WEEK1 SQL COMMANDS

Create database

Create database products;

Use products;

Create tables

CREATE TABLE CLIENT_MASTER (

   CLIENTNO VARCHAR(6)

   CONSTRAINT PK_CLIENT PRIMARY KEY

   CONSTRAINT CK_CLIENTNO CHECK (CLIENTNO LIKE 'C%'),

   NAME VARCHAR(20) NOT NULL,

   ADDRESS1 VARCHAR(30),

   ADDRESS2 VARCHAR(30),

   CITY VARCHAR(15),

   PINCODE int,

   STATE VARCHAR(15),

   BALDUE decimal(10,2)

);

CREATE TABLE PRODUCT_MASTER (

   PRODUCTNO   VARCHAR(6)

   CONSTRAINT PK_PRODUCT PRIMARY KEY

   CONSTRAINT CK_PRODUCTNO CHECK (PRODUCTNO LIKE 'P%'),

   DESCRIPTION VARCHAR(15) NOT NULL,

   PROFITPERC decimal(4,2) NOT NULL,

   UNITMEASURE VARCHAR(10) NOT NULL,

   QTYONHAND   decimal(8) NOT NULL,

   REORDERLVL decimal(8) NOT NULL,

```sql
    SELLPRICE  decimal(8,2) NOT NULL

    CONSTRAINT CK_SELLPRICE CHECK (SELLPRICE <> 0),

    COSTPRICE  decimal(8,2) NOT NULL

    CONSTRAINT CK_COSTPRICE CHECK (COSTPRICE <> 0)

);


CREATE TABLE SALESMAN_MASTER (

    SALESMANNO   VARCHAR(6)

    CONSTRAINT PK_SALESMAN PRIMARY KEY

    CONSTRAINT CK_SALESMANNO CHECK (SALESMANNO LIKE 'S%'),

    SALESMANNAME VARCHAR(20) NOT NULL,

    ADDRESS1 VARCHAR(30) NOT NULL,

    ADDRESS2 VARCHAR(30),

    CITY VARCHAR(20),

    PINCODE     int,

    STATE VARCHAR(20),

    SALAMT decimal(8,2) NOT NULL

    CONSTRAINT CK_SALAMT 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),

    ORDERDATE DATE,
```

```sql
    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')),

    FOREIGN KEY (CLIENTNO) REFERENCES CLIENT_MASTER(CLIENTNO),

    FOREIGN KEY (SALESMANNO) REFERENCES SALESMAN_MASTER(SALESMANNO)

);


CREATE TABLE SALES_ORDER_DETAILS (

    ORDERNO VARCHAR(6),

    PRODUCTNO VARCHAR(6),

    QTYORDERED  INT,

    QTYDISP INT,

    PRODUCTRATE DECIMAL,

    PRIMARY KEY (ORDERNO, PRODUCTNO),

    FOREIGN KEY (ORDERNO) REFERENCES SALES_ORDER(ORDERNO),

    FOREIGN KEY (PRODUCTNO) REFERENCES PRODUCT_MASTER(PRODUCTNO)

);
```

Insert 5 rows in each Table

```sql
INSERT INTO CLIENT_MASTER VALUES ('C0001','Ravi','MG
Road','Andheri','Mumbai',400001,'Maharashtra',1200);
```

```sql
INSERT INTO CLIENT_MASTER VALUES ('C0002','Aman','Park Street','Salt Lake','Kolkata',700091,'West Bengal',500);

INSERT INTO CLIENT_MASTER VALUES ('C0003','Neha','Brigade Road','Indiranagar','Bangalore',560038,'Karnataka',0);

INSERT INTO CLIENT_MASTER VALUES ('C0004','Pooja','Anna Salai','T Nagar','Chennai',600017,'Tamil Nadu',2300);

INSERT INTO CLIENT_MASTER VALUES ('C0005','Rahul','Sector 18','Noida','Noida',201301,'Uttar Pradesh',900);


INSERT INTO PRODUCT_MASTER VALUES ('P0001','Mouse',10,'Nos',150,50,500,450);

INSERT INTO PRODUCT_MASTER VALUES ('P0002','Keyboard',15,'Nos',200,40,800,700);

INSERT INTO PRODUCT_MASTER VALUES ('P0003','Monitor',12,'Nos',80,20,6000,5500);

INSERT INTO PRODUCT_MASTER VALUES ('P0004','Printer',18,'Nos',40,10,9000,8500);

INSERT INTO PRODUCT_MASTER VALUES ('P0005','Scanner',20,'Nos',30,5,7000,6500);


INSERT INTO SALESMAN_MASTER VALUES ('S0001','Amit','Link Road','Borivali','Mumbai',400092,'Maharashtra',3000,100,50,'Good');

INSERT INTO SALESMAN_MASTER VALUES ('S0002','Rohan','Ring Road','Model Town','Delhi',110009,'Delhi',3500,120,70,'Excellent');

INSERT INTO SALESMAN_MASTER VALUES ('S0003','Kiran','FC Road','Shivaji Nagar','Pune',411005,'Maharashtra',2800,90,40,'Average');

INSERT INTO SALESMAN_MASTER VALUES ('S0004','Sneha','MG Road','Whitefield','Bangalore',560066,'Karnataka',4000,150,100,'Very Good');

INSERT INTO SALESMAN_MASTER VALUES ('S0005','Vikas','Station Road','Civil Lines','Jaipur',302006,'Rajasthan',2600,80,30,'Good');


INSERT INTO SALES_ORDER VALUES ('O1001','C0001','2025-01-05','Mumbai','S0001','P','Y','2025-01-10','Fulfilled');

INSERT INTO SALES_ORDER VALUES ('O1002','C0002','2025-01-08','Kolkata','S0002','F','N','2025-01-15','In Process');

INSERT INTO SALES_ORDER VALUES ('O1003','C0003','2025-01-12','Bangalore','S0003','P','Y','2025-01-18','Backorder');
```

INSERT INTO SALES_ORDER VALUES ('O1004','C0004','2025-01-15','Chennai','S0004','F','Y','2025-01-22','Fulfilled');

INSERT INTO SALES_ORDER VALUES ('O1005','C0005','2025-01-20','Noida','S0005','P','N','2025-01-28','Cancelled');

INSERT INTO SALES_ORDER_DETAILS VALUES ('O1001','P0001',10,10,500);

INSERT INTO SALES_ORDER_DETAILS VALUES ('O1002','P0002',15,10,800);

INSERT INTO SALES_ORDER_DETAILS VALUES ('O1003','P0003',5,0,6000);

INSERT INTO SALES_ORDER_DETAILS VALUES ('O1004','P0004',3,3,9000);

INSERT INTO SALES_ORDER_DETAILS VALUES ('O1005','P0005',2,0,7000);

SELECT * FROM CLIENT_MASTER;

	CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	BALDUE
1	C0001	Ravi	MG Road	Andheri	Mumbai	400001	Maharashtra	1200.00
2	C0002	Aman	Park Street	Salt Lake	Kolkata	700091	West Bengal	500.00
3	C0003	Neha	Brigade Road	Indiranagar	Bangalore	560038	Karnataka	0.00
4	C0004	Pooja	Anna Salai	T Nagar	Chennai	600017	Tamil Nadu	2300.00
5	C0005	Rahul	Sector 18	Noida	Noida	201301	Uttar Pradesh	900.00

SELECT * FROM PRODUCT_MASTER;

	PRODUCTNO	DESCRIPTION	PROFITPERC	UNITMEASURE	QTYONHAND	REORDERLVL	SELLPRICE
1	P0001	Mouse	10.00	Nos	150	50	500.00
2	P0002	Keyboard	15.00	Nos	200	40	800.00
3	P0003	Monitor	12.00	Nos	80	20	6000.00
4	P0004	Printer	18.00	Nos	40	10	9000.00
5	P0005	Scanner	20.00	Nos	30	5	7000.00

SELECT * FROM SALESMAN_MASTER;

	SALESMANNO	SALESMANNAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	SALAMT	TGTTOGET	YTDSALES	REMARKS
1	S0001	Amit	Link Road	Borivali	Mumbai	400092	Maharashtra	3000.00	100.00	50.00	Good
2	S0002	Rohan	Ring Road	Model Town	Delhi	110009	Delhi	3500.00	120.00	70.00	Excellent
3	S0003	Kiran	FC Road	Shivaji Nagar	Pune	411005	Maharashtra	2800.00	90.00	40.00	Average
4	S0004	Sneha	MG Road	Whitefield	Bangalore	560066	Karnataka	4000.00	150.00	100.00	Very Good
5	S0005	Vikas	Station Road	Civil Lines	Jaipur	302006	Rajasthan	2600.00	80.00	30.00	Good

SELECT * FROM SALES_ORDER;

	ORDERNO	CLIENTNO	ORDERDATE	DELYADDR	SALESMANNO	DELYTYPE	BILLEDYN	DELYDATE	ORDERSTATUS
1	O1001	C0001	2025-01-05	Mumbai	S0001	P	Y	2025-01-10	Fulfilled
2	O1002	C0002	2025-01-08	Kolkata	S0002	F	N	2025-01-15	In Process
3	O1003	C0003	2025-01-12	Bangalore	S0003	P	Y	2025-01-18	Backorder
4	O1004	C0004	2025-01-15	Chennai	S0004	F	Y	2025-01-22	Fulfilled
5	O1005	C0005	2025-01-20	Noida	S0005	P	N	2025-01-28	Cancelled

SELECT * FROM SALES_ORDER_DETAILS;

	ORDERNO	PRODUCTNO	QTYORDERED	QTYDISP	PRODUCTRATE
1	O1001	P0001	10	10	500
2	O1002	P0002	15	10	800
3	O1003	P0003	5	0	6000
4	O1004	P0004	3	3	9000
5	O1005	P0005	2	0	7000

QUERIES

1.select name from CLIENT_MASTER

	name
1	Ravi
2	Aman
3	Neha
4	Pooja
5	Rahul

2.select name from CLIENT_MASTER where CITY='Mumbai'

	name
1	Ravi

3.select PRODUCTNO from PRODUCT_MASTER where SELLPRICE>2000

and COSTPRICE<5000

⊞ Results ▤ Messages

PRODUCTNO

4.select name,city,state from CLIENT_MASTER

where state != 'Maharashtra';

	name	city	state
1	Aman	Kolkata	West Bengal
2	Neha	Bangalore	Karnataka
3	Pooja	Chennai	Tamil Nadu
4	Rahul	Noida	Uttar Pradesh

5.select * from CLIENT_MASTER where CLIENTNO in ('C0001','C0002')

⊞ Results   📄 Messages

	CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	BALDUE
1	C0001	Ravi	MG Road	Andheri	Mumbai	400001	Maharashtra	1200.00
2	C0002	Aman	Park Street	Salt Lake	Kolkata	700091	West Bengal	500.00

6.update PRODUCT_MASTER set SELLPRICE=1150.50 where DESCRIPTION='1.44 drive'

📄 Messages

```
(0 rows affected)

Completion time: 2026-01-02T12:36:33.9779762+05:30
```

7. delete from CLIENT_MASTER where CLIENTNO='C0005'

📄 Messages

```
(1 row affected)

Completion time: 2026-01-02T12:44:43.3648985+05:30
```

8.select name,city from CLIENT_MASTER where city like '_a%'

	name	city
1	Neha	Bangalore

9.select count(*) from PRODUCT_MASTER where SELLPRICE>=1500

	(No column name)
1	3

10.select QTYORDERED,QTYDISP,QTYORDERED-QTYDISP as balenced from SALES_ORDER_DETAILS

	QTYORDERED	QTYDISP	balenced
1	15	10	5
2	5	0	5
3	3	3	0
4	2	0	2

11. alter table client_master add phno int;

```
Commands completed successfully.

Completion time: 2026-01-02T14:05:05.2944362+05:30
```

12.alter table client_master alter column name varchar(60);

```
Commands completed successfully.

Completion time: 2026-01-02T14:07:30.2830940+05:30
```

13. alter table client_master drop column pincode;

```
Commands completed successfully.

Completion time: 2026-01-02T14:08:50.4252525+05:30
```

14. select p.PRODUCTNO,p.DESCRIPTION from PRODUCT_MASTER p join SALES_ORDER_DETAILS s on p.PRODUCTNO=s.PRODUCTNO join

SALES_ORDER so on s.ORDERNO=so.ORDERNO join CLIENT_MASTER c on c.CLIENTNO=so.CLIENTNO where c.name = 'Aman'

	PRODUCTNO	DESCRIPTION
1	P0002	Keyboard

15.select p.PRODUCTNO,p.QTYONHAND from PRODUCT_MASTER p join SALES_ORDER_DETAILS sod on p.PRODUCTNO=sod.PRODUCTNO

join SALES_ORDER so on so.ORDERNO=sod.ORDERNO

where month(so.ORDERDATE)=month(getdate())

	PRODUCTNO	QTYONHAND
1	P0002	200
2	P0003	80
3	P0004	40
4	P0005	30

16.

select p.PRODUCTNO,p.DESCRIPTION,count(sod.PRODUCTNO) as times_sold from PRODUCT_MASTER p join SALES_ORDER_DETAILS sod

on p.PRODUCTNO = sod.PRODUCTNO

group by p.PRODUCTNO,p.DESCRIPTION

having count(sod.PRODUCTNO) >=1

order by times_sold desc;

	PRODUCTNO	DESCRIPTION	times_sold
1	P0002	Keyboard	1
2	P0003	Monitor	1
3	P0004	Printer	1
4	P0005	Scanner	1

17.

select c.name from PRODUCT_MASTER p join SALES_ORDER_DETAILS s on p.PRODUCTNO=s.PRODUCTNO join

SALES_ORDER so on s.ORDERNO=so.ORDERNO join CLIENT_MASTER c on c.CLIENTNO=so.CLIENTNO where p.DESCRIPTION='Monitor'

	name
1	Neha

18.select p.DESCRIPTION from PRODUCT_MASTER p join SALES_ORDER_DETAILS sod on p.PRODUCTNO=sod.PRODUCTNO where sod.QTYORDERED<5

	DESCRIPTION
1	Printer
2	Scanner

19. select p.PRODUCTNO, p.DESCRIPTION, COUNT(sod.PRODUCTNO) AS times_sold

FROM PRODUCT_MASTER p

LEFT JOIN SALES_ORDER_DETAILS sod

ON p.PRODUCTNO = sod.PRODUCTNO

group by p.PRODUCTNO, p.DESCRIPTION

having COUNT(sod.PRODUCTNO) = 0;

	PRODUCTNO	DESCRIPTION	times_sold
1	P0001	Mouse	0

20.

select c.name,c.ADDRESS1+c.ADDRESS2+c.STATE+C.CITY from SALES_ORDER so join CLIENT_MASTER c on c.CLIENTNO=so.CLIENTNO where so.ORDERNO='O1002'

	name	(No column name)
1	Aman	Park StreetSalt LakeWest BengalKolkata

21.

select c.name from SALES_ORDER so join CLIENT_MASTER c on c.CLIENTNO=so.CLIENTNO

where so.ORDERDATE<='2002-05-01'

name

22. select FORMAT(GETDATE(), 'dddd, MMMM dd, yyyy') AS System_Date;

	System_Date
1	Friday, January 02, 2026

23. SELECT CLIENTNO,FORMAT(BALDUE, '$##,##0.00') AS Balance_Due

FROM CLIENT_MASTER;

	CLIENTNO	Balance_Due
1	C0002	$500.00
2	C0003	$0.00
3	C0004	$2,300.00
4	C0005	$900.00

24. SELECT 'Salesman Aman sold goods of ' + CAST(YTDSALES AS VARCHAR(10))

+ ' while given target was ' + CAST(TGTTOGET AS VARCHAR(10))

+ '.' AS Sales_Message FROM SALESMAN_MASTER

WHERE SALESMANNAME = 'Amit';

	Sales_Message
1	Salesman Aman sold goods of 50.00 while given ta...

25. SELECT DATEDIFF(YEAR, '2004-02-11', GETDATE()) AS Age_In_Years;

	Age_In_Years
1	22

DEFINATIONS

1. A recursive relationship is when a table is related to itself through a foreign key.

   Example: EMP(emp_id, manager_id) Here, manager_id refers to emp_id of the same table.

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

   Example : PRIMARY KEY (ORDERNO, PRODUCTNO)

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

   Example: SELECT * FROM CLIENT_MASTER WHERE NAME LIKE 'A%';

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

   Example: DROP TABLE SALES_ORDER;

5. A full outer join returns all records from both tables, matching rows where possible and NULL where there is no match.

Example: SELECT *FROM CLIENT_MASTER
FULL OUTER JOIN SALES_ORDER ON CLIENT_MASTER.CLIENTNO =
SALES_ORDER.CLIENTNO;