WEEKLY ASSIGNMENT

```
Use ClientSalesDB


--TABLE 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    bigint,
    state      varchar(15),
    baldue     decimal(10,2)
);

---product_master
create table product_master (
    productno     varchar(6) primary key check (productno like 'p%'),
    description   varchar(15) not null,
    profitperc    decimal(4,2) not null,
    unitsasure    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)
);


--salesman_master
create table salesman_master (
    salesmanno    varchar(6) primary key check (salesmanno like 's%'),
    salesmanname  varchar(30) not null,
    address1      varchar(30) not null,
    address2      varchar(30),
    city          varchar(20),
    pincode       bigint,
    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)
);


--sales_order
create table sales_order (
    orderno      varchar(6) primary key check (orderno like 'o%'),
    clientno     varchar(6),
```

```
    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(15) check (orderstatus in ('in
process','fulfilled','backorder','cancelled')),
    foreign key (clientno) references client_master(clientno),
    foreign key (salesmanno) references salesman_master(salesmanno)
);



----sales_order_details
create table sales_order_details (
    orderno      varchar(6),
    productno    varchar(6),
    qtyordered   int,
    qtydisp      int,
    productrate  decimal(10,2),
    primary key (orderno, productno),
    foreign key (orderno) references sales_order(orderno),
    foreign key (productno) references product_master(productno)
);


---INSERTION

insert into client_master (clientno, name, city, pincode, state, baldue)
values ('c00001','ivan bayross','mumbai',400054,'maharashtra',15000);
insert into client_master (clientno, name, city, pincode, state, baldue)
values
('c00002','sunil shah','pune',411001,'maharashtra',12000),
('c00003','ravi kumar','hyderabad',500001,'telangana',18000),
('c00004','anita joseph','chennai',600001,'tamil nadu',9000),
('c00005','rahul mehta','delhi',110001,'delhi',20000),
('c00006','neha singh','jaipur',302001,'rajasthan',8500),
('c00007','amit verma','indore',452001,'madhya pradesh',10000),
('c00008','pooja nair','kochi',682001,'kerala',7000),
('c00009','suresh patil','nagpur',440001,'maharashtra',11000),
('c00010','kiran reddy','warangal',506002,'telangana',9500);


insert into product_master values
('p00001','t-shirts',5,'piece',200,50,350,250),
('p00002','shirts',6,'piece',150,40,500,380),
('p00003','jeans',8,'piece',120,30,900,700),
('p00004','jackets',10,'piece',80,20,1500,1200),
('p00005','shoes',7,'pair',100,25,2000,1600),
```

```
('p00006','caps',4,'piece',300,60,150,100),
('p00007','belts',3,'piece',250,50,300,200),
('p00008','socks',2,'pair',400,80,120,80),
('p00009','sweaters',9,'piece',90,20,1300,1000),
('p00010','shorts',5,'piece',160,35,600,450);


insert into salesman_master values
('s00001','aman','a/14','worli','mumbai',400002,'maharashtra',3000,100,5
0,'good'),
('s00002','rohit','b/10','andheri','mumbai',400053,'maharashtra',3200,12
0,60,'average'),
('s00003','vikas','c/22','banjara
hills','hyderabad',500034,'telangana',3500,150,80,'excellent'),
('s00004','priya','d/8','adyar','chennai',600020,'tamil
nadu',2800,90,45,'good'),
('s00005','arjun','e/5','karol
bagh','delhi',110005,'delhi',4000,200,110,'excellent'),
('s00006','neeraj','f/18','vaishali','jaipur',302021,'rajasthan',2600,85
,40,'average'),
('s00007','deepak','g/11','palasia','indore',452010,'madhya
pradesh',2900,95,55,'good'),
('s00008','reshma','h/6','panampilly','kochi',682036,'kerala',3100,105,6
0,'good'),
('s00009','manoj','i/9','sitabuldi','nagpur',440012,'maharashtra',2700,8
8,42,'average'),
('s00010','sai','j/4','hanamkonda','warangal',506001,'telangana',3300,13
0,70,'excellent');


insert into sales_order
(orderno, orderdate, clientno, delyaddr, salesmanno, delytype, billedyn,
delydate, orderstatus)
values
('o19001','2022-06-12','c00001','mumbai','s00001','f','n','2022-07-
20','in process'),
('o19002','2022-06-15','c00002','pune','s00002','p','y','2022-06-
18','fulfilled'),
('o19003','2022-06-18','c00003','hyderabad','s00003','f','n','2022-07-
25','backorder'),
('o19004','2022-06-20','c00004','chennai','s00004','p','y','2022-06-
22','fulfilled'),
('o19005','2022-06-22','c00005','delhi','s00005','f','n','2022-07-
28','in process'),
('o19006','2022-06-25','c00006','jaipur','s00006','p','y','2022-06-
27','fulfilled'),
('o19007','2022-06-27','c00007','indore','s00007','f','n','2022-08-
01','backorder'),
('o19008','2022-06-29','c00008','kochi','s00008','p','y','2022-07-
01','fulfilled'),
```

```
('o19009','2022-07-01','c00009','nagpur','s00009','f','n','2022-08-
05','cancelled'),
('o19010','2022-07-03','c00010','warangal','s00010','p','y','2022-07-
06','fulfilled');


insert into sales_order_details values
('o19001','p00001',4,4,525),
('o19002','p00002',3,3,600),
('o19003','p00003',2,1,950),
('o19004','p00004',1,1,1600),
('o19005','p00005',2,0,2100),
('o19006','p00006',5,5,160),
('o19007','p00007',3,2,320),
('o19008','p00008',6,6,130),
('o19009','p00009',1,0,1350),
('o19010','p00010',4,4,650);


select * from sales_order
select * from client_master
select * from sales_order_details
select * from product_master
select * from salesman_master



--Display the names of all the clients
select name from client_master
```

Results | Messages

	name
1	ivan bayross
2	sunil shah
3	ravi kumar
4	anita joseph
5	rahul mehta
6	neha singh
7	amit verma
8	pooja nair
9	suresh patil
10	kiran reddy

```sql
--Display all the clients who are located in Mumbai.
select * from client_master where city='Mumbai';
```

Results | Messages

	clientno	name	address1	address2	city	pincode	state	baldue
1	c00001	ivan bayross	NULL	NULL	mumbai	400054	maharashtra	15000.00

```sql
--Display all the products whose selling price is > 2000 and < 5000
select * from product_master
where sellprice>2000 and sellprice<5000;
```

Results | Messages

	productno	description	profitperc	unitsasure	qtyonhand	reorderlvl	sellprice	costprice

```sql
--Display Name, City and State of Clients not in the state of
Maharashtra
select name,city,state from client_master
where state not in ('maharashtra');
```

Results | Messages

	name	city	state
1	ravi kumar	hyderabad	telangana
2	anita joseph	chennai	tamil nadu
3	rahul mehta	delhi	delhi
4	neha singh	jaipur	rajasthan
5	amit verma	indore	madhya pradesh
6	pooja nair	kochi	kerala
7	kiran reddy	warangal	telangana

```sql
--Display all the information of client_no C0001 and C0002
select * from client_master
where clientno in ('C00001','C00002');
```

Results | Messages

	clientno	name	address1	address2	city	pincode	state	baldue
1	c00001	ivan bayross	NULL	NULL	mumbai	400054	maharashtra	15000.00
2	c00002	sunil shah	NULL	NULL	pune	411001	maharashtra	12000.00

```sql
--Change the selling price of '1.44 drive' to Rs. 1150.50
update product_master set sellprice=1150.50 where description='1.44
drive';
```

```
(0 rows affected)

Completion time: 2026-01-02T12:45:13.9321436+05:30
```

```sql
--Delete order details
delete from sales_order_details
where orderno in (
    select orderno
    from sales_order
    where clientno = 'c00005'
);
--Delete sales orders
delete from sales_order where clientno='C00005';
--Delete the record of client_no C0005
delete from client_master where clientno='C00005';
```

Messages

```
(1 row affected)

Completion time: 2026-01-02T14:06:10.0167999+05:30
```

```sql
select * from client_master
```

Results | Messages

	clientno	name	address1	address2	city	pincode	state	baldue
1	c00001	ivan bayross	NULL	NULL	mumbai	400054	maharashtra	15000.00
2	c00002	sunil shah	NULL	NULL	pune	411001	maharashtra	12000.00
3	c00003	ravi kumar	NULL	NULL	hyderabad	500001	telangana	18000.00
4	c00004	anita joseph	NULL	NULL	chennai	600001	tamil nadu	9000.00
5	c00006	neha singh	NULL	NULL	jaipur	302001	rajasthan	8500.00
6	c00007	amit verma	NULL	NULL	indore	452001	madhya pradesh	10000.00
7	c00008	pooja nair	NULL	NULL	kochi	682001	kerala	7000.00
8	c00009	suresh patil	NULL	NULL	nagpur	440001	maharashtra	11000.00
9	c00010	kiran reddy	NULL	NULL	warangal	506002	telangana	9500.00

```sql
--Display the clients who stay in a city whose second letter is 'a'
select * from client_master
where city like '_a%';
```

Results | Messages

	clientno	name	address1	address2	city	pincode	state	baldue
1	c00006	neha singh	NULL	NULL	jaipur	302001	rajasthan	8500.00
2	c00009	suresh patil	NULL	NULL	nagpur	440001	maharashtra	11000.00
3	c00010	kiran reddy	NULL	NULL	warangal	506002	telangana	9500.00

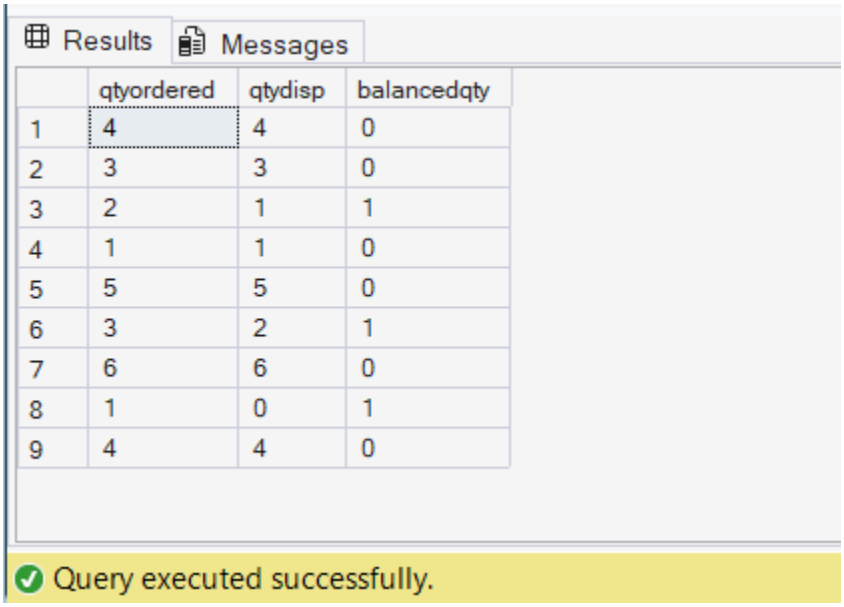
Query executed successfully.

```sql
--Count the number of products having price greater than or equal to
1500
select count(*) as total_products from product_master
where costprice>=1500;
```

Results | Messages

	total_products
1	1

```sql
--Display qtyordered, qtydisp and balancedqty (not in table)
select qtyordered,qtydisp,qtyordered-qtydisp as balancedqty
from sales_order_details;
```



Results | Messages

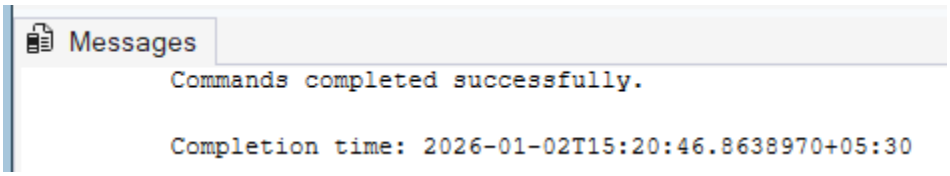
	qtyordered	qtydisp	balancedqty
1	4	4	0
2	3	3	0
3	2	1	1
4	1	1	0
5	5	5	0
6	3	2	1
7	6	6	0
8	1	0	1
9	4	4	0

Query executed successfully.

Write Commands to do following

```sql
--Make Client_no as primary key in client_master
clientno is already defined as the primary key of client_master.
No alter table command is required.
```

```sql
--Add a new column phone_no in the client_master table
alter table client_master
add phone_no varchar(10) not null default 'unknown';
```



Messages

```
Commands completed successfully.

Completion time: 2026-01-02T15:20:46.8638970+05:30
```

Results | Messages

	clientno	name	address1	address2	city	pincode	state	baldue	phone_no
1	c00001	ivan bayross	NULL	NULL	mumbai	400054	maharashtra	15000.00	unknown
2	c00002	sunil shah	NULL	NULL	pune	411001	maharashtra	12000.00	unknown
3	c00003	ravi kumar	NULL	NULL	hyderabad	500001	telangana	18000.00	unknown
4	c00004	anita joseph	NULL	NULL	chennai	600001	tamil nadu	9000.00	unknown
5	c00006	neha singh	NULL	NULL	jaipur	302001	rajasthan	8500.00	unknown
6	c00007	amit verma	NULL	NULL	indore	452001	madhya pradesh	10000.00	unknown
7	c00008	pooja nair	NULL	NULL	kochi	682001	kerala	7000.00	unknown
8	c00009	suresh patil	NULL	NULL	nagpur	440001	maharashtra	11000.00	unknown
9	c00010	kiran reddy	NULL	NULL	warangal	506002	telangana	9500.00	unknown

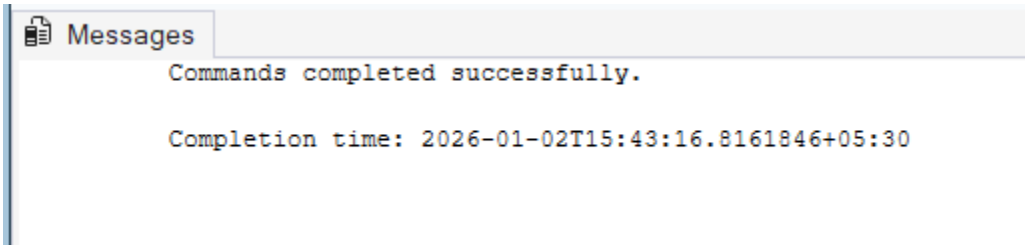
```
--Add the not null constraint in the product_master table with the
column description, profit percent, sell price and cost price
alter table product_master
alter column description varchar(15) not null;

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;
```

Messages

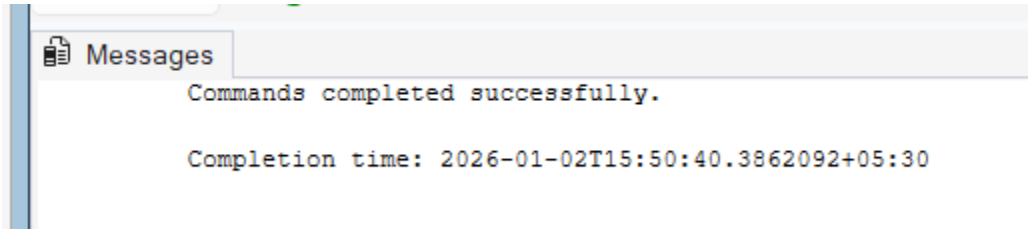
```
Commands completed successfully.

Completion time: 2026-01-02T15:39:15.7123681+05:30
```

- dbo.product_master
  - Columns
    - productno (PK, varchar(6), not null)
    - description (varchar(15), not null)
    - profitperc (decimal(4,2), not null)
    - unitsasure (varchar(10), not null)
    - qtyonhand (int, not null)
    - reorderlvl (int, not null)
    - sellprice (decimal(8,2), not null)
    - costprice (decimal(8,2), not null)

```sql
--Change size of name column to 60 in client_master table
alter table client_master
alter column name varchar(60);
```




```sql
--Remove pincode column from table
alter table client_master
drop column pincode;
```




```sql
select * from client_master
```

Results Messages

	clientno	name	address1	address2	city	state	baldue	phone_no
1	c00001	ivan bayross	NULL	NULL	mumbai	maharashtra	15000.00	unknown
2	c00002	sunil shah	NULL	NULL	pune	maharashtra	12000.00	unknown
3	c00003	ravi kumar	NULL	NULL	hyderabad	telangana	18000.00	unknown
4	c00004	anita joseph	NULL	NULL	chennai	tamil nadu	9000.00	unknown
5	c00006	neha singh	NULL	NULL	jaipur	rajasthan	8500.00	unknown
6	c00007	amit verma	NULL	NULL	indore	madhya pradesh	10000.00	unknown
7	c00008	pooja nair	NULL	NULL	kochi	kerala	7000.00	unknown
8	c00009	suresh patil	NULL	NULL	nagpur	maharashtra	11000.00	unknown
9	c00010	kiran reddy	NULL	NULL	warangal	telangana	9500.00	unknown

Define in 1 or 2 lines and give one example also

1. **Recursive Relationship**

   A recursive relationship is a relationship where an **entity is related to itself**, meaning records in the same table are connected to other records of that table.

Example:

In an **employee** table, an employee can be a **manager of another employee**, so both employee and manager belong to the same table.

emp_id	emp_name	manager_id
1	ramesh	null
2	suresh	1
3	anita	1
4	priya	2

2. **Composite key**

   A composite key is a **primary key made up of two or more columns** that together uniquely identify a record in a table

Example:

primary key (order_no, product_no)

Neither order_no nor product_no alone is unique

Together (order_no, product_no) uniquely identify each row → **composite key**

order_no	product_no	qty
o101	p01	5
o101	p02	3
o102	p01	2

3. The 'like' operator with pattern matching

The `like` operator is used in SQL to **search for a specified pattern in a column** using wildcard characters

Example:

```
select * from client_master

where city like '_a%';
```

4. Drop Table command

The `drop table` command is used to **permanently delete a table and all its data** from the database.

Example:

```
drop table Employee;
```

- The table structure and all records are removed
- This action **cannot be undone**

5. Full Outer Join

A **full outer join** returns **all records from both tables**, matching rows where possible and showing **NULLs where no match exists**.

Example:

Employee

emp_id	emp_name	dept_id
1	ramesh	10
2	suresh	20
3	anita	30

Department

dept_id	dept_name
10	hr
20	it
40	finance

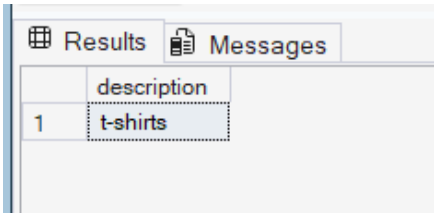
```
select e.emp_id, e.emp_name, d.dept_name

from employee e

full outer join department d

on e.dept_id = d.dept_id;
```

Result:

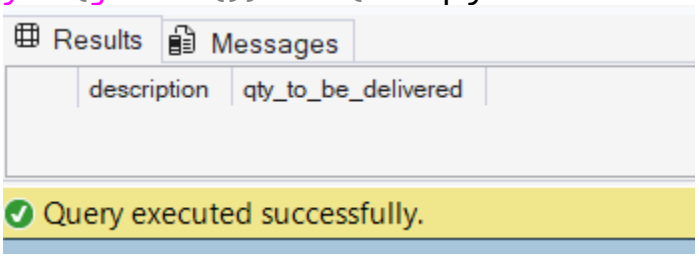
emp_id	emp_name	dept_name
1	ramesh	hr
2	suresh	it
3	anita	null
null	null	finance

JOINS

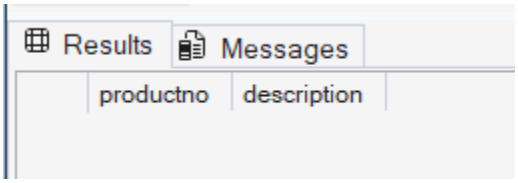
```
--Find out the products, which have been sold to 'Ivan Bayross'
select distinct p.description
from client_master c
join sales_order o on c.clientno = o.clientno
join sales_order_details sod on o.orderno = sod.orderno
join product_master p on sod.productno = p.productno
where c.name = 'ivan bayross';
```



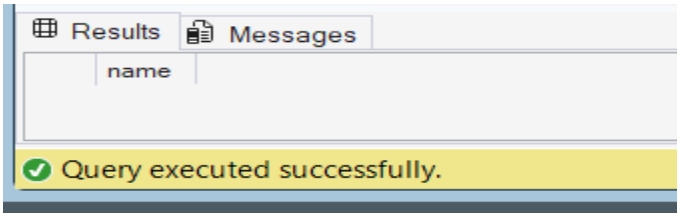

```
--Finding out the products and their quantities that will have to be
delivered in the current month
select p.description,(sod.qtyordered - sod.qtydisp) as
qty_to_be_delivered
from sales_order o
join sales_order_details sod on o.orderno = sod.orderno
join product_master p on sod.productno = p.productno
where month(o.delydate) = month(getdate()) and year(o.delydate) =
year(getdate()) and (sod.qtyordered - sod.qtydisp) > 0;
```



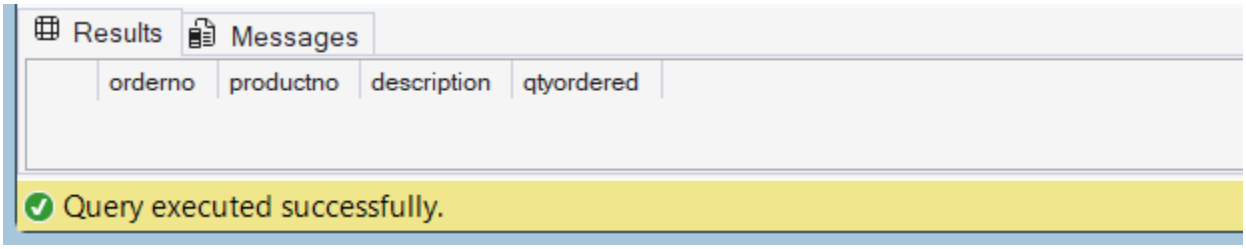
```sql
--Listing the ProductNo and description of constantly sold (i.e. rapidly
moving) products
select p.productno ,p.description from product_master p
join sales_order_details s on s.productno=p.productno
group by p.productno,p.description
having count(s.orderno)>1;
```




```sql
--Finding the names of clients who have purchased 'Trousers'
select distinct c.name from client_master c
join sales_order s on s.clientno=c.clientno
join sales_order_details sd on sd.orderno=s.orderno
join product_master p on p.productno=sd.productno
where p.description='Trousers'
```

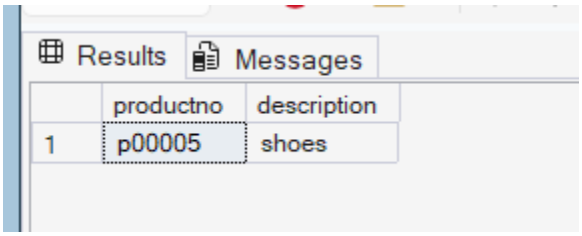



```sql
--Listing the products and orders from customers who have ordered less
than 5 units of 'Pull Overs'
select o.orderno, p.productno, p.description,sod.qtyordered from
sales_order o
join sales_order_details sod  on o.orderno = sod.orderno
join product_master p on sod.productno = p.productno
where p.description = 'pull overs' and sod.qtyordered < 5;
```



SUBQUERIES

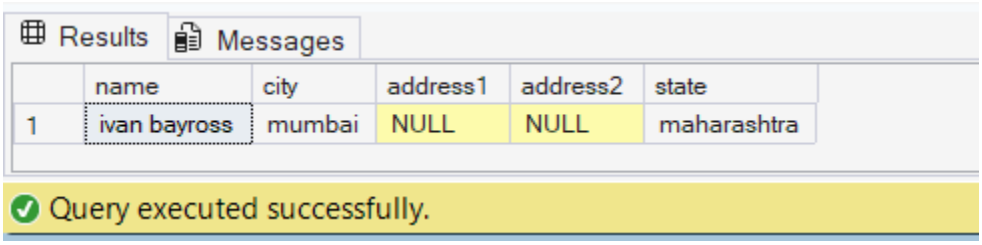
```
--Finding the non-moving products i.e. products not being sold
select productno, description from product_master
where productno not in (
    select productno
    from sales_order_details
);
```



Results | Messages

	productno	description
1	p00005	shoes

```
--Finding the name and complete address for the customer who has placed
Order number 'O19001'
select name,city,address1, address2,state from client_master
where clientno=(
     select clientno from sales_order
     where orderno='o19001'
);
```

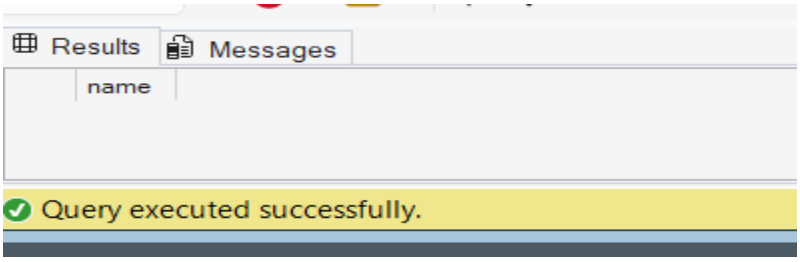


Results | Messages

	name	city	address1	address2	state
1	ivan bayross	mumbai	NULL	NULL	maharashtra

Query executed successfully.

```
--Finding the clients who have placed orders before the month of May'02
select name from client_master
where clientno=(
    select clientno from sales_order
    where orderdate<'2002-05-01'
);
```



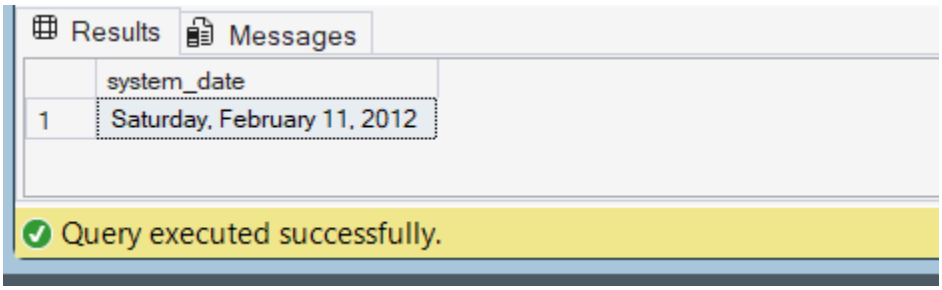
Results | Messages

	name

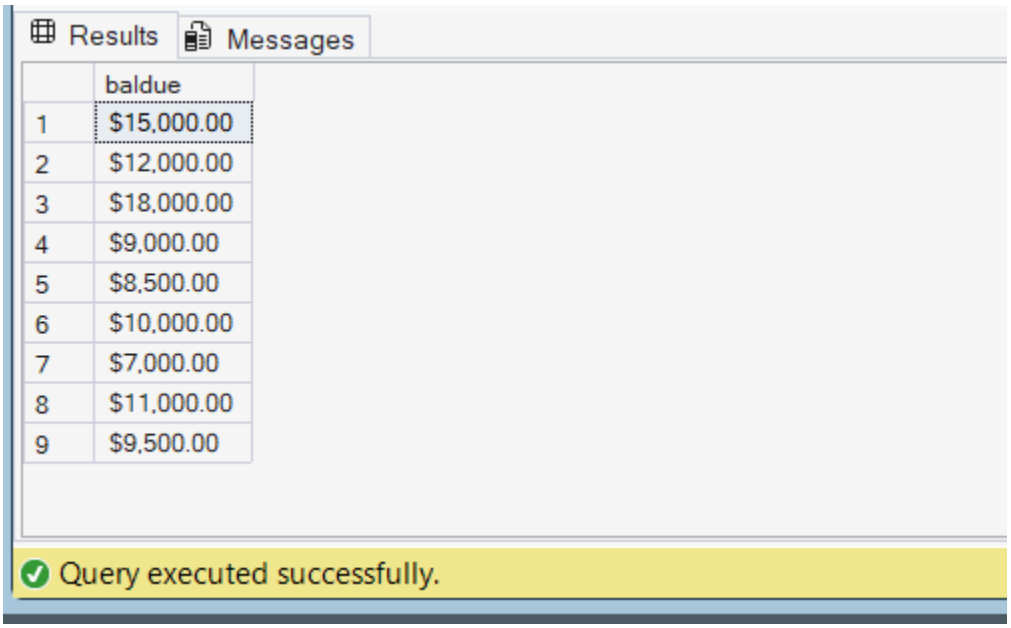
Query executed successfully.

Write Commands to do following

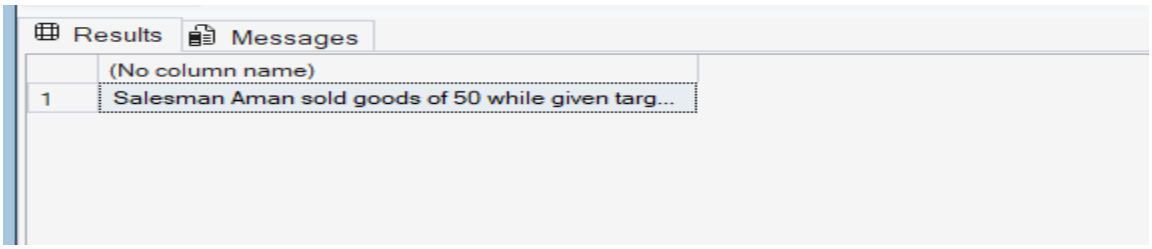
```
--Display system date as Saturday, February 11, 2012
select format(cast('2012-02-11' as date), 'dddd, MMMM dd, yyyy') as
system_date;
```



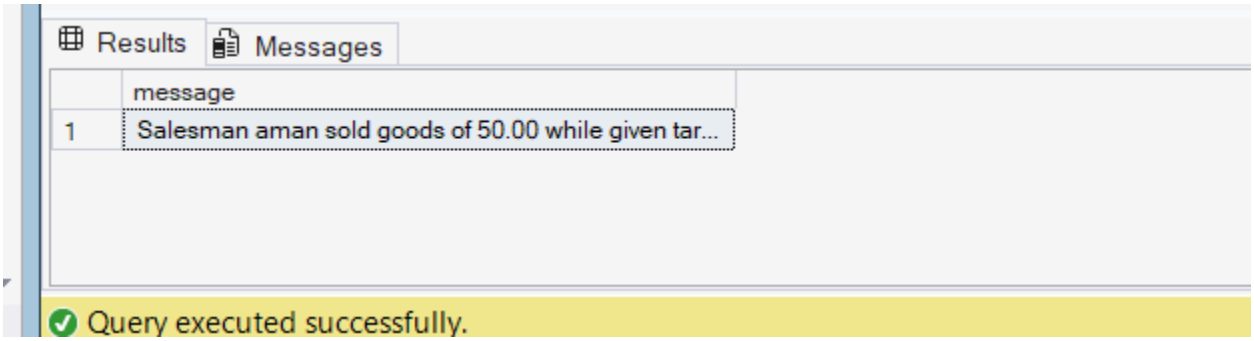

```
--Display Balance Due from Client master as $99,999.99
select format(baldue,'$#,##0.00') as baldue from client_master;
```




```
--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';
```




```sql
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';
```




```sql
--Display your Age in Years
select datediff(year,'2003-04-30',getdate()) as Age;
```