENT_MASTER(CLIENTNO),

CONSTRAINT FK_SO_SALESMAN
FOREIGN KEY (SALESMANNO)
REFERENCES SALESMAN_MASTER(SALESMANNO)
);

CREATE TABLE SALES_ORDER_DETAILS (
ORDERNO VARCHAR(6),
PRODUCTNO VARCHAR(6),
QTYORDERED INT,
QTYDISP INT,
PRODUCTRATE DECIMAL(10,2),

CONSTRAINT PK_SALES_ORDER_DETAILS
PRIMARY KEY (ORDERNO, PRODUCTNO),

CONSTRAINT FK_SOD_ORDER
FOREIGN KEY (ORDERNO)
REFERENCES SALES_ORDER(ORDERNO),

CONSTRAINT FK_SOD_PRODUCT
FOREIGN KEY (PRODUCTNO)
REFERENCES PRODUCT_MASTER(PRODUCTNO)
);

-- inserting into tables
INSERT INTO CLIENT_MASTER
(CLIENTNO, NAME, CITY, PINCODE, STATE, BALDUE)
VALUES
('C0001', 'Ivan Bayross', 'Mumbai', '400054', 'Maharashtra', 15000),
('C0002', 'Vandana Mishra', 'Chennai', '600001', 'Tamil Nadu', 8000),
('C0003', 'Ravi Kumar', 'Mumbai', '400001', 'Maharashtra', 3000),
('C0004', 'Neha Sharma', 'Delhi', '110001', 'Delhi', 12000),
('C0005', 'Amit Patel', 'Ahmedabad', '380001', 'Gujarat', 5000);
INSERT INTO PRODUCT_MASTER
(PRODUCTNO, DESCRIPTION, PROFITPERC, UNITMEASURE, QTYONHAND, REORDERLVL,
SELLPRICE, COSTPRICE)
VALUES
('P0001', 'Trousers', 20.00, 'Piece', 100, 20, 2500, 2000),
('P0002', 'Shirts', 25.00, 'Piece', 150, 30, 1800, 1400),
('P0003', 'Pull Overs', 30.00, 'Piece', 80, 15, 3000, 2200),
('P0004', 'Jeans', 22.00, 'Piece', 120, 25, 2800, 2300),
('P0005', 'Jackets', 35.00, 'Piece', 60, 10, 4500, 3800);
INSERT INTO SALESMAN_MASTER
(SALESMANNO, SALESMANNAME, ADDRESS1, CITY, PINCODE, STATE, SALAMT,
TGTTTOGET, YTDSALES, REMARKS)
VALUES
('S0001', 'Aman', 'Ameerpet', 'Hyderabad', '500016', 'Telangana', 3000,
100, 50, 'Good'),
('S0002', 'Rahul', 'Andheri', 'Mumbai', '400058', 'Maharashtra', 4000,
120, 90, 'Very Good'),

```

```

('S0003', 'Sneha', 'MG Road', 'Bangalore', '560001', 'Karnataka', 3500,
110, 70, 'Average'),
('S0004', 'Kiran', 'Banjara Hills', 'Hyderabad', '500034', 'Telangana',
5000, 150, 130, 'Excellent');
INSERT INTO SALES_ORDER
(ORDERNO, CLIENTNO, ORDERDATE, DELYADDR, SALESMANNO, DELYTYPE, BILLEDYN,
DELYDATE, ORDERSTATUS)
VALUES
('O19001', 'C0001', '2012-02-12', 'Mumbai', 'S0001', 'F', 'N', '2012-07-
20', 'In Process'),
('O19002', 'C0002', '2012-03-10', 'Chennai', 'S0002', 'P', 'Y', '2012-03-
20', 'Fulfilled'),
('O19003', 'C0003', '2012-05-05', 'Mumbai', 'S0001', 'F', 'Y', '2012-05-
15', 'Fulfilled'),
('O19004', 'C0004', '2012-06-18', 'Delhi', 'S0003', 'P', 'N', '2012-06-
30', 'Backorder'),
('O19005', 'C0001', '2012-07-01', 'Mumbai', 'S0004', 'F', 'N', '2012-07-
10', 'In Process');
INSERT INTO SALES_ORDER_DETAILS
(ORDERNO, PRODUCTNO, QTYORDERED, QTYDISP, PRODUCTRATE)
VALUES
('O19001', 'P0001', 4, 4, 2500),
('O19001', 'P0003', 2, 2, 3000),
('O19002', 'P0002', 5, 5, 1800),
('O19003', 'P0001', 3, 3, 2500),
('O19003', 'P0004', 6, 6, 2800),
('O19004', 'P0005', 1, 0, 4500),
('O19005', 'P0003', 2, 1, 3000);

```

--A

--1. Display the names of all the clients
SELECT NAME FROM CLIENT_MASTER;

	NAME
1	Ivan Bayross
2	Vandana Mishra
3	Ravi Kumar
4	Neha Sharma
5	Amit Patel

--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	C0001	Ivan Bayross	NULL	NULL	Mumbai	400054	Maharashtra	15000.00
2	C0003	Ravi Kumar	NULL	NULL	Mumbai	400001	Maharashtra	3000.00

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

SELECT * FROM PRODUCT_MASTER
WHERE SELLPRICE BETWEEN 2001 AND 4999;

	PRODUCTNO	DESCRIPTION	PROFITPERC	UNITMEASURE	QTYONHAND	REORDERLVL	SELLPRICE	COSTPRICE
1	P0001	Trousers	20.00	Piece	100	20	2500.00	2000.00
2	P0003	Pull Overs	30.00	Piece	80	15	3000.00	2200.00
3	P0004	Jeans	22.00	Piece	120	25	2800.00	2300.00
4	P0005	Jackets	35.00	Piece	60	10	4500.00	3800.00

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

```
SELECT NAME, CITY, STATE
```

```
FROM CLIENT_MASTER
```

```
WHERE STATE <> 'Maharashtra';
```

	NAME	CITY	STATE
1	Vandana Mishra	Chennai	Tamil Nadu
2	Neha Sharma	Delhi	Delhi
3	Amit Patel	Ahmedabad	Gujarat

--5. Display all information of client_no C0001 and C0002

```
SELECT *
```

```
FROM CLIENT_MASTER
```

```
WHERE CLIENTNO IN ('C0001', 'C0002');
```

	CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	BALDUE
1	C0001	Ivan Bayross	NULL	NULL	Mumbai	400054	Maharashtra	150000.00
2	C0002	Vandana Mishra	NULL	NULL	Chennai	600001	Tamil Nadu	8000.00

--6. Change the selling price of '144 drive' to Rs. 1150

```
UPDATE PRODUCT_MASTER
```

```
SET SELLPRICE = 1150
```

```
WHERE DESCRIPTION = 'Shirts';
```

```
(1 row affected)
```

```
Completion time: 2026-01-04T16:28:30.8293624+05:30
```

--7. Delete the record of client_no C0005

```
DELETE FROM CLIENT_MASTER
```

```
WHERE CLIENTNO = 'C0005';
```

```
(1 row affected)
```

```
Completion time: 2026-01-04T16:28:30.8293624+05:30
```

--8. Display clients whose city second letter is 'a'

```
SELECT *
```

```
FROM CLIENT_MASTER
```

```
WHERE CITY LIKE '_a%';
```

CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	BALDUE	PHONE_NO

--9. Count number of products having price ≥ 1500

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

```
FROM PRODUCT_MASTER
```

```
WHERE SELLPRICE >= 1500;
```

	Product_Count
1	4

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

```

SELECT ORDERNO,
       QTYDISP,
       (QTYORDERED - QTYDISP) AS BALANCEQTY
  FROM SALES_ORDER_DETAILS;

```

	ORDERNO	QTYDISP	BALANCEQTY
1	O19001	4	0
2	O19001	2	0
3	O19002	5	0
4	O19003	3	0
5	O19003	6	0
6	O19004	0	1
7	O19005	1	1

--B

```

--1. Make CLIENT_NO as primary key in client_master
ALTER TABLE CLIENT_MASTER
ADD CONSTRAINT PK_CLIENT PRIMARY KEY (CLIENTNO);
      Mag 1778, Level 16, State 0, Line 177
      Table 'CLIENT_MASTER' already has a primary key defined on it.
      Mag 1750, Level 16, State 0, Line 177
      Could not create constraint or index. See previous errors.

Completion time: 2026-01-04T16:37:37.8073951+05:30

```

```

--2. Add phone_no column in client_master
ALTER TABLE CLIENT_MASTER
ADD PHONE_NO VARCHAR(15);

```

```

--3. Add NOT NULL constraint in 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: 2026-01-04T16:38:38.8816430+05:30

```

```

--4 Change size of name column to 60
ALTER TABLE CLIENT_MASTER
ALTER COLUMN NAME VARCHAR(60);
      Commands completed successfully.

Completion time: 2026-01-04T16:38:38.8816430+05:30

```

```
--5. Remove pincode column
ALTER TABLE CLIENT_MASTER
DROP COLUMN PINCODE;
Commands completed successfully.

Completion time: 2026-01-04T16:38:38.8816430+05:30
```

--C DEFINATIONS

1. Recursive Relationship

A table related to itself through a foreign key.
Example: Employee having ManagerID referencing EmployeeID.
FOREIGN KEY (ManagerID) REFERENCES EMP(EmployeeID)

2. Composite Key

A primary key made of more than one column.

Ex:

PRIMARY KEY (ORDERNO, PRODUCTNO)

3. LIKE operator with pattern matching

Used to search data using wildcards (% , _).

Ex:

```
SELECT * FROM CLIENT_MASTER WHERE CITY LIKE 'M%';
```

4. DROP TABLE command

Used to permanently delete a table.

Ex:

```
DROP TABLE SALES_ORDER_DETAILS;
```

5. Full Outer Join

Returns matched and unmatched records from both tables.

Ex:

```
SELECT *
FROM CLIENT_MASTER C
FULL OUTER JOIN SALES_ORDER S
ON C.CLIENTNO = S.CLIENTNO;
```

--D WRITE QUERIES FOR FOLLOWING DESCRIPTIONS (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';
```

	DESCRIPTION
1	Pull Overs
2	Trousers

--2. Products and quantities delivered in current month

```
SELECT P.DESCRIPTION, D.QTYDISP
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());
```

DESCRIPTION	QTYDISP

--3. Fast moving products

```
SELECT PRODUCTNO, COUNT(*) AS SOLD_COUNT
FROM SALES_ORDER_DETAILS
GROUP BY PRODUCTNO
HAVING COUNT(*) > 1;
```

	PRODUCTNO	SOLD_COUNT
1	P0001	2
2	P0003	2

Click

--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';
```

	NAME
1	Ivan Bayross
2	Ravi Kumar

--5. Orders with less than 5 units of 'Pull Overs'

```
SELECT O.ORDERNO
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;
```

	ORDERNO
1	O19001
2	O19005

--E WRITE QUERIES FOR FOLLOWING DESCRIPTIONS (SUBQUERIES)

--1. Non-moving products

```
SELECT * FROM PRODUCT_MASTER
WHERE PRODUCTNO NOT IN (
    SELECT DISTINCT PRODUCTNO FROM SALES_ORDER_DETAILS
);
```

PRODUCTNO	DESCRIPTION	PROFITPERC	UNITMEASURE	QTYONHAND	REORDERLVL	SELLPRICE	COSTPRICE

--2. Customer name & address for order O19001

```
SELECT NAME, ADDRESS1, ADDRESS2, CITY
FROM CLIENT_MASTER
WHERE CLIENTNO = (
    SELECT CLIENTNO FROM SALES_ORDER WHERE ORDERNO = 'O19001'
);
```

	NAME	ADDRESS1	ADDRESS2	CITY
1	Ivan Bayross	NULL	NULL	Mumbai

--3. Clients who placed orders before May 2002

```

SELECT * FROM CLIENT_MASTER
WHERE CLIENTNO IN (
    SELECT CLIENTNO FROM SALES_ORDER
    WHERE ORDERDATE < '2002-05-01'
);

```

CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	BALDUE	PHONE_NO
1	Aman	123 Main Street	Apartment 456	New York	10001	NY	50	9876543210

--F WRITE COMMANDS

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

```

SELECT
    DATENAME(WEEKDAY, '2012-02-11') + ', ' +
    DATENAME(MONTH, '2012-02-11') + ' ' +
    CAST(DAY('2012-02-11') AS VARCHAR) + ', ' +
    CAST(YEAR('2012-02-11') AS VARCHAR) AS [Current_date];

```

Current_date
Saturday, February 11, 2012

--2. Display balance due as ₹99,999.99

```
SELECT FORMAT(99999.99, 'C', 'en-IN') AS BalanceDue;
```

BalanceDue
₹ 99,999.99

--3. Display message for salesman Aman

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

MESSAGE
Salesman Aman sold goods of 50 while given targ...

--4. Display your age in years

```
SELECT DATEDIFF(YEAR, '2005-10-19', GETDATE()) AS AGE;
```

AGE
21