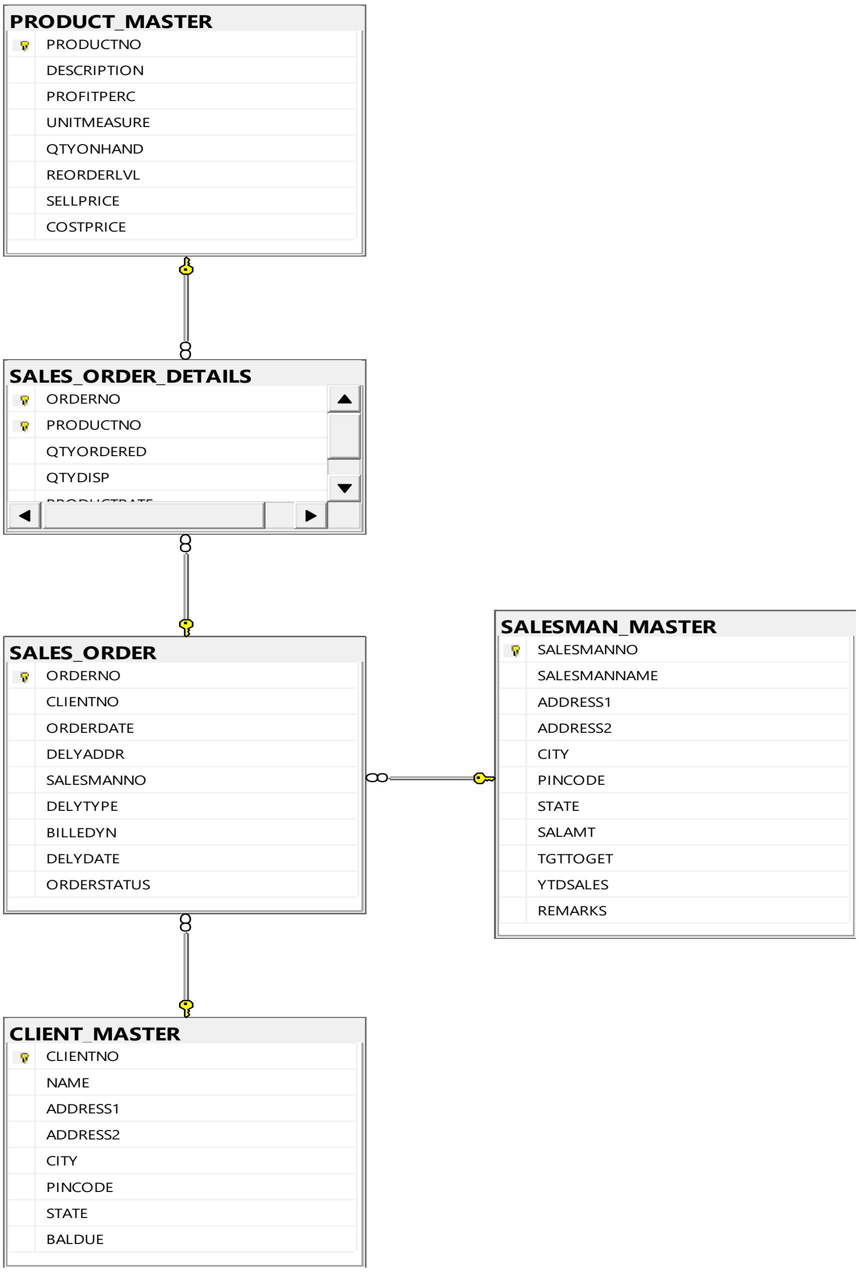
weekly assignment-1

Create Sales Database:

```
create database sales;

use sales;
```

Schema Diagram:



PRODUCT_MASTER
- PRODUCTNO
- DESCRIPTION
- PROFITPERC
- UNITMEASURE
- QTYONHAND
- REORDERLVL
- SELLPRICE
- COSTPRICE

SALES_ORDER_DETAILS
- ORDERNO
- PRODUCTNO
- QTYORDERED
- QTYDISP
- PRODUCTRATE

SALES_ORDER
- ORDERNO
- CLIENTNO
- ORDERDATE
- DELYADDR
- SALESMANNO
- DELYTYPE
- BILLEDYN
- DELYDATE
- ORDERSTATUS

SALESMAN_MASTER
- SALESMANNO
- SALESMANNAME
- ADDRESS1
- ADDRESS2
- CITY
- PINCODE
- STATE
- SALAMT
- TGTTOGET
- YTDSALES
- REMARKS

CLIENT_MASTER
- CLIENTNO
- NAME
- ADDRESS1
- ADDRESS2
- CITY
- PINCODE
- STATE
- BALDUE

Create Table Commands:

CLIENT_MASTER:

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

PRODUCT_MASTER:

```
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 NUMERIC(4,2) NOT NULL,
UNITMEASURE VARCHAR(10) NOT NULL,
QTYONHAND NUMERIC(8) NOT NULL,
REORDERLVL NUMERIC(8) NOT NULL,

SELLPRICE NUMERIC(8,2) NOT NULL
CONSTRAINT CK_SELLPRICE CHECK (SELLPRICE <> 0),

COSTPRICE NUMERIC(8,2) NOT NULL
CONSTRAINT CK_COSTPRICE CHECK (COSTPRICE <> 0)
);
```

SALESMAN_MASTER:

```
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 NUMERIC(8),
STATE VARCHAR(20),
SALAMT NUMERIC(8,2) NOT NULL
CONSTRAINT CK_SALAMT CHECK (SALAMT <> 0),

TGTTOGET NUMERIC(6,2) NOT NULL,
YTDSALES NUMERIC(6,2) NOT NULL,
REMARKS VARCHAR(60));
```

SALES_ORDER:

```
CREATE TABLE SALES_ORDER (
ORDERNO VARCHAR(6)
CONSTRAINT PK_ORDER PRIMARY KEY
CONSTRAINT CK_ORDERNO CHECK (ORDERNO LIKE 'O%'),

CLIENTNO VARCHAR(6)
CONSTRAINT FK_ORDER_CLIENT
FOREIGN KEY REFERENCES CLIENT_MASTER(CLIENTNO),

ORDERDATE DATE,
DELYADDR VARCHAR(25),

SALESMANNO VARCHAR(6)
CONSTRAINT FK_ORDER_SALESMAN
FOREIGN KEY REFERENCES SALESMAN_MASTER(SALESMANNO),

DELYTYPE CHAR(1)
CONSTRAINT CK_DELYTYPE CHECK (DELYTYPE IN ('P','F')),

BILLEDYN CHAR(1)
CONSTRAINT CK_BILLEDYN CHECK (BILLEDYN IN ('Y','N')),

DELYDATE DATE,

ORDERSTATUS VARCHAR(10)
CONSTRAINT CK_ORDERSTATUS CHECK
(ORDERSTATUS IN ('In Process','Fulfilled','Backorder','Cancelled'))
);
```

SALES_ORDER_DETAILS:

```
CREATE TABLE SALES_ORDER_DETAILS (
ORDERNO VARCHAR(6),
PRODUCTNO VARCHAR(6),

QTYORDERED NUMERIC(8),
QTYDISP NUMERIC(8),
PRODUCTRATE NUMERIC(10,2),

CONSTRAINT PK_ORDER_DETAILS
PRIMARY KEY (ORDERNO, PRODUCTNO),
CONSTRAINT FK_DETAILS_ORDER
FOREIGN KEY (ORDERNO) REFERENCES SALES_ORDER(ORDERNO),

CONSTRAINT FK_DETAILS_PRODUCT
FOREIGN KEY (PRODUCTNO) REFERENCES PRODUCT_MASTER(PRODUCTNO)
);
```

Insert Commands:

```
INSERT INTO CLIENT_MASTER VALUES
('C00001','Ivan Bayross','Mumbai','Andheri East','Mumbai',400054,'Maharashtra',15000),
('C00002','Rahul Mehta','Pune','Shivaji Nagar','Pune',411005,'Maharashtra',8000),
('C00003','Anita Kapoor','Bangalore','Indiranagar','Bangalore',560038,'Karnataka',12000),
('C00004','Sanjay Verma','Nagpur','Civil Lines','Nagpur',440001,'Maharashtra',5000),
('C00005','Aman Singh','Jaipur','MI Road','Jaipur',302001,'Rajasthan',3000),
('C00006','Karan Malhotra','Mumbai','Borivali','Mumbai',400092,'Maharashtra',9500),
('C00007','Ravi Das','Chandigarh','Sector 22','Chandigarh',160022,'Punjab',4000);
```

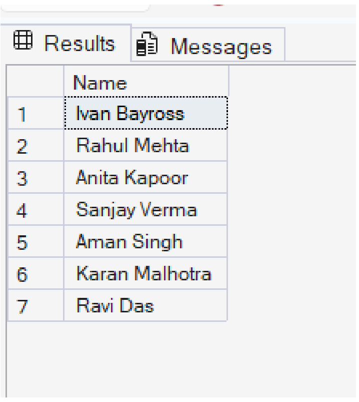
```
INSERT INTO PRODUCT_MASTER VALUES
('P00001','Shirts',10.00,'Piece',200,50,2500,1800),
('P00002','Trousers',12.00,'Piece',150,40,4500,3200),
('P00003','Pull Overs',15.00,'Piece',100,30,3000,2200),
('P00004','Jeans',14.00,'Piece',80,25,1800,1200),
('P00005','Jackets',20.00,'Piece',60,20,6000,4500),
('P00006','T-Shirts',8.00,'Piece',300,60,1200,700),
('P00007','Sweaters',18.00,'Piece',90,20,3500,2600);
```

```
INSERT INTO SALESMAN_MASTER VALUES
('S00001','Aman','A/14','Worli','Mumbai',400002,'Maharashtra',3000,100,50,'Good'),
('S00002','Rohit','B/21','MG Road','Pune',411001,'Maharashtra',3500,120,110,'Excellent'),
('S00003','Neha','C/9','BTM','Bangalore',560076,'Karnataka',3200,90,70,'Average'),
('S00004','Vikas','D/11','Karol Bagh','Delhi',110005,'Delhi',4000,150,140,'Excellent'),
('S00005','Pooja','E/7','Salt Lake','Kolkata',700091,'West Bengal',2800,80,60,'Good'),
('S00006','Arjun','F/19','Alkapuri','Vadodara',390007,'Gujarat',2600,70,55,'Average'),
('S00007','Sneha','G/3','Baner','Pune',411045,'Maharashtra',3000,95,85,'Good');
```

```
INSERT INTO SALES_ORDER VALUES
('O19001','C00001','2002-06-12','Mumbai','S00001','F','N','2002-07-20','In Process'),
('O19002','C00002','2002-04-10','Pune','S00002','P','Y','2002-04-25','Fulfilled'),
('O19003','C00003','2002-05-18','Bangalore','S00003','F','N','2002-06-05','Backorder'),
('O19004','C00001','2002-03-05','Mumbai','S00001','P','Y','2002-03-20','Cancelled'),
('O19005','C00004','2002-08-01','Nagpur','S00004','F','N','2002-08-15','In Process'),
('O19006','C00006','2002-09-10','Mumbai','S00005','P','Y','2002-09-22','Fulfilled'),
('O19007','C00007','2002-01-12','Chandigarh','S00006','F','N','2002-01-25','Fulfilled');


INSERT INTO SALES_ORDER_DETAILS VALUES
('O19001','P00001',10,10,2500),
('O19001','P00003',4,2,3000),
('O19002','P00002',20,20,4500),
('O19002','P00003',3,3,3000),
('O19003','P00001',15,15,2500),
('O19004','P00004',2,2,1800),
('O19006','P00006',25,25,1200);
```

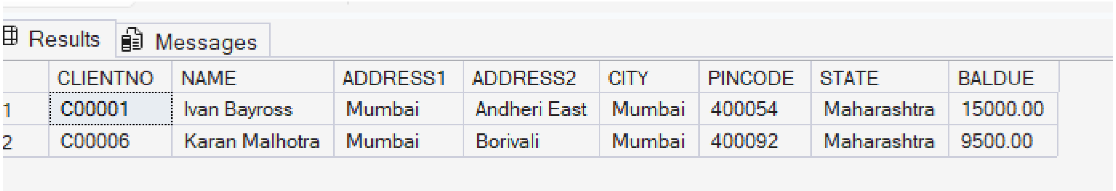
Queries:

```
/* ------------------------------------------------------------
 Display the names of all the clients
------------------------------------------------------------ */
SELECT Name
FROM CLIENT_MASTER;
```



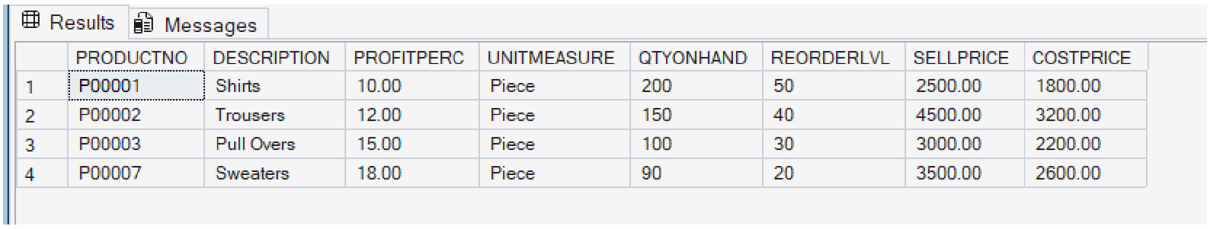
	Name
1	Ivan Bayross
2	Rahul Mehta
3	Anita Kapoor
4	Sanjay Verma
5	Aman Singh
6	Karan Malhotra
7	Ravi Das

```
/* ------------------------------------------------------------
Display all the clients who are located in Mumbai
------------------------------------------------------------ */
SELECT *
FROM CLIENT_MASTER
WHERE City = 'Mumbai';
```



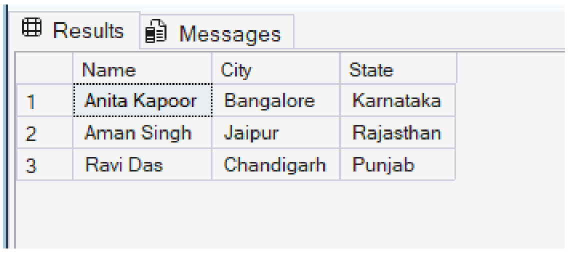
	CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	BALDUE
1	C00001	Ivan Bayross	Mumbai	Andheri East	Mumbai	400054	Maharashtra	15000.00
2	C00006	Karan Malhotra	Mumbai	Borivali	Mumbai	400092	Maharashtra	9500.00

```
/* ------------------------------------------------------------
Display all the products whose selling price is > 2000
    and less than 5000
------------------------------------------------------------ */
SELECT *
FROM PRODUCT_MASTER
WHERE SellPrice > 2000
  AND SellPrice < 5000;
```



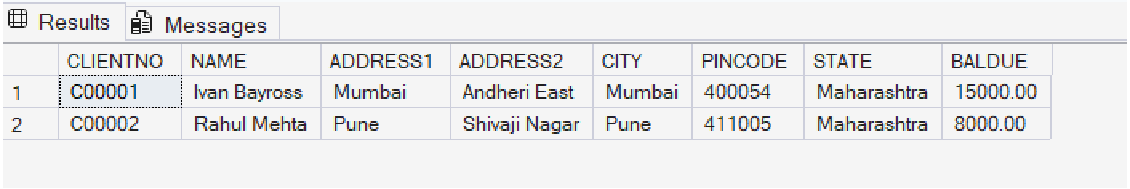
	PRODUCTNO	DESCRIPTION	PROFITPERC	UNITMEASURE	QTYONHAND	REORDERLVL	SELLPRICE	COSTPRICE
1	P00001	Shirts	10.00	Piece	200	50	2500.00	1800.00
2	P00002	Trousers	12.00	Piece	150	40	4500.00	3200.00
3	P00003	Pull Overs	15.00	Piece	100	30	3000.00	2200.00
4	P00007	Sweaters	18.00	Piece	90	20	3500.00	2600.00

```
/* ------------------------------------------------------------
Display Name, City and State of clients who are NOT
    in the state of Maharashtra
------------------------------------------------------------ */
SELECT Name, City, State
FROM CLIENT_MASTER
WHERE State <> 'Maharashtra';
```



	Name	City	State
1	Anita Kapoor	Bangalore	Karnataka
2	Aman Singh	Jaipur	Rajasthan
3	Ravi Das	Chandigarh	Punjab

```
/* ------------------------------------------------------------
Display all the information of client no C00001 and C00002
------------------------------------------------------------ */
SELECT *
FROM CLIENT_MASTER
WHERE ClientNo IN ('C00001', 'C00002');
```

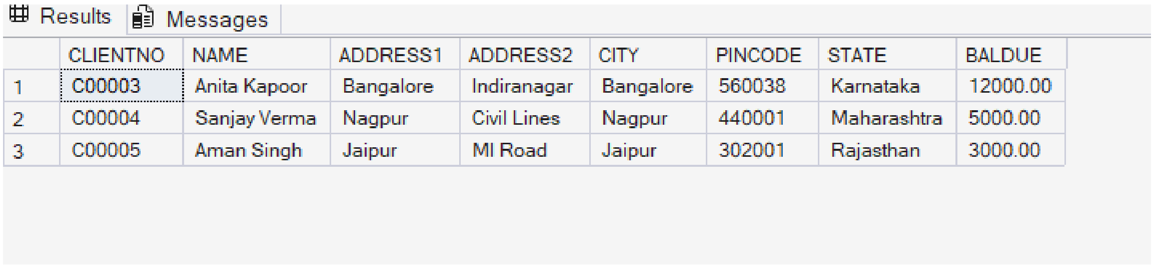


	CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	BALDUE
1	C00001	Ivan Bayross	Mumbai	Andheri East	Mumbai	400054	Maharashtra	15000.00
2	C00002	Rahul Mehta	Pune	Shivaji Nagar	Pune	411005	Maharashtra	8000.00

```
/* -----------------------------------------------------------
Change the selling price of '1.44 drive' to Rs. 1150.50
----------------------------------------------------------- */
UPDATE PRODUCT_MASTER
SET SellPrice = 1150.50
WHERE Description = '1.44 drive';
```

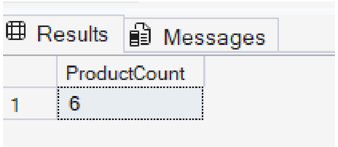
```
/* -----------------------------------------------------------
Delete the record of client_no C00005
----------------------------------------------------------- */
DELETE FROM CLIENT_MASTER
WHERE ClientNo = 'C00005';
```

```
/* -----------------------------------------------------------
Display the clients who stay in a city whose
   second letter is 'a'
----------------------------------------------------------- */
SELECT *
FROM CLIENT_MASTER
WHERE City LIKE '_a%';
```



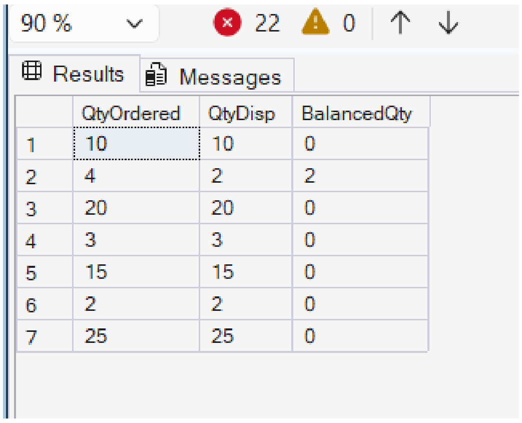
	CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	BALDUE
1	C00003	Anita Kapoor	Bangalore	Indiranagar	Bangalore	560038	Karnataka	12000.00
2	C00004	Sanjay Verma	Nagpur	Civil Lines	Nagpur	440001	Maharashtra	5000.00
3	C00005	Aman Singh	Jaipur	MI Road	Jaipur	302001	Rajasthan	3000.00

```
/* -----------------------------------------------------------
Count the number of products having price
   greater than or equal to 1500
----------------------------------------------------------- */
SELECT COUNT(*) AS ProductCount
FROM PRODUCT_MASTER
WHERE SellPrice >= 1500;
```



	ProductCount
1	6

```
/* -----------------------------------------------------------------
Display qtyordered, qtydisp and balancedqty
    (balancedqty is not stored in the table)
----------------------------------------------------------------- */
SELECT
QtyOrdered,
QtyDisp,
(QtyOrdered - QtyDisp) AS BalancedQty
FROM SALES_ORDER_DETAILS;
```

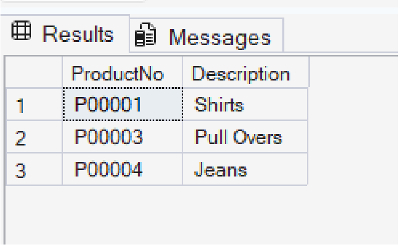


	QtyOrdered	QtyDisp	BalancedQty
1	10	10	0
2	4	2	2
3	20	20	0
4	3	3	0
5	15	15	0
6	2	2	0
7	25	25	0

```
/* -----------------------------------------------------------------
1. Make Client_no as PRIMARY KEY in CLIENT_MASTER table
----------------------------------------------------------------- */
ALTER TABLE CLIENT_MASTER
ADD CONSTRAINT PK_CLIENT_MASTER
PRIMARY KEY (ClientNo);


/* -----------------------------------------------------------------
2. Add a new column phone_no in CLIENT_MASTER table
----------------------------------------------------------------- */
ALTER TABLE CLIENT_MASTER
ADD Phone_No VARCHAR(15);


/* -----------------------------------------------------------------
3. Add NOT NULL constraint in PRODUCT_MASTER table
   for Description, ProfitPerc, SellPrice and CostPrice
----------------------------------------------------------------- */
ALTER TABLE PRODUCT_MASTER
ALTER COLUMN Description VARCHAR(15) NOT NULL;

ALTER TABLE PRODUCT_MASTER
```

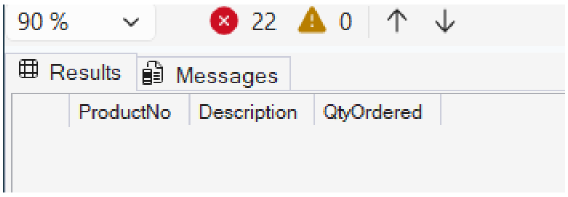
```sql
ALTER COLUMN ProfitPerc NUMERIC(4,2) NOT NULL;

ALTER TABLE PRODUCT_MASTER
ALTER COLUMN SellPrice NUMERIC(8,2) NOT NULL;

ALTER TABLE PRODUCT_MASTER
ALTER COLUMN CostPrice NUMERIC(8,2) NOT NULL;


/* ------------------------------------------------------------
4. Change size of Name column to 60 in CLIENT_MASTER table
------------------------------------------------------------ */
ALTER TABLE CLIENT_MASTER
ALTER COLUMN Name VARCHAR(60);


/* ------------------------------------------------------------
5. Remove Pincode column from CLIENT_MASTER table
------------------------------------------------------------ */
ALTER TABLE CLIENT_MASTER
DROP COLUMN Pincode;



/* ------------------------------------------------------------
Define in 1 or 2 lines and give one example
------------------------------------------------------------ */

/* 1. Recursive Relationship
   A recursive relationship is when a table is related to itself.
   Example: An employee managing another employee in the same table. */
-- Example
ManagerID REFERENCES EMPLOYEE(EmployeeID)


/* 2. Composite Key
   A composite key is a primary key formed using two or more columns.
   Example: OrderNo and ProductNo together uniquely identify a record. */
-- Example
PRIMARY KEY (OrderNo, ProductNo)


/* 3. LIKE Operator with Pattern Matching
   The LIKE operator is used to search for a specified pattern in a column.
   Example: Find cities whose second letter is 'a'. */
-- Example
SELECT * FROM CLIENT_MASTER
WHERE City LIKE '_a%';


/* 4. DROP TABLE Command
   DROP TABLE permanently removes a table and all its data.
   Example: Deleting the CLIENT_MASTER table. */
-- Example
DROP TABLE CLIENT_MASTER;
```

```
/* 5. Full Outer Join
   A Full Outer Join returns all records from both tables, matching or not.
   Example: Fetch all clients and their orders. */
-- Example
SELECT *
FROM CLIENT_MASTER
FULL OUTER JOIN SALES_ORDER
ON CLIENT_MASTER.ClientNo = SALES_ORDER.ClientNo;




/* ------------------------------------------------------------
Write queries for following descriptions (JOINS)
------------------------------------------------------------ */

/* 1. Find out the products which have been sold to 'Ivan Bayross' */
SELECT DISTINCT PM.ProductNo, PM.Description
FROM CLIENT_MASTER CM
JOIN SALES_ORDER SO ON CM.ClientNo = SO.ClientNo
JOIN SALES_ORDER_DETAILS SOD ON SO.OrderNo = SOD.OrderNo
JOIN PRODUCT_MASTER PM ON SOD.ProductNo = PM.ProductNo
WHERE CM.Name = 'Ivan Bayross';
```



	ProductNo	Description
1	P00001	Shirts
2	P00003	Pull Overs
3	P00004	Jeans

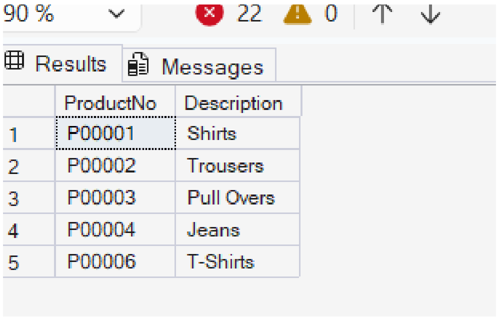
```
/* ------------------------------------------------------------
2. Find the products and their quantities that have to be
   delivered in the current month
------------------------------------------------------------ */
SELECT PM.ProductNo, PM.Description, SOD.QtyOrdered
FROM SALES_ORDER SO
JOIN SALES_ORDER_DETAILS SOD ON SO.OrderNo = SOD.OrderNo
JOIN PRODUCT_MASTER PM ON SOD.ProductNo = PM.ProductNo
WHERE MONTH(SO.DelyDate) = MONTH(GETDATE())
  AND YEAR(SO.DelyDate) = YEAR(GETDATE());
```



	ProductNo	Description	QtyOrdered

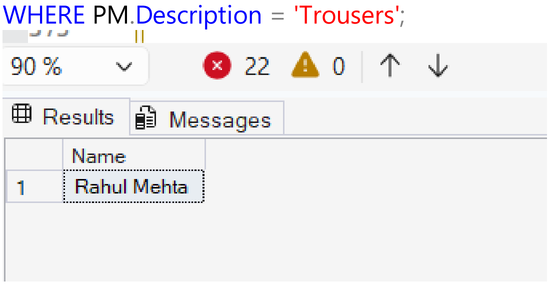
```
/* ------------------------------------------------------------
3. List ProductNo and Description of constantly sold
```

```
   (rapidly moving) products
------------------------------------------------------------ */
SELECT DISTINCT PM.ProductNo, PM.Description
FROM PRODUCT_MASTER PM
JOIN SALES_ORDER_DETAILS SOD ON PM.ProductNo = SOD.ProductNo
JOIN SALES_ORDER SO ON SOD.OrderNo = SO.OrderNo;
```



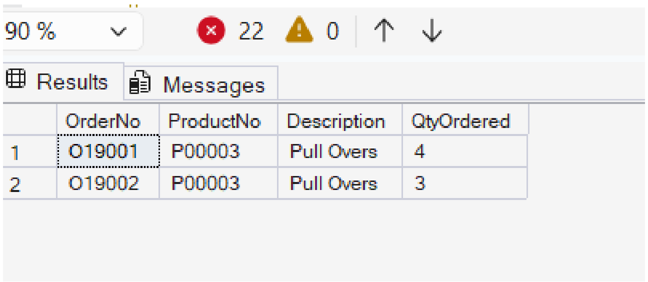
	ProductNo	Description
1	P00001	Shirts
2	P00002	Trousers
3	P00003	Pull Overs
4	P00004	Jeans
5	P00006	T-Shirts

```
/* ------------------------------------------------------------
4. Find the names of clients who have purchased 'Trousers'
------------------------------------------------------------ */
SELECT DISTINCT CM.Name
FROM CLIENT_MASTER CM
JOIN SALES_ORDER SO ON CM.ClientNo = SO.ClientNo
JOIN SALES_ORDER_DETAILS SOD ON SO.OrderNo = SOD.OrderNo
JOIN PRODUCT_MASTER PM ON SOD.ProductNo = PM.ProductNo
WHERE PM.Description = 'Trousers';
```



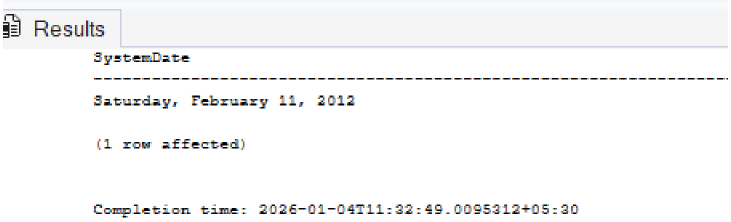
	Name
1	Rahul Mehta

```
/* ------------------------------------------------------------
5. List the products and orders from customers who have ordered
   less than 5 units of 'Pull Overs'
------------------------------------------------------------ */
SELECT
    SO.OrderNo,
    PM.ProductNo,
    PM.Description,
    SOD.QtyOrdered
FROM SALES_ORDER SO
JOIN SALES_ORDER_DETAILS SOD ON SO.OrderNo = SOD.OrderNo
JOIN PRODUCT_MASTER PM ON SOD.ProductNo = PM.ProductNo
WHERE PM.Description = 'Pull Overs'
  AND SOD.QtyOrdered < 5;
```



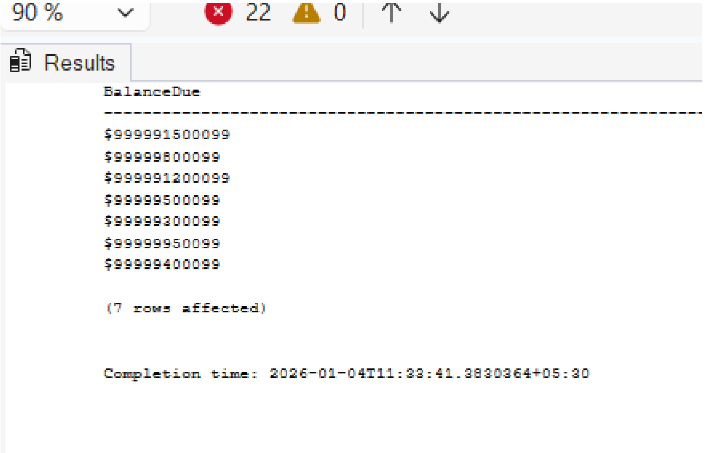
	OrderNo	ProductNo	Description	QtyOrdered
1	O19001	P00003	Pull Overs	4
2	O19002	P00003	Pull Overs	3

```sql
/* ================================================================
Write Commands to do following
================================================================ */

/* 1. Display system date as Saturday, February 11, 2012 */
SELECT
    FORMAT(CAST('2012-02-11' AS DATE), 'dddd, MMMM dd, yyyy')
    AS SystemDate;
```



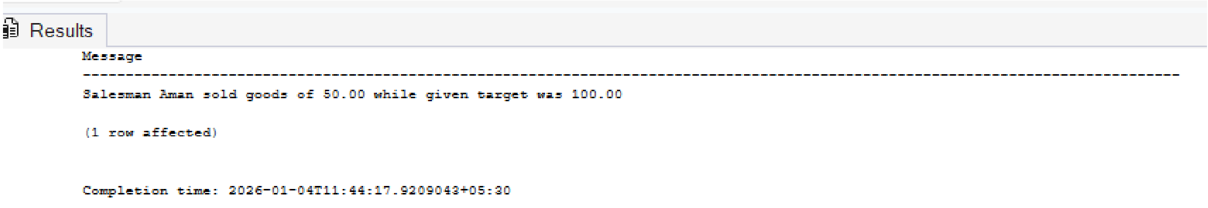
```
SystemDate
--------------------------------------------------------------------
Saturday, February 11, 2012

(1 row affected)


Completion time: 2026-01-04T11:32:49.0095312+05:30
```

```sql
/* -------------------------------------------------------------
2. Display Balance Due from CLIENT_MASTER as $99,999.99
------------------------------------------------------------- */
SELECT
    FORMAT(BalDue, '$99,999.99') AS BalanceDue
FROM CLIENT_MASTER;
```



```
BalanceDue
----------------------------------------------------------------
$999991500099
$99999800099
$999991200099
$99999500099
$99999300099
$99999950099
$99999400099

(7 rows affected)


Completion time: 2026-01-04T11:33:41.3830364+05:30
```

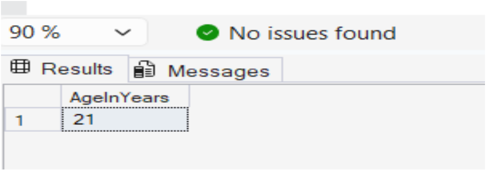
```
/* ------------------------------------------------------------
3. Display message as:
   'Salesman Aman sold goods of 50 while given target was 100.'
------------------------------------------------------------ */
SELECT
    'Salesman ' + SalesmanName +
    ' sold goods of ' + CAST(YTDSales AS VARCHAR) +
    ' while given target was ' + CAST(TGTTOGET AS VARCHAR)
    AS Message
FROM SALESMAN_MASTER
WHERE SalesmanName = 'Aman';
```



Results

```
Message
--------------------------------------------------------------------------------------------------------------
Salesman Aman sold goods of 50.00 while given target was 100.00

(1 row affected)


Completion time: 2026-01-04T11:44:17.9209043+05:30
```

```
/* ------------------------------------------------------------
4. Display your Age in Years
------------------------------------------------------------ */
SELECT
    DATEDIFF(YEAR, '2004-05-14', GETDATE())
    - CASE
        WHEN FORMAT(GETDATE(), 'MM-dd') < '05-14' THEN 1
        ELSE 0
      END AS AgeInYears;
```



	AgeInYears
1	21