

Weekly Assignment

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DataBase Creation

```
CREATE DATABASE SALES_DB;  
USE SALES_DB
```

Tables Creation

```
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 NUMERIC(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 NUMERIC(8) NOT NULL,  
    RECORDLEVEL NUMERIC(8) 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 NUMERIC(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),  
    DELYTYPE CHAR(1)  
        CHECK (DELYTYPE IN ('P','F')),  
    BILLEDYN CHAR(1)  
        CHECK (BILLEDYN IN ('Y','N')),  
    DELYDATE DATE,  
    ORDERSTATUS VARCHAR(10)  
        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 NUMERIC(8),  
    QTYDISP NUMERIC(8),  
    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)
```

);

Data Insertion

INSERT INTO CLIENT_MASTER VALUES

```
('C0001','Ivan Bayross','Mumbai','Andheri','Mumbai',400001,'Maharashtra',5000),
('C0002','Rahul Mehta','Delhi','Karol Bagh','Delhi',110001,'Delhi',3000),
('C0003','Anita Sharma','Pune','Baner','Pune',411045,'Maharashtra',7000),
('C0004','Suresh Kumar','Chennai','T Nagar','Chennai',600017,'Tamil Nadu',2000),
('C0005','Aakash Verma','Jaipur','Malviya Nagar','Jaipur',302017,'Rajasthan',1000);
```

INSERT INTO PRODUCT_MASTER VALUES

```
('P0001','Trousers',20.00,'PCS',100,10,2500,2000),
('P0002','Pull Overs',15.00,'PCS',200,20,1200,900),
('P0003','Shirts',18.00,'PCS',150,15,1800,1400),
('P0004','1.44 drive',10.00,'PCS',50,5,1400,1000),
('P0005','Jackets',25.00,'PCS',80,8,3000,2500);
```

INSERT INTO SALESMAN_MASTER VALUES

```
('S0001','Aman','Mumbai','Dadar','Mumbai',400028,'Maharashtra',15000,100,50,'Good'),
('S0002','Ravi','Delhi','Dwarka','Delhi',110075,'Delhi',12000,120,80,'Excellent'),
('S0003','Kiran','Pune','Aundh','Pune',411007,'Maharashtra',10000,90,60,'Average');
```

INSERT INTO SALES_ORDER VALUES

```
('O19001','C0001','2002-04-15','Mumbai','S0001','P','Y','2002-04-20','Fulfilled'),
('O19002','C0002','2002-05-10','Delhi','S0002','F','N','2002-05-18','In Process'),
('O19003','C0003','2002-03-12','Pune','S0003','P','Y','2002-03-20','Fulfilled'),
('O19004','C0004','2002-06-01','Chennai','S0001','F','N','2002-06-10','Backorder');
```

INSERT INTO SALES_ORDER_DETAILS VALUES

```
('O19001','P0001',10,10,2500),
('O19001','P0002',4,4,1200),
('O19002','P0003',8,5,1800),
('O19003','P0001',15,15,2500),
('O19003','P0002',3,3,1200),
('O19004','P0005',6,0,3000);
```

Queries

--1

```
SELECT NAME FROM CLIENT_MASTER
```

	NAME
1	Ivan Bayross
2	Rahul Mehta
3	Anita Sharma
4	Suresh Kumar

--2

```
SELECT * FROM CLIENT_MASTER  
WHERE CITY='Mumbai'
```

	CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	STATE	BALDUE	PHONENO
1	C0001	Ivan Bayross	Mumbai	Andheri	Mumbai	Maharashtra	5000.00	NULL

--3

```
SELECT * FROM PRODUCT_MASTER  
WHERE SELLPRICE>2000 AND SELLPRICE<5000
```

	PRODUCTNO	DESCRIPTION	PROFITPERC	UNITMEASURE	QTYONHAND	RECORDLEVEL	SELLPRICE	COSTPRICE
1	P0001	Trousers	20.00	PCS	100	10	2500.00	2000.00
2	P0005	Jackets	25.00	PCS	80	8	3000.00	2500.00

--4

```
SELECT NAME,CITY,STATE FROM CLIENT_MASTER  
WHERE STATE!= 'Maharashtra'
```

	NAME	CITY	STATE
1	Rahul Mehta	Delhi	Delhi
2	Suresh Kumar	Chennai	Tamil Nadu

--5

```
SELECT * FROM CLIENT_MASTER
WHERE CLIENTNO IN ('C0001','C0002');
```

	CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	STATE	BALDUE	PHONENO
1	C0001	Ivan Bayross	Mumbai	Andheri	Mumbai	Maharashtra	5000.00	NULL
2	C0002	Rahul Mehta	Delhi	Karol Bagh	Delhi	Delhi	3000.00	NULL

--6

```
UPDATE PRODUCT_MASTER
SET SELLPRICE=1150.50
WHERE DESCRIPTION='1.44 drive'
```

--7

```
DELETE FROM CLIENT_MASTER
WHERE CLIENTNO='C0005'
```

--8

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

	CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	STATE	BALDUE	PHONENO

--9

```
select count(*) AS No_Of_Products
from PRODUCT_MASTER
WHERE COSTPRICE>=1500
```

	No_Of_Products
1	2

--10

```
SELECT QTYORDERED,QTYDISP  
FROM SALES_ORDER_DETAILS
```

	QTYORDERED	QTYDISP
1	10	10
2	4	4
3	8	5
4	15	15
5	3	3
6	6	0

Alter Commands

--1

```
ALTER TABLE CLIENT_MASTER  
ADD CONSTRAINT PK PRIMARY KEY(CLIENTNO)
```

--2

```
ALTER TABLE CLIENT_MASTER  
ADD PHONENO VARCHAR(15)
```

--3

```
ALTER TABLE PRODUCT_MASTER  
ALTER COLUMN DESCRIPTION VARCHAR(15) NOT NULL;
```

```
ALTER TABLE PRODUCT_MASTER  
ALTER COLUMN PROFITPERC VARCHAR(15) NOT NULL;
```

```
ALTER TABLE PRODUCT_MASTER  
ALTER COLUMN SELLPRICE VARCHAR(15) NOT NULL;
```

```
ALTER TABLE PRODUCT_MASTER  
ALTER COLUMN COSTPRICE VARCHAR(15) NOT NULL;
```

--4

```
ALTER TABLE CLIENT_MASTER  
ALTER COLUMN NAME VARCHAR(60)
```

```
--5  
ALTER TABLE CLIENT_MASTER  
DROP COLUMN PINCODE
```

Joins

--JOINS

--1

```
SELECT p.* FROM PRODUCT_MASTER p  
JOIN SALES_ORDER_DETAILS sd on p.PRODUCTNO=sd.PRODUCTNO  
JOIN SALES_ORDER s ON s.ORDERNO=sd.ORDERNO  
JOIN CLIENT_MASTER c on c.CLIENTNO=s.CLIENTNO  
WHERE c.NAME='Ivan Bayross'
```

	PRODUCTNO	DESCRIPTION	PROFITPERC	UNITMEASURE	QTYONHAND	RECORDLEVEL	SELLPRICE	COSTPRICE
1	P0001	Trousers	20.00	PCS	100	10	2500.00	2000.00
2	P0002	Pull Overs	15.00	PCS	200	20	1200.00	900.00

--2

```
SELECT distinct p.*  
FROM PRODUCT_MASTER p  
JOIN SALES_ORDER_DETAILS sd on p.PRODUCTNO=sd.PRODUCTNO  
JOIN SALES_ORDER s on s.ORDERNO=sd.PRODUCTNO  
where MONTH(ORDERDATE)=MONTH(GETDATE()) AND YEAR(s.DELYDATE) = YEAR(GETDATE());
```

	PRODUCTNO	DESCRIPTION	PROFITPERC	UNITMEASURE	QTYONHAND	RECORDLEVEL	SELLPRICE	COSTPRICE

--3

```
SELECT distinct p.PRODUCTNO,p.DESCRIPTION  
FROM PRODUCT_MASTER p  
join SALES_ORDER_DETAILS s on p.PRODUCTNO=s.PRODUCTNO
```

--4

```
SELECT c.NAME FROM PRODUCT_MASTER p
```

```

JOIN SALES_ORDER_DETAILS sd on sd.PRODUCTNO=p.PRODUCTNO
JOIN SALES_ORDER s on s.ORDERNO=sd.ORDERNO
JOIN CLIENT_MASTER c on c.CLIENTNO=s.CLIENTNO
WHERE p.DESCRIPTION='Trousers'

```

	NAME
1	Ivan Bayross
2	Anita Sharma

```

--5
SELECT DISTINCT
    s.ORDERNO,
    p.PRODUCTNO,
    p.DESCRIPTION,
    sd.QTYORDERED
FROM SALES_ORDER s
JOIN SALES_ORDER_DETAILS sd
    ON s.ORDERNO = sd.ORDERNO
JOIN PRODUCT_MASTER p
    ON sd.PRODUCTNO = p.PRODUCTNO
WHERE p.DESCRIPTION = 'Pull Overs'
    AND sd.QTYORDERED < 5;

```

	ORDERNO	PRODUCTNO	DESCRIPTION	QTYORDERED
1	019001	P0002	Pull Overs	4
2	019003	P0002	Pull Overs	3

Subqueries

```

--1
select p.* from PRODUCT_MASTER p
where NOT EXISTS(
    SELECT 1 from SALES_ORDER_DETAILS sd
    where sd.PRODUCTNO=p.PRODUCTNO
)

```

	PRODUCTNO	DESCRIPTION	PROFITPERC	UNITMEASURE	QTYONHAND	RECORDLEVEL	SELLPRICE	COSTPRICE
1	P0004	1.44 drive	10.00	PCS	50	5	1150.50	1000.00

--2

```
select NAME,ADDRESS1,ADDRESS2,CITY,STATE FROM CLIENT_MASTER
where CLIENTNO=
SELECT CLIENTNO FROM SALES_ORDER
WHERE ORDERNO='O19001'
)
```

	NAME	ADDRESS1	ADDRESS2	CITY	STATE
1	Ivan Bayross	Mumbai	Andheri	Mumbai	Maharashtra

--3

```
SELECT NAME FROM CLIENT_MASTER c
WHERE c.CLIENTNO IN (
SELECT s.CLIENTNO FROM SALES_ORDER s WHERE s.ORDERDATE<'2002-05-01')
```

	NAME
1	Ivan Bayross
2	Anita Sharma

--Additional Commands

--1

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

	(No column name)
1	Saturday, February 11, 2012

--2

```
SELECT FORMAT(BALDUE, '$#,##0.00')
FROM CLIENT_MASTER;
```

	(No column name)
1	\$5,000.00
2	\$3,000.00
3	\$7,000.00
4	\$2,000.00

--3

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

	(No column name)
1	Salesman Aman sold goods of 50 while given targ...

--4

```
SELECT DATEDIFF(YEAR, '2004-12-15', GETDATE())
- CASE
    WHEN DATEADD(YEAR, DATEDIFF(YEAR, '2004-12-15', GETDATE()), '2004-12-15') > GETDATE()
        THEN 1 ELSE 0
    END AS AgeInYears;
```

	AgeInYears
1	21

1. Recursive Relationship

A recursive relationship occurs when a table is related to itself, usually through a primary key–foreign key relationship.

Example: Employee(EmpID, ManagerID)

2. Composite Key

A composite key is a primary key made up of **two or more columns** to uniquely identify a record.

Example: PRIMARY KEY (OrderID, ProductID)

3. LIKE Operator with Pattern Matching

The LIKE operator is used to search for a specified pattern in a column.

Example: SELECT * FROM CLIENT_MASTER

WHERE NAME LIKE 'A%';

4. DROP TABLE Command

The DROP TABLE command permanently removes a table and all its data from the database.

Example: DROP TABLE CLIENT_MASTER;

5. FULL OUTER JOIN

A FULL OUTER JOIN returns all records from both tables, matching where possible and showing NULL where there is no match.

Example: SELECT *

```
FROM CLIENT_MASTER c
FULL OUTER JOIN SALES_ORDER s
ON c.CLIENTNO = s.CLIENTNO;
```