DATABASE CREATION

```
create database Week_1DB;

use Week_1DB;
```

TABLE CREATIONS

CLIENTMASTER

```
create table clientmaster(
clientno varchar(6) primary key check(clientno like 'C%'),
name varchar(20) not null,
address1 varchar(30),
address2 varchar(30),
city varchar(15),
pincode int,
state varchar(15),
baldue numeric(10,2)
);
```

PRODUCTMASTER:

```
create table productmaster(
productno varchar(6) primary key check(productno like 'P%'),
description varchar(15) not null,
profitperc numeric(4,2) not null,
unitmeasure varchar(10),
qtyonhand numeric(8,0) not null,
reordervl int not null,
sellprice numeric(8,2) not null check(sellprice!=0),
costprice numeric(8,2) not null check(costprice!=0));
```

SALESMASTER:

```
create table salesmanmaster(
sales_man_no varchar(6) primary key check(sales_man_no like 'S%'),
sales_man_name varchar(20) not null,
address1 varchar(30) not null,
address2 varchar(30) not null,
city varchar(20),
pincode int,
state varchar(20),
salamt numeric(8,2) not null check(salamt!=0),
```

tgttoget numeric(6,2) not null,
ytdsales numeric(6,2) not null,
remarks varchar(60));

SALESORDER:

```
create table salesorder(
order_no varchar(6) primary key check(order_no like 'O%'),
client_no varchar(6),
orderdate date,
delyaddr varchar(25),
sales_man_no varchar(6),
deltype char(1) check(deltype 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_clientno foreign key(client_no) references clientmaster(clientno) on delete
cascade on update cascade,
constraint fk_sales_man_no foreign key(sales_man_no) references
salesmanmaster(sales_man_no) on delete cascade on update cascade);
```

SALESORDER_DETAILS:

```
create table salesorder_details(
order_no varchar(6),
productno varchar(6),
qtyordered int,
qtydisp int,
productrate numeric(10,2),
primary key(order_no,productno),
constraint fk_odno foreign key(order_no) references salesorder(order_no) on delete
cascade on update cascade,
constraint fk_pdno foreign key(productno) references productmaster(productno) on
delete cascade on update cascade);
```

INSERTIONS

insert into **clientmaster** (clientno, name, address1, address2, city, pincode, state, baldue)
values
('C00001','Ivan Bayross','A','B','Mumbai',400054,'Maharashtra',15000),

('C00002','Ananya Iyer','C','D','Madurai',625001,'Tamil Nadu',3000),
('C00003','Alia Khan','E','F','Mangalore',575003,'Karnataka',4500),
('C00004','Riya Sen','G','H','Nagpur',440010,'Maharashtra',22000),
('C00005','Amit Kumar','I','J','Pune',411001,'Maharashtra',800);

insert into **productmaster** (productno, description, profitperc, unitmeasure, qtyonhand, reordervl, sellprice, costprice)
values('P00001','T-Shirts',5.00,'Piece',200,50,250,100),
('P00002','Jeans',10.00,'Piece',50,10,1500,800),
('P00003','Trousers',8.50,'Piece',4,5,3000,1500),
('P00004','Pull Overs',12.50,'Piece',3,5,5000,3000),
('P00005','Shoes',15.00,'Pair',600,100,2000,1200);

insert into **salesmanmaster** (sales_man_no, sales_man_name, address1, address2, city, pincode, state, salamt, tgttoget, ytdsales, remarks)
values
('S00001','Aman','K','L','Mumbai',400001,'Maharashtra',50000,100,50,'Inspiration'),
('S00002','Priyanka','M','N','Hyderabad',500090,'Telangana',75000,200,80,'Hard work'),
('S00003','Akshara','O','P','Chennai',600002,'Tamil Nadu',90000,150,120,'Smart'),
('S00004','Arjun','Q','R','Delhi',110001,'Delhi',60000,130,30,'Learner'),
('S00005','Akhil','S','T','Pune',411001,'Maharashtra',55000,140,70,'Motivation');

insert into **salesorder** (order_no, client_no, orderdate, delyaddr, sales_man_no, deltype, billedyn, delydate, orderstatus)
values
('O19001','C00001','2012-04-12','Dadar','S00001','F','N','2012-04-20','In Process'),
('O19002','C00002','2012-07-02','Madurai Main','S00003','P','Y','2012-07-10','Fulfilled'),
('O19003','C00003','2012-04-05','Mangalore Port','S00002','F','N','2012-04-15','Backorder'),
('O19004','C00004','2012-05-15','Nagpur Center','S00005','P','Y','2012-05-25','Fulfilled'),
('O19005','C00005','2012-03-21','Mumbai Central','S00004','F','N','2012-04-02','Cancelled');

insert into **salesorder_details** (order_no, productno, qtyordered, qtydisp, productrate)
values
('O19001','P00001',4,4,525),

('O19001','P00003',2,1,3000),
('O19002','P00002',10,10,1500),
('O19003','P00003',3,2,3000),
('O19004','P00004',2,2,5000);

insert into clientmaster (clientno, name, address1, address2, city, pincode, state, baldue)
values ('C00010','Old Client','X','Y','Mumbai',400000,'Maharashtra',100);
insert into salesmanmaster (sales_man_no, sales_man_name, address1, address2, city, pincode, state, salamt, tgttoget, ytdsales, remarks)
values
('S00010','oldsalesman','X','Y','Mumbai',400000,'Maharashtra',50000,100,0,'NA');
insert into salesorder (order_no, client_no, orderdate, delyaddr, sales_man_no, deltype, billedyn, delydate, orderstatus)
values ('O20001','C00010','2002-04-15','Mumbai','S00010','P','Y','2002-04-20','Fulfilled');

ANSWER THE FOLLOWING QUERIES WITH THE HELP OF THE ABOVE SCHEMA:

1. Display the names of all the clients.

select name as client_names from clientmaster ;

	client_names
1	Ivan Bayross
2	Ananya Iyer
3	Alia Khan
4	Riya Sen
5	Amit Kumar

2.Display all the clients who are located in Mumbai

Select * from clientmaster where city like 'Mumbai%';

Results Messages

	clientno	name	address1	address2	city	pincode	state	baldue
1	C00001	Ivan Bayross	A	B	Mumbai	400054	Maharashtra	15000.00

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

Select * from productmaster where sellprice>2000 and sellprice<5000;

Results Messages

	productno	description	profitperc	unitmeasure	qtyonhand	reordervl	sellprice	costprice
1	P00003	Trousers	8.50	Piece	4	5	3000.00	1500.00

4. Display Name, City and State of Clients not in the state of Maharashtra.

select name,city,state from clientmaster where state not like 'Maharashtra%' and state not like 'Maharastra';

Results Messages

	name	city	state
1	Ananya Iyer	Madurai	Tamil Nadu
2	Alia Khan	Mangalore	Karnataka

5. Display all the information of client no C0001 and C0002

select * from clientmaster where clientno='C00001' or clientno='C00002';

Results Messages

	clientno	name	address1	address2	city	pincode	state	baldue
1	C00001	Ivan Bayross	A	B	Mumbai	400054	Maharashtra	15000.00
2	C00002	Ananya Iyer	C	D	Madurai	625001	Tamil Nadu	3000.00

6. Change the selling price of '1.44 drive' to Rs. 1150.50.

update productmaster set sellprice = 1150.50 where description = '1.44 drive';

Messages

```
(0 rows affected)

Completion time: 2026-01-04T22:21:03.8213804+05:30
```

7. Delete the record of client_no C00005.

delete from clientmaster where clientno='C00005';

Messages

```
(1 row affected)

Completion time: 2026-01-04T22:21:42.6438105+05:30
```

8. Display the clients who stay in a city whose second letter is 'a'.

select * from clientmaster where city like '_a%' ;

Results Messages

	clientno	name	address1	address2	city	pincode	state	baldue
1	C00002	Ananya Iyer	C	D	Madurai	625001	Tamil Nadu	3000.00
2	C00003	Alia Khan	E	F	Mangalore	575003	Karnataka	4500.00
3	C00004	Riya Sen	G	H	Nagpur	440010	Maharashtra	22000.00

9. Count the number of products having price greater than or equal to 1500.

select count(*) as total_products from productmaster where sellprice >= 1500;

Results Messages

	total_products
1	4

10. Display qtyordered, qtydisp and balancedqty (not in table).

select qtyordered,qtydisp,(qtyordered - qtydisp) as balancedqty from salesorder_details;

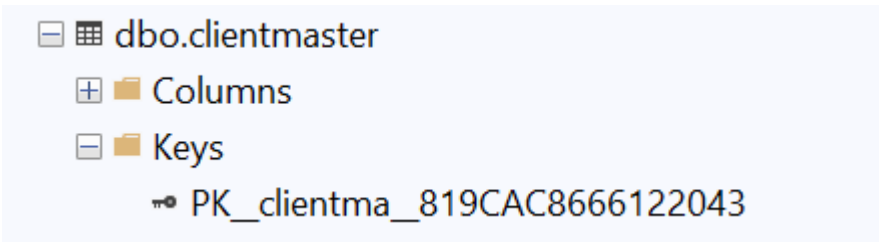
Results Messages

	qtyordered	qtydisp	balancedqty
1	4	4	0
2	2	1	1
3	10	10	0
4	3	2	1
5	2	2	0

WRITE COMMANDS TO DO THE FOLLOWING

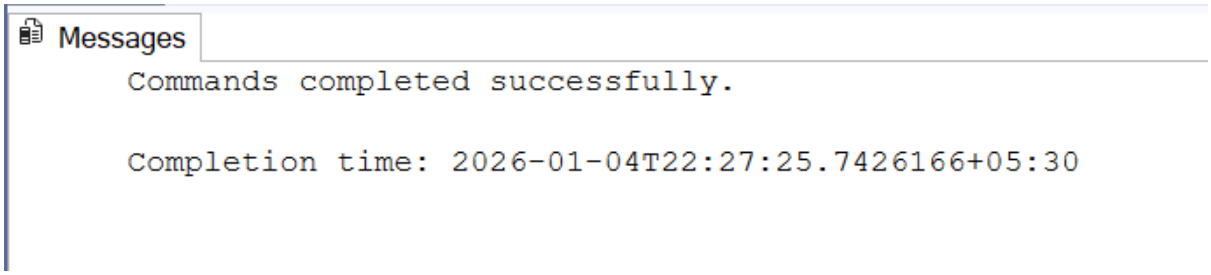
1.Make Client_no as primary key in client_master.

alter table clientmaster add constraint pk_clientno primary key(clientno);



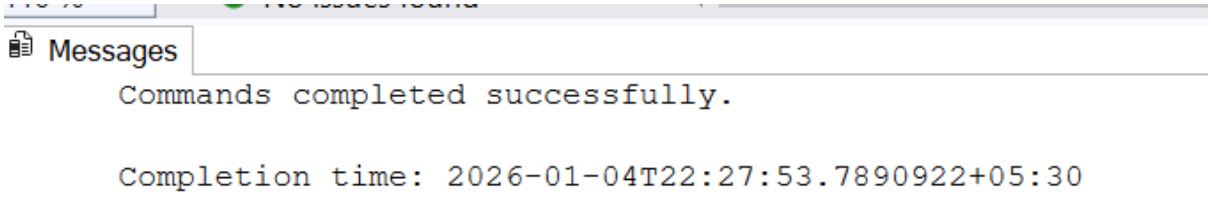
2. Add a new column phone_no in the client_master table.

alter table clientmaster add phone_no varchar(15);



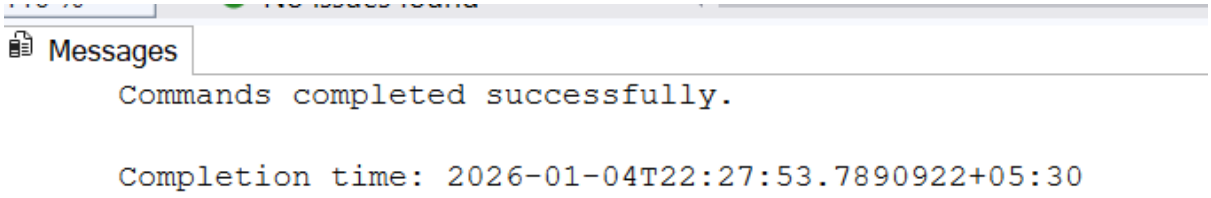
3. Add the not null constraint in the product_master table with the column description, profit percent, sell price and cost price.

alter table productmaster alter column description varchar(15) not null;
alter table productmaster alter column profitperc numeric(4,2) not null;
alter table productmaster alter column sellprice numeric(8,2) not null;
alter table productmaster alter column costprice numeric(8,2) not null;



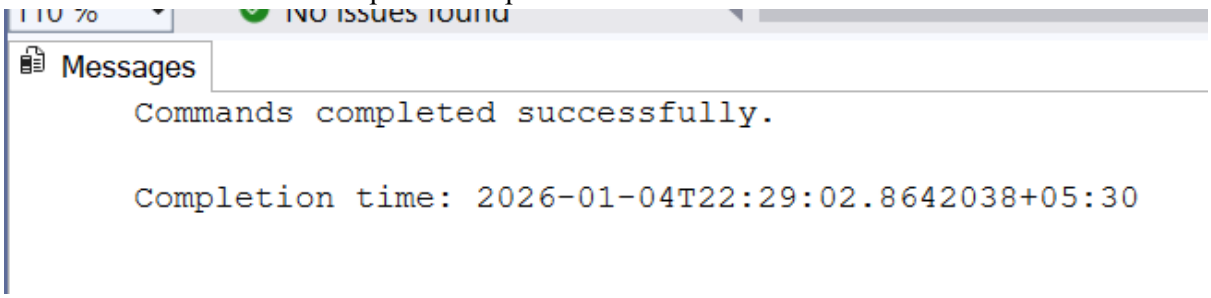
4. Change size of name column to 60 in client_master table.

alter table clientmaster alter column name varchar(60) not null;



5. Remove pincode column from table.

alter table clientmaster drop column pincode;



Define in 1 or 2 lines and give example

1.Recursive relationship

A table referencing its own primary key as a foreign key.

Example: IN INSURANCEDB

```
create table employees(
empid int primary key,
name varchar(20),
managerid int,
foreign key(managerid) references employees(empid));
```

Here, managerid refers empid (same table).so it's recursive.

2.Composite Key

A composite key is a primary key made up of two or more attributes that together uniquely identify a record when one attribute alone cannot.

```
create table order_items(
order_num int not null,
order_item int not null,
prod_id nchar(10) not null,
quantity int not null,
item_price money not null,
primary key(order_num,order_item)
);
```

In salesdb order_items, uses (order_num, order_item) as primary key(composite primary) to uniquely identify each item even if the same product is ordered multiple times.

3.The Like Operator With Pattern Macthing
The LIKE operator is used to find data that matches a specific text pattern in a column using wildcards.

Example:
name like 'a%' → selects all names that start with the letter a.

4.Drop table command
The drop command is used to permanently delete a database or table along with all its data and structure.
Example:
drop table employee;

5.Full Outer Join
A full outer join returns all records from both tables, showing matching rows where available and null where no match exists.
example:
select * from a full outer join b on a.id = b.id;

JOINS:

1.Find out the products, which have been sold to 'Ivan Bayross'.

```
select p.productno, p.description, d.qtydisp
from clientmaster c
join salesorder s on c.clientno = s.client_no
join salesorder_details d on s.order_no = d.order_no
join productmaster p on p.productno = d.productno
where c.name = 'Ivan Bayross';
```

Results | Messages

	productno	description	qtydisp
1	P00001	T-Shirts	4
2	P00003	Trousers	1

2. Finding out the products and their quantities that will have to be delivered in the current month.

```
select d.order_no, d.productno, d.qtyordered
from salesorder s
join salesorder_details d on s.order_no = d.order_no
```

where datepart(month,s.delydate) = datepart(month,getdate()) and
datepart(year,s.delydate) = datepart(year,getdate());

Results Messages

	order_no	productno	qtyordered
1	O00999	P00999	3

3. Listing the ProductNo and description of constantly sold (i.e. rapidly moving) products.

```
select p.productno, p.description, sum(d.qtydisp)
from salesorder_details d
join productmaster p on p.productno = d.productno
group by p.productno, p.description;
```

Results Messages

	productno	description	(No column name)
1	P00001	T-Shirts	4
2	P00002	Shoes	4
3	P00003	Bag	8
4	P00004	Watch	2

4. Finding the names of clients who have purchased 'Trousers'.

```
select distinct c.name
from clientmaster c
join salesorder s on c.clientno = s.client_no
join salesorder_details d on s.order_no = d.order_no
join productmaster p on p.productno = d.productno
where p.description = 'Trousers';
```

Results Messages

	name
1	Alia Khan
2	Ivan Bayross

5. Listing the products and orders from customers who have ordered less than 5 units of 'Pull Overs'.

```
select d.order_no, p.productno, p.description, d.qtyordered
from salesorder_details d
join productmaster p on p.productno = d.productno
where p.description = 'Pull Overs' and d.qtyordered < 5;
```

Results Messages

	order_no	productno	description	qtyordered
1	O19004	P00004	Pull Overs	2

Write queries for following descriptions: (Subqueries)

1. Finding the non-moving products i.e. products not being sold.

```
select productno, description
from productmaster
where productno not in (select distinct productno from salesorder_details);
```

Results Messages

	productno	description
1	P00005	Shoes

2. Finding the name and complete address for the customer who has placed Order number 'O19001'.

```
select name, concat(address1, address2) as complete_address, city, state
from clientmaster
where clientno = (select client_no from salesorder where order_no = 'O19001');
```

Results Messages

	name	complete_address	city	state
1	Ivan Bayross	AB	Mumbai	Maharashtra

3. Finding the clients who have placed orders before the month of May'02.

```
select distinct c.name
from clientmaster c
where c.clientno in (select client_no from salesorder where orderdate < '2002-05-01');
```

Results Messages

	name
1	Old Client

Write Commands to do following

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

select format(getdate(), 'dddd, MMMM dd, yyyy');

Results Messages

	(No column name)
1	Sunday, January 04, 2026

2. Display Balance Due from Client master as $99,999.99

select concat('$', cast(baldue as decimal(10,2))) as baldue from clientmaster;

Results Messages

	baldue
1	$15000.00
2	$3000.00
3	$4500.00
4	$22000.00
5	$100.00

3. Display message as 'Salesman Aman sold goods of 50 while given target was 100.

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

Results Messages

	message
1	Salesman Aman sold goods of 50 while given target was 100.

4. Display your Age in Years

select datediff(year, '2004-07-13', getdate()) as age_years;

Results Messages

	age_years
1	22