Week 1- Sql Commands

Creating database

Create database salesdb;

Create tables

Client_Master

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 decimal(8),

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 ,

unitmeasure varchar(10) not null,

qtyonhand decimal(8) not null,

reorderlvl decimal(8) 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(20) not null,

address1 varchar(30) not null,

address2 varchar(30),

city varchar(20),

pincode decimal(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));

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(10) check (orderstatus in ('In Process','Fulfilled','Backorder','Cancelled')),

constraint fk_client_master foreign key (ClientNo) references Client_Master(ClientNo),

constraint fk_salesman_master foreign key (Salesmanno) references Salesman_Master(SalesmanNo));

Sales_order_details

create table Sales_order_details(OrderNo varchar(6),

ProductNo varchar(6),

qtyordered decimal(8),

qtydisp decimal(8),

productrate decimal(10,2),

constraint fk_sales_order foreign key (OrderNo) references Sales_order(OrderNo),

constraint fk_product_master foreign key (ProductNo) references Product_Master(ProductNo),

constraint pk_key primary key (OrderNo,ProductNo));

Insering data

Client_Master

INSERT INTO Client_Master (ClientNo, name,address1, city, pincode, state, baldue) VALUES ('C00001', 'Ivan Bayross', NULL, 'Mumbai', 400054, 'Maharashtra', 15000),

('C00002','Ravi Kumar','Ameerpet','Hyderabad',500016,'Telangana',12000),

('C00003','Neha Sharma','Andheri West','Mumbai',400058,'Maharashtra',18000),

('C00004','Arjun Mehta','MG Road','Bangalore',560001,'Karnataka',9000),

('C00005','Arjun sharma','Ameerpet','Hyderabad',500016,'Telangana',32000),

('C00006','Anand','Bachupally','Hyderabad',500089,'Telangana',22000);

Product_Master

INSERT INTO Product_Master VALUES ('P00001', 'T-Shirts', 5, 'Piece', 200, 50, 350, 250),

('P00002','Pull Overs',8,'Piece',150,40,1200,900),

('P00003','Shirts',6,'Piece',180,60,800,600),

('P00004','Jackets',10,'Piece',100,30,2500,2000),

('P00005','1.44 drive',8,'Piece',150,40,1000,900),

('P00006','Trousers',8,'Piece',150,40,1200,900);

Salesman_Master

INSERT INTO Salesman_Master VALUES ('S00001', 'Aman', 'A/14', 'Worli', 'Mumbai', 400002, 'Maharashtra', 3000, 100, 50, 'Good'),

('S00002','Rahul','Banjara Hills',NULL,'Hyderabad',500034,'Telangana',4500,150,80,'Excellent'),

('S00003','Priya','Andheri East',NULL,'Mumbai',400069,'Maharashtra',4000,130,70,'Very Active'),

('S00004','Vikram','Indiranagar',NULL,'Bangalore',560038,'Karnataka',4800,160,90,'Top Performer');

Sales_order

INSERT INTO Sales_Order (OrderNo, orderdate, ClientNo, delytype, billedyn, SalesmanNo, delydate, orderstatus)

VALUES('O19001', '12-june-02', 'C00001', 'F', 'N', 'S00001', '20-july-02', 'In Process'),

('O19002','C00002','2022-06-15','Hyderabad','S00002','P','N','2022-06-22','In Process'),

('O19003','C00003','2022-06-18','Mumbai','S00003','F','Y','2022-06-25','Fulfilled'),

('O19004','C00004','2022-06-20','Bangalore','S00004','P','N','2022-06-28','Backorder')

('O19005','C00004','2026-01-01','Hyderabad','S00002','P','N','2026-01-04','In Process'),

('O19006','C00003','2025-12-31','Mumbai','S00003','F','Y','2026-01-05','Fulfilled');

Sales_order_details

INSERT INTO Sales_Order_Details

VALUES ('O19001', 'P00001', 4, 4, 525),

('O19002','P00002',3,2,1200),

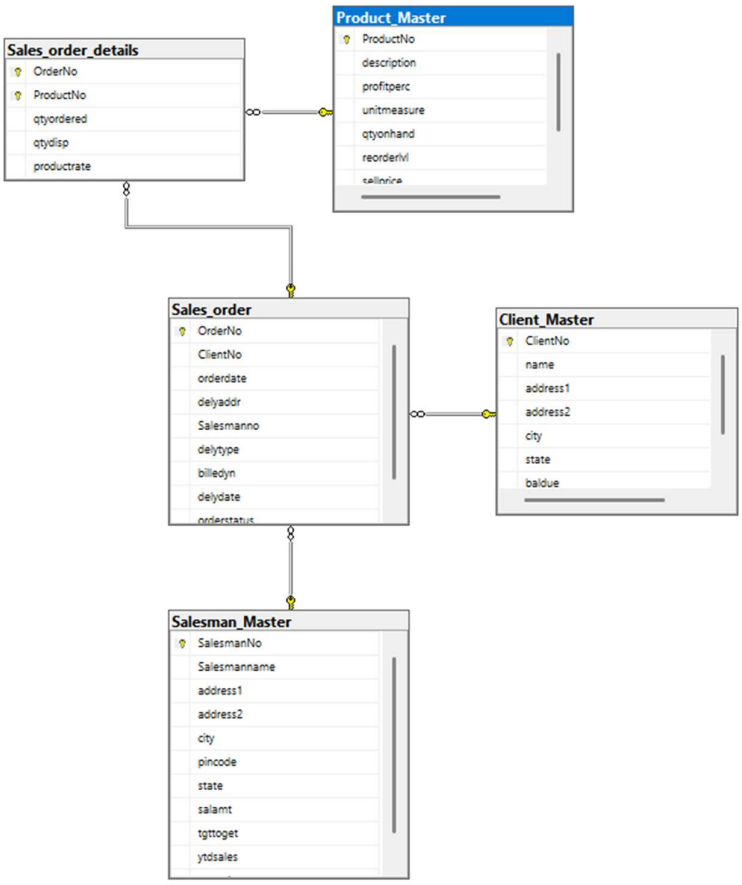
('O19003','P00003',5,5,800),

('O19004','P00004',2,1,2500)

('O19005','P00006',5,5,1200),

('O19006','P00006',2,1,1200);

ER diagram



Queries

1. Display the names of all the clients.

select name from Client_Master;

	name
1	Ivan Bayross
2	Ravi Kumar
3	Neha Sharma
4	Arjun Mehta
5	Anand

2. Display all the clients who are located in Mumbai.

select name from Client_Master where city='Mumbai';

	name
1	Ivan Bayross
2	Neha Sharma

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

select * from Product_Master where sellprice>2000 and sellprice<5000;

	ProductNo	description	profitperc	unitmeasure	qtyonhand	reorderlvl	sellprice	costprice
1	P00004	Jackets	10.00	Piece	100	30	2500.00	2000.00

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

select name,city,state from Client_Master where state !='Maharashtra';

	name	city	state
1	Ravi Kumar	Hyderabad	Telangana
2	Arjun Mehta	Bangalore	Karnataka
3	Anand	Hyderabad	Telangana

5. Display all the information of client_no C0001 and C0002.

select * from Client_Master where ClientNo in ('C00001','C00002');

	ClientNo	name	address1	address2	city	pincode	state	baldue
1	C00001	Ivan Bayross	NULL	NULL	Mumbai	400054	Maharashtra	15000.00
2	C00002	Ravi Kumar	Ameerpet	NULL	Hyderabad	500016	Telangana	12000.00

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

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

7. Delete the record of client_no C00005.

delete Client_Master where ClientNo='C00005';

8. 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	C00004	Arjun Mehta	MG Road	NULL	Bangalore	560001	Karnataka	9000.00

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

select count(*) from Product_Master where sellprice >=1500;

	(No column name)
1	1

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

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

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

11. Make Client_no as primary key in client_master.

alter table Client_Master add constraint pk_key primary key (ClientNo);

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

alter table Client_Master add phone_no varchar(15);

13. 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;

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

alter table Client_Master alter column name varchar(60);

15 Remove pincode column from table.

alter table Client_Master drop column pincode;

Define in 1 or 2 lines and give one example also

1. Recursive Relationship.

Recursive Relationship can be defined as a table consisting a foreign key which refers to its own primary key and this relationship is known as recursive relationship .

Example: employee(empid, name, managerid) , here managerid refers to empid of same table

2. Composite key.

A composite key is a primary key made up of two or more columns.
Example: Primary key (OrderNo, ProductNo) in the table of sales order details

3. The 'like' operator with pattern matching.

A like operator is used to search or filter data using wildcards and also used for pattern matching.

Example: select * from Client_Master where city like '_a%' , this statement retrevies clients data who are staying in a city whose 2nd letter is a.

4. Drop Table command.

Drop table command is a ddl command and used to permanently delete a table from the database.

Example: Drop table Sales_order

5. Full Outer Join.

A full outer join returns all records from both tables, even condition matches or not and it gives null values to unmatched columns or data.

Example: select * from Hr

full outer join payroll ON hr.id = payroll.id;

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

```
select Product_Master.description from Product_Master join Sales_order_details
on Product_Master.ProductNo=Sales_order_details.ProductNo
join Sales_order on Sales_order.OrderNo=Sales_order_details.OrderNo
join Client_Master on Client_Master.ClientNo=Sales_order.ClientNo where Client_Master.name='Ivan
Bayross';
```

	description
1	T-Shirts

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

```
select Product_Master.description,Sales_order_details.qtyordered from Product_Master join
Sales_order_details  on Product_Master.ProductNo=Sales_order_details.ProductNo
join Sales_order on Sales_order.OrderNo=Sales_order_details.OrderNo
where month(Sales_order.delydate) = month(getdate());
```

	description	qtyordered
1	Trousers	5
2	Trousers	2

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

```
select Product_Master.ProductNo,Product_Master.description from Product_Master
join Sales_order_details on Product_Master.ProductNo=Sales_order_details.ProductNo
group by Product_Master.ProductNo,Product_Master.description having
count(Sales_order_details.OrderNo)>1;
```

	ProductNo	description
1	P00006	Trousers

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

```
select Client_Master.name from Product_Master join Sales_order_details
on Product_Master.ProductNo=Sales_order_details.ProductNo
join Sales_order on Sales_order.OrderNo=Sales_order_details.OrderNo
```

```
join Client_Master on Client_Master.ClientNo=Sales_order.ClientNo where
Product_Master.description='Trousers';
```

	name
1	Arjun Mehta
2	Neha Sharma

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

```
select Sales_order.OrderNo,Sales_order.ClientNo,Sales_order_details.ProductNo,
Product_Master.description ,Sales_order_details.qtyordered from Sales_order join
Sales_order_details on Sales_order.OrderNo=Sales_order_details.OrderNo
join Product_Master on Product_Master.ProductNo=Sales_order_details.ProductNo
where Sales_order.ClientNo in
(select Sales_order.ClientNo from Sales_Order join Sales_Order_Details
on Sales_order.OrderNo = Sales_order_details.OrderNo
join Product_Master on Sales_order_details.ProductNo = Product_Master.ProductNo
where Product_Master.description = 'Pull Overs'
group by Sales_order.ClientNo
having sum(Sales_order_details.qtyordered) < 5
);
```

	OrderNo	ClientNo	ProductNo	description	qtyordered
1	O19002	C00002	P00002	Pull Overs	3

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

```
select * from Product_Master  where ProductNo not in (select ProductNo from
Sales_order_details);
```

	ProductNo	description	profitperc	unitmeasure	qtyonhand	reorderlvl	sellprice	costprice
1	P00005	1.44 drive	8.00	Piece	150	40	1150.50	900.00

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

```
select name,city,state from Client_Master

where ClientNo = (select ClientNo from Sales_order where OrderNo= 'O19001');
```

	name	city	state
1	Ivan Bayross	Mumbai	Maharashtra

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

select * from Client_Master where ClientNo in

(select ClientNo from Sales_order where orderdate <'2023-05-02');

	ClientNo	name	address1	address2	city	state	baldue	phone_no
1	C00001	Ivan Bayross	NULL	NULL	Mumbai	Maharashtra	15000.00	NULL
2	C00002	Ravi Kumar	Ameerpet	NULL	Hyderabad	Telangana	12000.00	NULL
3	C00003	Neha Sharma	Andheri West	NULL	Mumbai	Maharashtra	18000.00	NULL
4	C00004	Arjun Mehta	MG Road	NULL	Bangalore	Karnataka	9000.00	NULL

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

select format(convert(date,'2012-02-11'),'dddd, MMMM dd,yyyy') as system_date;

	system_date
1	Saturday, February 11,2012

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

select ClientNo,name,address1,address2,city,state,

concat('$',convert(varchar,cast(99999.99 as money),1)) as bal_due

from Client_Master;

	ClientNo	name	address1	address2	city	state	bal_due
1	C00001	Ivan Bayross	NULL	NULL	Mumbai	Maharashtra	$99,999.99
2	C00002	Ravi Kumar	Ameerpet	NULL	Hyderabad	Telangana	$99,999.99
3	C00003	Neha Sharma	Andheri West	NULL	Mumbai	Maharashtra	$99,999.99
4	C00004	Arjun Mehta	MG Road	NULL	Bangalore	Karnataka	$99,999.99
5	C00006	Anand	Bachupally	NULL	Hyderabad	Telangana	$99,999.99

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

select concat('Salesman ',Salesmanname,' sold goods of ',cast(ytdsales as int),' while given target was ',cast(tgttoget as int),'.') from Salesman_Master where Salesmanname='Aman';

	(No column name)
1	Salesman Aman sold goods of 50 while given target was 100.

27 Display your Age in Years.

select (year(getdate())-year('2005-03-15')) as My_age;

	My_age
1	21