Date: 29/12/2025 Gurumetkal Bharath Simha Reddy

Day 2 – Querying &Modifying Data

1. Create Database command.

```
create database insuranceDB;
```

2. Create table commands for all the tables with constraints, relationships etc.

```
create table Customers(CustomerID int identity primary key,FirstName varchar(30) not null,LastName varchar(30) not null,DateOfBirth date,Phone varchar(20) not null,Email varchar(20) not null unique);

create table Policies(PolicyID int identity primary key,PolicyName varchar(30) not null,PolicyType varchar(30) not null,PremiumAmount money not null,DurationYears int not null);


create table Agents(AgentID int identity primary key,AgentName varchar(30) not null,Phone varchar(20) not null,City varchar(20) not null);

create table PolicyAssignments(AssignmentID int primary key,CustomerID int not null,PolicyID int not null,AgentID int,StartDate date not null,EndDate date not null,CONSTRAINT FK_PA_Customers
 FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID),
 CONSTRAINT FK_PA_Policies
 FOREIGN KEY (PolicyID) REFERENCES Policies(PolicyID),
 CONSTRAINT FK_PA_Agents
 FOREIGN KEY (AgentID) REFERENCES Agents(AgentID));


create table Claims(ClaimID int identity primary key,AssignmentID int not null,ClaimDate date not null,ClaimAmount decimal(10,2) not null,ClaimStatus varchar(20) not null,constraint FK_Claims foreign key (AssignmentID) references PolicyAssignments(AssignmentID));
```

3. Insert commands for all tables.

```
INSERT INTO Customers (FirstName, LastName, DateOfBirth, Phone, Email) VALUES
('Bharath','Gurumetkal','2003-10-05','9566225566','bharath@gmail.com'),
('abhi','ram','2004-09-05','6655225566','abhi@gmail.com'),
('sai','sesh','2001-05-22','8899669966','sai@gmail.com'),
('harshini','gupta','2005-06-06','9566225566','harsh@gmail.com');


INSERT INTO Policies (PolicyName, PolicyType, PremiumAmount, DurationYears) VALUES
('Health Secure','Health',10000.00,1),
('Life Secure','Life',25000.00,2),
('Child Future','Education',12000.00,3),
('Retirement Plus','Pension',30000.00,1),
('Home Safety','Property',20000.00,2);

INSERT INTO Agents (AgentName, Phone, City) VALUES
('Rahul', '9876543210', 'Delhi'),
('sai','9123456780','Mumbai'),
('Ram','8933456780','Pune'),
('Shyam','6655889900','Hyderabad')

INSERT INTO PolicyAssignments VALUES
(1, 1, 1, 1, '2023-01-01', '2024-01-01'),
(2, 2, 2, 2, '2023-03-15', '2025-03-14'),
(3, 3, 3, 1, '2022-06-01', '2025-05-31');

INSERT INTO Claims (AssignmentID, ClaimDate, ClaimAmount, ClaimStatus) VALUES
(1, '2023-06-10', 5000.00, 'Approved'),
```

```
(2, '2024-01-05', 8000.00, 'Pending'),
(3, '2023-11-20', 3000.00, 'Rejected');
```

4. Select commands

1. View all records Customers table.

```
select * from Customers;
```

Results | Messages

	CustomerID	FirstName	LastName	DateOfBirth	Phone	Email
1	1	Bharath	Gurumetkal	2003-10-05	9566225566	bharath@gmail.com
2	2	abhi	ram	2004-09-05	6655225566	abhi@gmail.com
3	3	sai	sesh	2001-05-22	8899669966	sai@gmail.com
4	4	harshini	gupta	2005-06-06	9566225566	harsh@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	1	2023-01-01	2024-01-01
2	2	2	2023-03-15	2025-03-14
3	3	3	2022-06-01	2025-05-31

3. Display all policies of Health type.

```
select * from Policies where PolicyType='Health';
```

	PolicyID	PolicyName	PolicyType	PremiumAmount	DurationYears
1	1	Health Secure	Health	10000.00	1

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	4	Retirement Plus	Pension	30000.00	1

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

```
select distinct City from Agents;
```

	City
1	Delhi
2	Hyderabad
3	Mumbai
4	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	1	Health Secure	Health	10000.00	1
2	2	Life Secure	Life	25000.00	2

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	1	Health Secure	Health	10000.00	1
2	2	Life Secure	Life	25000.00	2

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	1	Bharath	Gurumetkal	2003-10-05	9566225566	bharath@gmail.com
2	2	abhi	ram	2004-09-05	6655225566	abhi@gmail.com
3	3	sai	sesh	2001-05-22	8899669966	sai@gmail.com
4	4	harshini	gupta	2005-06-06	9566225566	harsh@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	1	Bharath	Gurumetkal	2003-10-05	9566225566	bharath@gmail.com
2	2	abhi	ram	2004-09-05	6655225566	abhi@gmail.com
3	3	sai	sesh	2001-05-22	8899669966	sai@gmail.com
4	4	harshini	gupta	2005-06-06	9566225566	harsh@gmail.com

10.Display claims data where claim status is Rejected.

```
select * from Claims where ClaimStatus='Rejected';
```

	ClaimID	AssignmentID	ClaimDate	ClaimAmount	ClaimStatus
1	4	3	2023-11-20	3000.00	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	Abhi	9988663355	Bangalore

12. Display highest and lowest claimAmount from Claims table.

```
select MAX(ClaimAmount) as highest_claimamount,MIN(ClaimAmount) as  highest_claimamount from Claims;
```

	highest_claimamount	highest_claimamount
1	8000.00	3000.00

13. Display latest claim record.

```
select top 1 * from Claims order by ClaimDate desc;
```

	ClaimID	AssignmentID	ClaimDate	ClaimAmount	ClaimStatus
1	3	2	2024-01-05	8000.00	Pending

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

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

```
(1 row affected)

Completion time: 2025-12-29T17:59:51.2232190+05:30
```

15. Delete the record of PolicyAssignments whose EndDate is before todays date.

```
delete from PolicyAssignments where EndDate <GETDATE();
```

16. Display no of claims rejected.

```
select count(ClaimStatus) as rejected_count from Claims where ClaimStatus='Rejected';
```

	rejected_count
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 / 12.0 as MonthlyPremiumAmount
from Policies;
```

Results Messages

	PolicyID	PolicyName	PremiumAmount	LocalTaxes	PremiumAmountWithTax	MonthlyPremiumAmount
1	1	Health Secure	11000.00	660.0000	11660.0000	916.666666
2	2	Life Secure	25000.00	1500.0000	26500.0000	2083.333333
3	3	Child Future	12000.00	720.0000	12720.0000	1000.000000
4	4	Retirement Plus	30000.00	1800.0000	31800.0000	2500.000000
5	5	Home Safety	20000.00	1200.0000	21200.0000	1666.666666

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

```
ALTER table Customers ADD Address varchar(50),City varchar(30);
```

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

```
alter table Agents Add DevOfId int;
```

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

```
alter table Agents
Add constraint fk_Agents_DevofId
foreign key (DevOfId)
references Agents(AgentID);
```

5. Queries using Joins, Group By, Having etc.

1. List all Policies for a CustomerId 5.

```
select p.PolicyID,p.PolicyName,p.PolicyType,p.PremiumAmount,pa.StartDate,pa.EndDate from
PolicyAssignments pa JOIN Policies p on pa.PolicyID = p.PolicyID
```

```
where pa.CustomerID = 5;
```

	PolicyID	PolicyName	PolicyType	PremiumAmount	StartDate	EndDate
1	4	Retirement Plus	Pension	30000.00	2024-01-01	2025-01-01
2	5	Home Safety	Property	20000.00	2023-09-01	2024-09-01

2. View all customers with their policies.

```
Select
c.FirstName,c.LastName,p.PolicyID,p.PolicyName,p.PolicyType,p.PremiumAmount,pa.StartDate,pa.EndDa
te
from Customers c
JOIN PolicyAssignments pa on c.CustomerID = pa.CustomerID
JOIN Policies p on pa.PolicyID = p.PolicyID;
```

	FirstName	LastName	PolicyID	PolicyName	PolicyType	PremiumAmount	StartDate	EndDate
1	Bharath	Gurumetkal	1	Health Secure	Health	11000.00	2023-01-01	2024-01-01
2	abhi	ram	2	Life Secure	Life	25000.00	2023-03-15	2025-03-14
3	sai	sesh	3	Child Future	Education	12000.00	2022-06-01	2025-05-31
4	ramesh	rao	4	Retirement Plus	Pension	30000.00	2024-01-01	2025-01-01
5	ramesh	rao	5	Home Safety	Property	20000.00	2023-09-01	2024-09-01

3. View claims with customer name.

```
select
c.FirstName,c.LastName,cl.ClaimID,cl.ClaimDate,cl.ClaimAmount,cl.ClaimStatus from Claims cl JOIN
PolicyAssignments pa on cl.AssignmentID pa.AssignmentID JOIN Customers c
on pa.CustomerID = c.CustomerID;
```

	FirstName	LastName	ClaimID	ClaimDate	ClaimAmount	ClaimStatus
1	Bharath	Gurumetkal	2	2023-06-10	5000.00	Approved
2	abhi	ram	3	2024-01-05	8000.00	Pending
3	sai	sesh	4	2023-11-20	3000.00	Rejected

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

```
select c.FirstName,p.PolicyName,a.AgentName,pa.StartDate,pa.EndDate
from PolicyAssignments pa
JOIN Customers c
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	Bharath	Health Secure	Rahul	2023-01-01	2024-01-01
2	abhi	Life Secure	sai	2023-03-15	2025-03-14
3	sai	Child Future	Rahul	2022-06-01	2025-05-31
4	ramesh	Retirement Plus	sai	2024-01-01	2025-01-01
5	ramesh	Home Safety	Rahul	2023-09-01	2024-09-01

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 cl.AssignmentID = pa.AssignmentID
join Customers c on pa.CustomerID = c.CustomerID
```

```
join Policies p on pa.PolicyID = p.PolicyID;
```

	FirstName	PolicyName	ClaimAmount	ClaimStatus	ClaimDate
1	Bharath	Health Secure	5000.00	Approved	2023-06-10
2	abhi	Life Secure	8000.00	Pending	2024-01-05
3	sai	Child Future	3000.00	Rejected	2023-11-20

6. Display records of Customers with or without Policies.

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

	CustomerID	FirstName	LastName	PolicyName	PolicyType
1	1	Bharath	Gurumetkal	Health Secure	Health
2	2	abhi	ram	Life Secure	Life
3	3	sai	sesh	Child Future	Education
4	4	harshini	gupta	NULL	NULL
5	5	ramesh	rao	Retirement Plus	Pension
6	5	ramesh	rao	Home Safety	Property

7. Display all Customers with NO Claims.

```
select c.CustomerID,c.FirstName,c.LastName
from Customers c left join PolicyAssignments pa
on c.CustomerID = pa.CustomerID
left join Claims cl on pa.AssignmentID = cl.AssignmentID
where cl.ClaimID IS NULL;
```

	CustomerID	FirstName	LastName
1	4	harshini	gupta
2	5	ramesh	rao
3	5	ramesh	rao

8. Show CustomerName with Total Claim Amount per Customer.

```
select c.FirstName+' ' + c.LastName as Customer_name,sum(cl.ClaimAmount) as Total_claim_amount
from Customers c join PolicyAssignments pa on c.CustomerID = pa.CustomerID
join Claims cl on pa.AssignmentID = cl.AssignmentID
group by c.FirstName, c.LastName;
```

	Customer_name	Total_claim_amount
1	Bharath Gurumetkal	5000.00
2	abhi ram	8000.00
3	sai sesh	3000.00

9. Show names and total claim amount of Customers With Claim Amount > 50000 (UseHAVING Clause).

```
select concat(c.FirstName, ' ', c.LastName) as CustomerName,sum(cl.ClaimAmount) as total_claim_amount
from Customers c join PolicyAssignments pa on c.CustomerID = pa.CustomerID join Claims cl on
pa.AssignmentID = cl.AssignmentID
group by c.FirstName, c.LastName having sum(cl.ClaimAmount) > 50000;
```

	CustomerName	total_claim_amount
1	abhi ram	60000.00

10. Display list with Agent Wise Policy Count.

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

	AgentName	policy_count
1	Rahul	3
2	sai	2
3	Ram	0
4	Shyam	0
5	Abhi	0