```sql
create database insuranceDB;
```

Customer Table Creation

```sql
create table customers(

CustomerID int PRIMARY KEY NOT NULL,

FirstName varchar(20),

LastName varchar(20),

DateOfBirth date,

Phone int,

Email varchar(20)

);
```

Policies Table Creation

```sql
create table Policies(

PolicyID int primary key NOT NULL,

PolicyName varchar(20),

PolicyType varchar(20),

PremiumAmount money,

DurationYears int

);
```

Agents Table Creation

```sql
create table Agents(

AgentID int PRIMARY KEY NOT NULL,

AgentName varchar(20),

Phone varchar(20) ,

City Varchar(20)

);
```

PolicyAssignments Table Creation

```sql
create table PolicyAssignments(

AssignmentID INT PRIMARY KEY NOT NULL,

CustomerID int FOREIGN KEY REFERENCES customers(CustomerID),

PolicyID int FOREIGN KEY REFERENCES Policies(PolicyID),
```

AgentID int FOREIGN KEY REFERENCES Agents(AgentID),

StartDate date,

EndDate date

);

Claims Table Creation

create table Claims(

ClaimID int PRIMARY KEY NOT NULL ,

AssignmentID int,

ClaimDate date,

ClaimAmount money,

ClaimStatus varchar(20)

);

alter table Claims add constraint FK_policyAssignment FOREIGN KEY (AssignmentID) REFERENCES PolicyAssignments(AssignmentID);

Inserting Values into Customers

insert into customers values(1,'John','Smith','1998-09-1',9087654321,'john@gmail.com');

insert into customers values(2,'Alice','Josh','2000-2-10',9123456780,'alice@gmail.com');

insert into customers values(3,'Krish','Kumar','1999-3-12',8765432190,'krishkumar@gmail.com');

insert into customers values(4,'Sai','Kumar','1996-08-10',8008870875,'sai@gmail.com');

insert into customers values(5,'Sri','Priya','1995-09-25',9432156780,'priya@gmail.com');

insert into customers values(6,'Krishna','sai','2004-10-12',7890654321,'krishna@gamil.com');

insert into customers values(7,'Ram','Kranthi','2004-09-21','9543216780','ram@gmail.com');

Inserting Values into Policies

insert into Policies values(101,'Health plus','Health',65000,15);

insert into Policies values(102,'Life Secure','Life',80000,10);

insert into Policies values(103,'Home Sheild','Property',45000,15);

insert into Policies values(104,'Car Protect','Vehicle',15000,5);

insert into Policies values(105,'Travel Safe','Travel',25000,4);

insert into Policies values(106,'Truck Protect','vechicle',15000,1);

Inserting values into Agents

insert into Agents values(1,'Ravi',9812345690,'Hyderabad');

insert into Agents values(2,'Sreshta',7890654321,'Chennai');

insert into Agents values(3,'Ritika',9123456780,'Pune');

insert into Agents values(4,'Bhanu',8790654321,'Mumbai');

insert into Agents values(5,'Anikha',8123456790,'Banglore');

insert into Agents values(6,'Ankith',6789054321,'Karimnagar');

Inserting values into PolicyAssignments

insert into PolicyAssignments values(1,1,101,1,'2024-01-01','2039-01-01');

insert into PolicyAssignments values(2,2,102,2,'2025-02-01','2030-12-31');

insert into PolicyAssignments values(3,3,103,3,'2023-01-01','2026-01-01');

insert into PolicyAssignments values(4,4,104,4,'2022-01-30','2030-12-31');

insert into PolicyAssignments values(5,5,105,5,'2020-02-01','2035-01-01');

insert into PolicyAssignments values(6,6,106,6,'2024-01-01','2025-01-01');

Inserting Values into Claims

insert into Claims values(1, 1, '2025-01-10', 15000, 'Pending');

insert into Claims values(2, 1, '2025-02-15', 8000, 'Approved');

insert into Claims values(3, 2, '2025-03-05', 12000, 'Rejected');

insert into Claims values(4, 2, '2025-03-05', 20000, 'Approved');

insert into Claims values(5, 3, '2025-06-05', 20000, 'Pending');

insert into Claims values(6, 3, '2025-06-29', 25000, 'Approved');

1. View all records Customers table.

select * from customers;

	CustomerID	FirstName	LastName	DateOfBirth	Phone	Email
1	1	John	Smith	1998-09-01	9087654321	john@gmail.com
2	2	Alice	Josh	2000-02-10	9123456780	alice@gmail.com
3	3	Krish	Kumar	1999-03-12	8765432190	krishkumar@gmail.com
4	4	Sai	Kumar	1996-08-10	8008870875	sai@gmail.com
5	5	Sri	Priya	1995-09-25	9432156780	priya@gmail.com
6	6	Krishna	Sai	2004-10-12	6789054321	krishna@gmail.com
7	7	Ram	Kranthi	2004-09-21	9543216780	ram@gmail.com

2. View all records of PolicyAssignment table with CustomerId, PolicyId, StartDate and EndDate columns only.

select CustomerID, PolicyId, StartDate, EndDate from PolicyAssignments;

	CustomerID	PolicyId	StartDate	EndDate
1	1	101	2024-01-01	2039-01-01
2	2	102	2025-02-01	2030-12-31
3	3	103	2023-01-01	2026-01-01
4	4	104	2022-01-30	2030-12-31
5	5	105	2020-02-01	2035-01-01
6	6	106	2024-01-01	2025-01-01

3. Display all policies of Health type.

select * from Policies where PolicyType='Health';

	PolicyID	PolicyName	PolicyType	PremiumAmount	DurationYears
1	101	Health plus	Health	65000.00	15

4. Display policies having premium amount more than 10000 and DurationYears is 1.

select * from Policies where PremiumAmount>10000 and DurationYears=1;

	PolicyID	PolicyName	PolicyType	PremiumAmount	DurationYears
1	106	Truck Protect	vechicle	15000.00	1

5. Display unique city names from where agents belong to.

select distinct(city) from Agents ;

	city
1	Banglore
2	Chennai
3	Hyderabad
4	Mumbai
5	Pune

6. List policies of type Life, Health, Motor use OR clause.

select * from Policies where PolicyType='Life' or PolicyType='Health' or PolicyType='Motor';

	PolicyID	PolicyName	PolicyType	PremiumAmount	DurationYears
1	101	Health plus	Health	65000.00	15
2	102	Life Secure	Life	80000.00	10

7. List policies of type Life, Health, Motor use IN operator.

select * from Policies where PolicyType in ('Life','Health','Motor');

	PolicyID	PolicyName	PolicyType	PremiumAmount	DurationYears
1	101	Health plus	Health	65000.00	15
2	102	Life Secure	Life	80000.00	10

8. Display list of customers born after January 1 st , 2001 and before December 31 st , 2020 using >= and <= operators.

select * from customers where DateOfBirth>='2001-01-01' and DateOfBirth<='2020-12-31';

	CustomerID	FirstName	LastName	DateOfBirth	Phone	Email
1	6	Krishna	Sai	2004-10-12	6789054321	krishna@gmail.com
2	7	Ram	Kranthi	2004-09-21	9543216780	ram@gmail.com

9. Display list of customers born after January 1 st , 2001 and before December 31 st , 2020 using between operator.

select * from customers where DateOfBirth between '2001-01-01' and '2020-12-31';

	CustomerID	FirstName	LastName	DateOfBirth	Phone	Email
1	6	Krishna	Sai	2004-10-12	6789054321	krishna@gmail.com
2	7	Ram	Kranthi	2004-09-21	9543216780	ram@gmail.com

10. Display claims data where claim status is Rejected.

select * from Claims where ClaimStatus='Rejected';

	ClaimID	AssignmentID	ClaimDate	ClaimAmount	ClaimStatus
1	3	2	2025-03-05	12000.00	Rejected

11. Display records of Agents who stay in a city whose second letter is 'a'.

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

	AgentID	AgentName	Phone	City
1	5	Anikha	8123456790	Banglore

12. Display highest and lowest claimAmount from Claims table.

select max(ClaimAmount) as highest_claimAmount,min(ClaimAmount) as lowest_claimAmount from Claims;

	highest_claimAmount	lowest_claimAmount
1	25000.00	8000.00

13. Display latest claim record.

select * from Claims where ClaimDate=(select max(ClaimDate) from Claims);

	ClaimID	AssignmentID	ClaimDate	ClaimAmount	ClaimStatus
1	6	3	2025-06-29	25000.00	Approved

14. Increase premium amount to 10% for all health insurance policies.

update Policies set PremiumAmount=PremiumAmount*1.10 where PolicyType='Health';

select * from Policies;

	PolicyID	PolicyName	PolicyType	PremiumAmount	DurationYears
1	101	Health plus	Health	71500.00	15
2	102	Life Secure	Life	80000.00	10
3	103	Home Sheild	Property	45000.00	15
4	104	Car Protect	Vehicle	15000.00	5
5	105	Travel Safe	Travel	25000.00	4
6	106	Truck Protect	vechicle	15000.00	1

15. Delete the record of PolicyAssignments whose EndDate is before today's date.

delete from PolicyAssignments where EndDate<GETDATE();

select * from PolicyAssignments;

	AssignmentID	CustomerID	PolicyID	AgentID	StartDate	EndDate
1	1	1	101	1	2024-01-01	2039-01-01
2	2	2	102	2	2025-02-01	2030-12-31
3	3	3	103	3	2023-01-01	2026-01-01
4	4	4	104	4	2022-01-30	2030-12-31
5	5	5	105	5	2020-02-01	2035-01-01

16. Display no of claims rejected.

select count(ClaimID) as claims_rejected from Claims where ClaimStatus='Rejected';

	claims_rejected
1	1

17. Display PolicyId, PolicyName, PremiumAmount along with computed fields not in table à 6% LocalTaxes, PremiumAmountWithTax and MonthlyPremiumAmount considering PremiumAmount is Annual.

select PolicyID,PolicyName,PremiumAmount,PremiumAmount*0.06 as LocalTaxes, PremiumAmount+(PremiumAmount*0.06) as PremiumAmountWithTax, PremiumAmount/12 as MonthlyPremiumAmount from Policies ;

	PolicyID	PolicyName	PremiumAMount	LocalTaxes	PremiumAmountWithTax	MonthlyPremiumAmount
1	101	Health plus	71500.00	4290.000000	75790.000000	5958.3333
2	102	Life Secure	80000.00	4800.000000	84800.000000	6666.6666
3	103	Home Sheild	45000.00	2700.000000	47700.000000	3750.00
4	104	Car Protect	15000.00	900.000000	15900.000000	1250.00
5	105	Travel Safe	25000.00	1500.000000	26500.000000	2083.3333
6	106	Truck Protect	15000.00	900.000000	15900.000000	1250.00

18. Write a command to add Address and City Columns in the Customers table.

alter table customers add Address varchar(30),City varchar(30);

select * from customers;

	CustomerID	FirstName	LastName	DateOfBirth	Phone	Email	Address	City
1	1	John	Smith	1998-09-01	9087654321	john@gmail.com	NULL	NULL
2	2	Alice	Josh	2000-02-10	9123456780	alice@gmail.com	NULL	NULL
3	3	Krish	Kumar	1999-03-12	8765432190	krishkumar@gmail.com	NULL	NULL
4	4	Sai	Kumar	1996-08-10	8008870875	sai@gmail.com	NULL	NULL
5	5	Sri	Priya	1995-09-25	9432156780	priya@gmail.com	NULL	NULL
6	6	Krishna	Sai	2004-10-12	6789054321	krishna@gmail.com	NULL	NULL
7	7	Ram	Kranthi	2004-09-21	9543216780	ram@gmail.com	NULL	NULL

19. Write a command to add a new column named DevOfId (DevelopmentOfficerId) in an existing Agents table.

alter table Agents add DevOfId int;

select * from Agents;

	AgentID	AgentName	Phone	City	DevOfId
1	1	Ravi	9812345690	Hyderabad	NULL
2	2	Sreshta	7890654321	Chennai	NULL
3	3	Ritika	9123456780	Pune	NULL
4	4	Bhanu	8790654321	Mumbai	NULL
5	5	Anikha	8123456790	Banglore	NULL
6	6	Ankith	6789054321	Karimnagar	NULL

20. Write command to make the above DevOfId as a recursive foreign key to AgentId as Parent.

alter table Agents add Constraint Fk_Agents_DevOfficer FOREIGN KEY(DevOfId) REFERENCES Agents(AgentID);

Queries using Joins, Group By, Having etc.

1. List all Policies for a CustomerId 5.

select p.PolicyName from Policies p join PolicyAssignments pa ON pa.PolicyID = p.PolicyID where pa.CustomerID = 5;

	PolicyName
1	Travel Safe

2. View all customers with their policies.

select c.CustomerID,c.FirstName,c.LastName,p.PolicyName from customers c join PolicyAssignments pa on pa.CustomerID=c.CustomerID join Policies p on pa.PolicyID=p.PolicyID;

	CustomerID	FirstName	LastName	PolicyName
1	1	John	Smith	Health plus
2	2	Alice	Josh	Life Secure
3	3	Krish	Kumar	Home Sheild
4	4	Sai	Kumar	Car Protect
5	5	Sri	Priya	Travel Safe
6	6	Krishna	Sai	Truck Protect

3. View claims with customer name.

select c.FirstName+' '+c.LastName as customer_name,cl.ClaimID,cl.ClaimDate,cl.ClaimAmount,cl.ClaimStatus from Claims cl join PolicyAssignments pa on pa.AssignmentID=cl.AssignmentID join customers c on pa.CustomerID=c.CustomerID;

	customer_name	ClaimID	ClaimDate	ClaimAmount	ClaimStatus
1	John Smith	1	2025-01-10	15000.00	Pending
2	John Smith	2	2025-02-15	8000.00	Approved
3	Alice Josh	3	2025-03-05	12000.00	Rejected
4	Alice Josh	4	2025-03-05	20000.00	Approved
5	Krish Kumar	5	2025-06-05	20000.00	Pending
6	Krish Kumar	6	2025-06-29	25000.00	Approved

4. Display FirstName, PolicyName, AgentName, StartDate and EndDate from their respective tables.

select c.Firstname,p.PolicyName,a.AgentName,pa.StartDate,pa.EndDate from customers c

join PolicyAssignments pa on pa.CustomerID=c.CustomerID

join Policies p on pa.PolicyID=p.PolicyID

join Agents a on pa.AgentID=a.AgentID ;

	Firstname	PolicyName	AgentName	StartDate	EndDate
1	John	Health plus	Ravi	2024-01-01	2039-01-01
2	Alice	Life Secure	Sreshta	2025-02-01	2030-12-31
3	Krish	Home Sheild	Ritika	2023-01-01	2026-01-01
4	Sai	Car Protect	Bhanu	2022-01-30	2030-12-31
5	Sri	Travel Safe	Anikha	2020-02-01	2035-01-01
6	Krishna	Truck Protect	Ankith	2024-01-01	2025-01-01

5. Display claims report with FirstName, PolicyName, ClaimAmount, ClaimStatus, and ClaimDate from their respective tables.

select c.FirstName ,p.PolicyName,cl.ClaimAmount,cl.ClaimStatus,cl.ClaimDate from Claims cl join PolicyAssignments pa on pa.AssignmentID=cl.AssignmentID join Policies p on pa.PolicyID=p.PolicyID join customers c on pa.CustomerID=c.CustomerID;

	FirstName	PolicyName	ClaimAmount	ClaimStatus	ClaimDate
1	John	Health plus	15000.00	Pending	2025-01-10
2	John	Health plus	8000.00	Approved	2025-02-15
3	Alice	Life Secure	12000.00	Rejected	2025-03-05
4	Alice	Life Secure	20000.00	Approved	2025-03-05
5	Krish	Home Sheild	20000.00	Pending	2025-06-05
6	Krish	Home Sheild	25000.00	Approved	2025-06-29

6. Display records of Customers with or without Policies.

select c.CustomerID , c.FirstName , c.LastName , p.PolicyName from customers c left join
PolicyAssignments pa on pa.CustomerID=c.CustomerID left join Policies p on pa.PolicyID=p.PolicyID;

	CustomerID	FirstName	LastName	PolicyName
1	1	John	Smith	Health plus
2	2	Alice	Josh	Life Secure
3	3	Krish	Kumar	Home Sheild
4	4	Sai	Kumar	Car Protect
5	5	Sri	Priya	Travel Safe
6	6	Krishna	Sai	Truck Protect
7	7	Ram	Kranthi	NULL

7. Display all Customers with NO Claims.

select distinct c.CustomerID, c.FirstName,c.LastName,cl.ClaimID from customers c left join
PolicyAssignments pa on pa.CustomerID=c.CustomerID left join Claims cl on
pa.AssignmentID=cl.AssignmentID where pa.CustomerID is null;

	CustomerID	FirstName	LastName	ClaimID
1	7	Ram	Kranthi	NULL

8. Show CustomerName with Total Claim Amount per Customer.

select c.FirstName,c.LastName ,sum(cl.ClaimAmount) as total_claimAmount from customers c join
PolicyAssignments pa on pa.CustomerID=c.CustomerID join Claims cl on
cl.AssignmentID=pa.AssignmentID group by c.FirstName,c.LastName;

	FirstName	LastName	total_claimAmount
1	Alice	Josh	32000.00
2	Krish	Kumar	45000.00
3	John	Smith	23000.00

9. Show names and total claim amount of Customers With Claim Amount > 5000 (Use HAVING Clause).

select c.FirstName,c.LastName ,sum(cl.ClaimAmount) as total_claimAmount from customers c join
PolicyAssignments pa on pa.CustomerID=c.CustomerID join Claims cl on
cl.AssignmentID=pa.AssignmentID group by c.FirstName,c.LastName having
sum(ClaimAmount)>5000;

	FirstName	LastName	total_claimAmount
1	Alice	Josh	32000.00
2	Krish	Kumar	45000.00
3	John	Smith	23000.00

10. Display list with Agent Wise Policy Count.

select a.AgentID,a.AgentName,count(pa.PolicyID) as policy_count from Agents a join PolicyAssignments pa on pa.AgentID=a.AgentID group by a.AgentID,a.AgentName;

	AgentID	AgentName	policy_count
1	1	Ravi	1
2	2	Sreshta	1
3	3	Ritika	1
4	4	Bhanu	1
5	5	Anikha	1
6	6	Ankith	1