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Date: 29-12-2025 Day 2 – Querying & Modifying Data

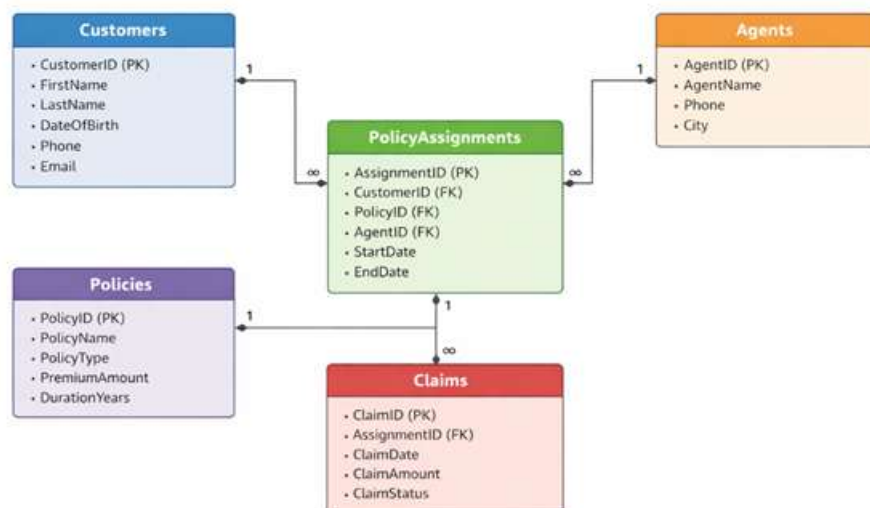
Create Sample Insurance database named **InsuranceDB** with tables, constraints, and initial sample data. Based on following er diagram and descriptions.

Entities we'll model:

- **Customers** – people who buy insurance
- **Policies** – insurance products (Health, Motor, Life)
- **Agents** – insurance agents
- **PolicyAssignments** – which customer bought which policy
- **Claims** – claims raised against policies

Relationship Explanation

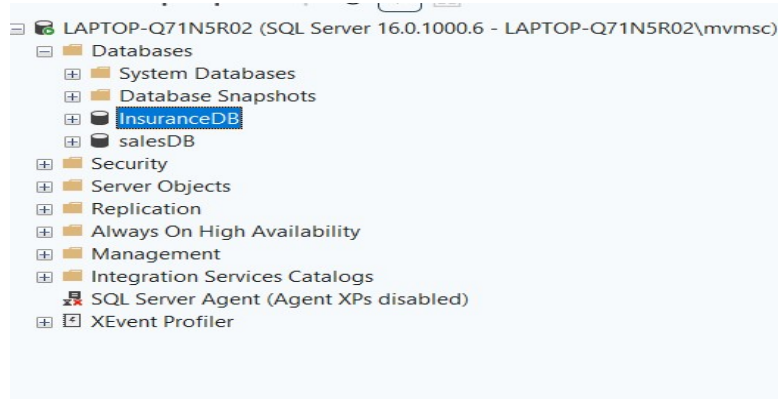
- **One Customer → Many PolicyAssignments**
- **One Policy → Many PolicyAssignments**
- **One Agent → Many PolicyAssignments**
- **One PolicyAssignment → Many Claims**



1. Create Database command.

Query: `CREATE DATABASE InsuranceDB;`

Output:



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

Query:

```
-- Customers Table
CREATE TABLE Customers
(
    CustomerID INT IDENTITY NOT NULL,
    FirstName VARCHAR(30) NOT NULL,
    LastName VARCHAR(30),
    DateOfBirth DATE,
    PhoneNumber VARCHAR(15) NOT NULL,
    Email VARCHAR(50) NOT NULL UNIQUE,
    CONSTRAINT custID_pk PRIMARY KEY (CustomerID)
);
```

Output:

dbo.Customers Design View:


| | Column Name | Data Type | Allow Nulls |
|---|-------------|-------------|-------------------------------------|
| 🔑 | CustomerID | int | <input type="checkbox"/> |
| | FirstName | varchar(30) | <input type="checkbox"/> |
| | LastName | varchar(30) | <input checked="" type="checkbox"/> |
| | DateOfBirth | date | <input checked="" type="checkbox"/> |
| | PhoneNumber | varchar(15) | <input type="checkbox"/> |
| | Email | varchar(50) | <input type="checkbox"/> |

Query:

```
-- Policies Table
CREATE TABLE Policies
(
    PolicyID INT IDENTITY NOT NULL,
    PolicyName VARCHAR(50) NOT NULL,
    PolicyType VARCHAR(50) NOT NULL,
    PremiumAmount DECIMAL(10,2),
    DurationYears INT
    CONSTRAINT PK_policyID PRIMARY KEY (PolicyID)
);
```

Output:

dbo.Policies Design View:


| | Column Name | Data Type | Allow Nulls |
|---|---------------|----------------|-------------------------------------|
|  | PolicyID | int | <input type="checkbox"/> |
| | PolicyName | varchar(50) | <input type="checkbox"/> |
| | PolicyType | varchar(50) | <input type="checkbox"/> |
| | PremiumAmount | decimal(10, 2) | <input checked="" type="checkbox"/> |
| | DurationYears | int | <input checked="" type="checkbox"/> |

Query:

```
-- Customers Table
CREATE TABLE Agents
(
    AgentID INT IDENTITY NOT NULL,
    AgentName VARCHAR(50),
    Phone VARCHAR(15),
    City VARCHAR(50)
    CONSTRAINT PK_agentID PRIMARY KEY (AgentID)
);
```

Output:

dbo.Agents Design View:

| | Column Name | Data Type | Allow Nulls |
|---|-------------|-------------|-------------------------------------|
|  | AgentID | int | <input type="checkbox"/> |
| | AgentName | varchar(50) | <input checked="" type="checkbox"/> |
| | Phone | varchar(15) | <input checked="" type="checkbox"/> |
| | City | varchar(50) | <input checked="" type="checkbox"/> |

Query:

-- PolicyAssignments Table

```
CREATE TABLE PolicyAssignments
```

```
(
```

```
    AssignmentID INT NOT NULL IDENTITY,
```

```
    CustomerID INT NOT NULL,
```

```
    PolicyID INT NOT NULL,
```

```
    AgentID INT NOT NULL,
```

```
    StartDate DATETIME DEFAULT GetDate(),
```

```
    EndDate DATETIME,
```

```
    CONSTRAINT PK_asgmtID PRIMARY KEY (AssignmentID),
```

```
    CONSTRAINT FK_custID FOREIGN KEY (CustomerID) REFERENCES
```

```
    Customers(CustomerID),
```

```
    CONSTRAINT FK_policyID FOREIGN KEY (PolicyID) REFERENCES
```


```
    Policies(PolicyID),
```

```
    CONSTRAINT FK_AgentID FOREIGN KEY (AgentID) REFERENCES Agents(AgentID)
```

```
);
```

Output:

dbo.PolicyAssignments Design View:


| | Column Name | Data Type | Allow Nulls |
|---|--------------|-----------|-------------------------------------|
|  | AssignmentID | int | <input type="checkbox"/> |
| | CustomerID | int | <input type="checkbox"/> |
| | PolicyID | int | <input type="checkbox"/> |
| | AgentID | int | <input type="checkbox"/> |
| | StartDate | datetime | <input checked="" type="checkbox"/> |
| | EndDate | datetime | <input checked="" type="checkbox"/> |

Query:

```
-- Claims Table
CREATE TABLE Claims
(
    ClaimID INT IDENTITY NOT NULL,
    AssignmentID INT NOT NULL,
    ClaimDate DATETIME NOT NULL DEFAULT GetDate(),
    ClaimAmount DECIMAL(10,2),
    ClaimStatus VARCHAR(30)
    CONSTRAINT PK_claimID PRIMARY KEY (ClaimID),
    CONSTRAINT FK_asgnmtID FOREIGN KEY (AssignmentID) REFERENCES
    PolicyAssignments(AssignmentID)
);
```

Output:

dbo.Claims Design View:

| | Column Name | Data Type | Allow Nulls |
|---|--------------|----------------|-------------------------------------|
|  | ClaimID | int | <input type="checkbox"/> |
| | AssignmentID | int | <input type="checkbox"/> |
| | ClaimDate | datetime | <input type="checkbox"/> |
| | ClaimAmount | decimal(10, 2) | <input checked="" type="checkbox"/> |
| | ClaimStatus | varchar(30) | <input checked="" type="checkbox"/> |

3. Insert commands for all tables.

Query:

```
-- Customers Data Insertion
INSERT INTO Customers (FirstName, LastName, DateOfBirth, PhoneNumber, Email)
VALUES
('Amit', 'Sharma', '1998-05-12', '9876543210', 'amit@gmail.com'),
('Neha', 'Verma', '2003-07-20', '9876543211', 'neha@gmail.com'),
('Ravi', 'Kumar', '1995-03-15', '9876543212', 'ravi@gmail.com'),
('Sneha', 'Patel', '2001-01-10', '9876543213', 'sneha@gmail.com'),
('Arjun', 'Mehta', '2005-11-25', '9876543214', 'arjun@gmail.com'),
('Kiran', 'Rao', '1988-06-18', '9876543215', 'kiran@gmail.com');
```

Output:

| Results | | Messages | | | | |
|---------|------------|-----------|----------|-------------|-------------|-----------------|
| | CustomerID | FirstName | LastName | DateOfBirth | PhoneNumber | Email |
| 1 | 1 | Amit | Sharma | 1998-05-12 | 9876543210 | amit@gmail.com |
| 2 | 2 | Neha | Verma | 2003-07-20 | 9876543211 | neha@gmail.com |
| 3 | 3 | Ravi | Kumar | 1995-03-15 | 9876543212 | ravi@gmail.com |
| 4 | 4 | Sneha | Patel | 2001-01-10 | 9876543213 | sneha@gmail.com |
| 5 | 5 | Arjun | Mehta | 2005-11-25 | 9876543214 | arjun@gmail.com |
| 6 | 6 | Kiran | Rao | 1988-06-18 | 9876543215 | kiran@gmail.com |

Query:

```
-- Policies Data Insertion
INSERT INTO Policies (PolicyName, PolicyType, PremiumAmount, DurationYears)
VALUES
('Life Shield', 'Life', 15000, 10),
('Health Plus', 'Health', 12000, 1),
('Motor Secure', 'Motor', 8000, 1),
('Health Gold', 'Health', 20000, 2),
('Life Premium', 'Life', 25000, 15);
```

Output:

| Results | | Messages | | | |
|---------|----------|--------------|------------|---------------|---------------|
| | PolicyID | PolicyName | PolicyType | PremiumAmount | DurationYears |
| 1 | 1 | Life Shield | Life | 15000.00 | 10 |
| 2 | 2 | Health Plus | Health | 12000.00 | 1 |
| 3 | 3 | Motor Secure | Motor | 8000.00 | 1 |
| 4 | 4 | Health Gold | Health | 20000.00 | 2 |
| 5 | 5 | Life Premium | Life | 25000.00 | 15 |

Query:

```
-- Agents Data Insertion
INSERT INTO Agents (AgentName, Phone, City)
VALUES
('Rajesh', '9000011111', 'Delhi'),
('Anita', '9000011112', 'Mumbai'),
('Suresh', '9000011113', 'Bangalore'),
('Kavya', '9000011114', 'Chennai'),
('Mahesh', '9000011115', 'Jaipur');
```

Output:

| Results | | Messages | | |
|---------|---------|-----------|------------|-----------|
| | AgentID | AgentName | Phone | City |
| 1 | 1 | Rajesh | 9000011111 | Delhi |
| 2 | 2 | Anita | 9000011112 | Mumbai |
| 3 | 3 | Suresh | 9000011113 | Bangalore |
| 4 | 4 | Kavya | 9000011114 | Chennai |
| 5 | 5 | Mahesh | 9000011115 | Jaipur |

Query:

```
-- PolicyAssignments Data Insertion
INSERT INTO PolicyAssignments (CustomerID, PolicyID, AgentID, StartDate,
EndDate)
VALUES
(1, 1, 1, '2020-01-01', '2030-01-01'),
(2, 2, 2, '2022-06-01', '2023-06-01'),
(3, 3, 3, '2021-03-01', '2022-03-01'),
(4, 4, 1, '2023-01-01', '2025-01-01'),
(5, 2, 4, '2024-02-01', NULL),
(6, 5, 5, '2019-05-01', '2034-05-01');
```

Output:

| Results | | Messages | | | | |
|---------|--------------|------------|----------|---------|-------------------------|-------------------------|
| | AssignmentID | CustomerID | PolicyID | AgentID | StartDate | EndDate |
| 1 | 1 | 1 | 1 | 1 | 2020-01-01 00:00:00.000 | 2030-01-01 00:00:00.000 |
| 2 | 2 | 2 | 2 | 2 | 2022-06-01 00:00:00.000 | 2023-06-01 00:00:00.000 |
| 3 | 3 | 3 | 3 | 3 | 2021-03-01 00:00:00.000 | 2022-03-01 00:00:00.000 |
| 4 | 4 | 4 | 4 | 1 | 2023-01-01 00:00:00.000 | 2025-01-01 00:00:00.000 |
| 5 | 5 | 5 | 2 | 4 | 2024-02-01 00:00:00.000 | NULL |
| 6 | 6 | 6 | 5 | 5 | 2019-05-01 00:00:00.000 | 2034-05-01 00:00:00.000 |

Query:

```
-- Claims Data Insertion
INSERT INTO Claims (AssignmentID, ClaimDate, ClaimAmount, ClaimStatus)
VALUES
(1, '2022-05-10', 30000, 'Approved'),
(1, '2023-07-15', 25000, 'Rejected'),
(2, '2023-08-20', 15000, 'Approved'),
(3, '2022-01-10', 10000, 'Rejected'),
(4, '2024-06-01', 60000, 'Approved'),
(4, '2024-07-10', 45000, 'Rejected');
```


Output:

| | ClaimID | AssignmentID | ClaimDate | ClaimAmount | ClaimStatus |
|---|---------|--------------|-------------------------|-------------|-------------|
| 1 | 1 | 1 | 2022-05-10 00:00:00.000 | 30000.00 | Approved |
| 2 | 2 | 1 | 2023-07-15 00:00:00.000 | 25000.00 | Rejected |
| 3 | 3 | 2 | 2023-08-20 00:00:00.000 | 15000.00 | Approved |
| 4 | 4 | 3 | 2022-01-10 00:00:00.000 | 10000.00 | Rejected |
| 5 | 5 | 4 | 2024-06-01 00:00:00.000 | 60000.00 | Approved |
| 6 | 6 | 4 | 2024-07-10 00:00:00.000 | 45000.00 | Rejected |

4. Select commands

1. View all records Customers table.

Query:

```
SELECT CustomerID, FirstName, LastName, DateOfBirth, PhoneNumber, Email
FROM Customers;
```

Output:

| | CustomerID | FirstName | LastName | DateOfBirth | PhoneNumber | Email |
|---|------------|-----------|----------|-------------|-------------|-----------------|
| 1 | 1 | Amit | Sharma | 1998-05-12 | 9876543210 | amit@gmail.com |
| 2 | 2 | Neha | Verma | 2003-07-20 | 9876543211 | neha@gmail.com |
| 3 | 3 | Ravi | Kumar | 1995-03-15 | 9876543212 | ravi@gmail.com |
| 4 | 4 | Sneha | Patel | 2001-01-10 | 9876543213 | sneha@gmail.com |
| 5 | 5 | Arjun | Mehta | 2005-11-25 | 9876543214 | arjun@gmail.com |
| 6 | 6 | Kiran | Rao | 1988-06-18 | 9876543215 | kiran@gmail.com |

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

Query:

```
SELECT CustomerID, PolicyID, StartDate, EndDate
FROM PolicyAssignments;
```

Output:

| | CustomerID | PolicyID | StartDate | EndDate |
|---|------------|----------|-------------------------|-------------------------|
| 1 | 1 | 1 | 2020-01-01 00:00:00.000 | 2030-01-01 00:00:00.000 |
| 2 | 2 | 2 | 2022-06-01 00:00:00.000 | 2023-06-01 00:00:00.000 |
| 3 | 3 | 3 | 2021-03-01 00:00:00.000 | 2022-03-01 00:00:00.000 |
| 4 | 4 | 4 | 2023-01-01 00:00:00.000 | 2025-01-01 00:00:00.000 |
| 5 | 5 | 2 | 2024-02-01 00:00:00.000 | NULL |
| 6 | 6 | 5 | 2019-05-01 00:00:00.000 | 2034-05-01 00:00:00.000 |

3. Display all policies of Health type.

Query:

```
SELECT PolicyID, PolicyName, PolicyType, PremiumAmount, DurationYears
FROM Policies
WHERE PolicyType = 'Health';
```

Output:

| | PolicyID | PolicyName | PolicyType | PremiumAmount | DurationYears |
|---|----------|-------------|------------|---------------|---------------|
| 1 | 2 | Health Plus | Health | 12000.00 | 1 |
| 2 | 4 | Health Gold | Health | 20000.00 | 2 |

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

Query:

```
SELECT PolicyID, PolicyName, PolicyType, PremiumAmount, DurationYears
FROM Policies
WHERE PremiumAmount > 10000 AND DurationYears = 1;
```

Output:

| | PolicyID | PolicyName | PolicyType | PremiumAmount | DurationYears |
|---|----------|-------------|------------|---------------|---------------|
| 1 | 2 | Health Plus | Health | 12000.00 | 1 |

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

Query:

```
SELECT DISTINCT(City)
FROM Agents;
```

Output:

| | City |
|---|-----------|
| 1 | Bangalore |
| 2 | Chennai |
| 3 | Delhi |
| 4 | Jaipur |
| 5 | Mumbai |

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

Query:

```
SELECT PolicyID, PolicyName, PolicyType, PremiumAmount, DurationYears
FROM Policies
WHERE PolicyType = 'Life' OR PolicyType = 'Motor' OR PolicyType = 'Health';
```

Output:

| | PolicyID | PolicyName | PolicyType | PremiumAmount | DurationYears |
|---|----------|--------------|------------|---------------|---------------|
| 1 | 1 | Life Shield | Life | 15000.00 | 10 |
| 2 | 2 | Health Plus | Health | 12000.00 | 1 |
| 3 | 3 | Motor Secure | Motor | 8000.00 | 1 |
| 4 | 4 | Health Gold | Health | 20000.00 | 2 |
| 5 | 5 | Life Premium | Life | 25000.00 | 15 |

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

Query:

```
SELECT PolicyID, PolicyName, PolicyType, PremiumAmount, DurationYears
FROM Policies
WHERE PolicyType IN ('Life', 'Motor', 'Health');
```

Output:

| | PolicyID | PolicyName | PolicyType | PremiumAmount | DurationYears |
|---|----------|--------------|------------|---------------|---------------|
| 1 | 1 | Life Shield | Life | 15000.00 | 10 |
| 2 | 2 | Health Plus | Health | 12000.00 | 1 |
| 3 | 3 | Motor Secure | Motor | 8000.00 | 1 |
| 4 | 4 | Health Gold | Health | 20000.00 | 2 |
| 5 | 5 | Life Premium | Life | 25000.00 | 15 |

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

Query:

```
SELECT CustomerID, FirstName, LastName, DateOfBirth, PhoneNumber, Email
FROM Customers
WHERE DateOfBirth >= '2001-01-02' AND DateOfBirth <= '2020-12-30';
```

Output:

| | CustomerID | FirstName | LastName | DateOfBirth | PhoneNumber | Email |
|---|------------|-----------|----------|-------------|-------------|-----------------|
| 1 | 2 | Neha | Verma | 2003-07-20 | 9876543211 | neha@gmail.com |
| 2 | 4 | Sneha | Patel | 2001-01-10 | 9876543213 | sneha@gmail.com |
| 3 | 5 | Arjun | Mehta | 2005-11-25 | 9876543214 | arjun@gmail.com |

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

Query:

```
SELECT CustomerID, FirstName, LastName, DateOfBirth, PhoneNumber, Email
FROM Customers
WHERE DateOfBirth BETWEEN '2001-01-01' AND '2020-12-31';
```

Output:

| | CustomerID | FirstName | LastName | DateOfBirth | PhoneNumber | Email |
|---|------------|-----------|----------|-------------|-------------|-----------------|
| 1 | 2 | Neha | Verma | 2003-07-20 | 9876543211 | neha@gmail.com |
| 2 | 4 | Sneha | Patel | 2001-01-10 | 9876543213 | sneha@gmail.com |
| 3 | 5 | Arjun | Mehta | 2005-11-25 | 9876543214 | arjun@gmail.com |

10. Display claims data where claim status is Rejected.

Query:

```
SELECT ClaimID, ClaimDate, ClaimAmount, ClaimStatus
FROM Claims
WHERE ClaimStatus = 'Rejected';
```

Output:

| | ClaimID | ClaimDate | ClaimAmount | ClaimStatus |
|---|---------|-------------------------|-------------|-------------|
| 1 | 2 | 2023-07-15 00:00:00.000 | 25000.00 | Rejected |
| 2 | 4 | 2022-01-10 00:00:00.000 | 10000.00 | Rejected |
| 3 | 6 | 2024-07-10 00:00:00.000 | 45000.00 | Rejected |

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

Query:

```
SELECT AgentID, AgentName, City, Phone
FROM Agents
WHERE LOWER(City) LIKE '_a%';
```

Output:

| | AgentID | AgentName | City | Phone |
|---|---------|-----------|-----------|------------|
| 1 | 3 | Suresh | Bangalore | 9000011113 |
| 2 | 5 | Mahesh | Jaipur | 9000011115 |

12. Display highest and lowest claimAmount from Claims table.

Query:

```
SELECT MAX(claimAmount) AS [Highest ClaimAmount], MIN(claimAmount) AS [Lowest ClaimAmount]
FROM Claims;
```

Output:

| | Highest ClaimAmount | Lowest ClaimAmount |
|---|---------------------|--------------------|
| 1 | 60000.00 | 10000.00 |

13. Display latest claim record.

Query:

```
SELECT TOP 1 ClaimID, ClaimDate, ClaimAmount, ClaimStatus
FROM Claims
ORDER BY ClaimDate DESC;
```

Output:

| Results | | Messages | | |
|---------|---------|-------------------------|-------------|-------------|
| | ClaimID | ClaimDate | ClaimAmount | ClaimStatus |
| 1 | 6 | 2024-07-10 00:00:00.000 | 45000.00 | Rejected |

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

Query:

```
UPDATE Policies
SET PremiumAmount = (1.10 * PremiumAmount)
WHERE PolicyType = 'Health';
```

Output:

| Results | | Messages | | | |
|---------|----------|--------------|------------|---------------|---------------|
| | PolicyID | PolicyName | PolicyType | PremiumAmount | DurationYears |
| 1 | 1 | Life Shield | Life | 15000.00 | 10 |
| 2 | 2 | Health Plus | Health | 13200.00 | 1 |
| 3 | 3 | Motor Secure | Motor | 8000.00 | 1 |
| 4 | 4 | Health Gold | Health | 22000.00 | 2 |
| 5 | 5 | Life Premium | Life | 25000.00 | 15 |

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

Query:

```
DELETE FROM Claims
WHERE AssignmentID IN (
    SELECT AssignmentID
    FROM PolicyAssignments
    WHERE EndDate < CAST(GETDATE() AS DATE)
);
```

```
DELETE FROM PolicyAssignments
WHERE EndDate < CAST(GETDATE() AS DATE);
```

Output:

| Results | | Messages | | | | |
|---------|--------------|------------|----------|---------|-------------------------|-------------------------|
| | AssignmentID | CustomerID | PolicyID | AgentID | StartDate | EndDate |
| 1 | 1 | 1 | 1 | 1 | 2020-01-01 00:00:00.000 | 2030-01-01 00:00:00.000 |
| 2 | 5 | 5 | 2 | 4 | 2024-02-01 00:00:00.000 | NULL |
| 3 | 6 | 6 | 5 | 5 | 2019-05-01 00:00:00.000 | 2034-05-01 00:00:00.000 |

16. Display no of claims rejected.

Query:

```
SELECT COUNT(*) AS [No Of Claims Rejected]
FROM Claims
WHERE ClaimStatus = 'Rejected';
```

Output:

| Results | | Messages |
|-----------------------|---|----------|
| No Of 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.

Query:

```
SELECT PolicyID, PolicyName, PremiumAmount,
(PremiumAmount * 1.06) AS [PremiumAmountWithTax], ((PremiumAmount * 1.06) / 12)
AS [MonthlyPremiumAmount]
FROM Policies;
```

Output:

Results

Messages

| | PolicyID | PolicyName | PremiumAmount | PremiumAmountWithTax | MonthlyPremiumAmount |
|---|----------|--------------|---------------|----------------------|----------------------|
| 1 | 1 | Life Shield | 15000.00 | 15900.0000 | 1325.00000000 |
| 2 | 2 | Health Plus | 13200.00 | 13992.0000 | 1166.00000000 |
| 3 | 3 | Motor Secure | 8000.00 | 8480.0000 | 706.66666666 |
| 4 | 4 | Health Gold | 22000.00 | 23320.0000 | 1943.33333333 |
| 5 | 5 | Life Premium | 25000.00 | 26500.0000 | 2208.33333333 |

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

Query:

```
ALTER TABLE Customers
ADD Address VARCHAR(50), City VARCHAR(50);
```

Output:

| | Column Name | Data Type | Allow Nulls |
|---|-------------|-------------|-------------------------------------|
| 🔑 | CustomerID | int | <input type="checkbox"/> |
| | FirstName | varchar(30) | <input type="checkbox"/> |
| | LastName | varchar(30) | <input checked="" type="checkbox"/> |
| | DateOfBirth | date | <input checked="" type="checkbox"/> |
| | PhoneNumber | varchar(15) | <input type="checkbox"/> |
| | Email | varchar(50) | <input type="checkbox"/> |
| | Address | varchar(50) | <input checked="" type="checkbox"/> |
| | City | varchar(50) | <input checked="" type="checkbox"/> |

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

Query:

```
ALTER TABLE Agents
ADD DevOfID INT;
```

Output:

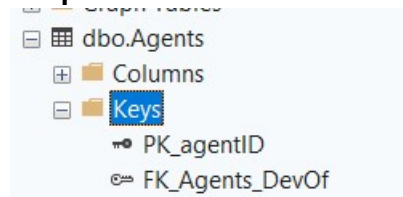
| | Column Name | Data Type | Allow Nulls |
|---|-------------|-------------|-------------------------------------|
| 🔑 | AgentID | int | <input type="checkbox"/> |
| | AgentName | varchar(50) | <input checked="" type="checkbox"/> |
| | Phone | varchar(15) | <input checked="" type="checkbox"/> |
| | City | varchar(50) | <input checked="" type="checkbox"/> |
| | DevOfID | int | <input checked="" type="checkbox"/> |

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

Query:

```
ALTER TABLE Agents
ADD CONSTRAINT FK_Agents_DevOf
FOREIGN KEY (DevOfID) REFERENCES Agents(AgentID);
```

Output:



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

1. List all Policies for a CustomerId 5.

Query:

```
SELECT pa.CustomerID, p.PolicyID, p.PolicyName, p.PolicyType, p.PremiumAmount
FROM Policies p
JOIN PolicyAssignments pa
ON p.PolicyID = pa.PolicyID
WHERE pa.CustomerID = 5;
```

Output:

Results

Messages

| | CustomerID | PolicyID | PolicyName | PolicyType | PremiumAmount |
|---|------------|----------|-------------|------------|---------------|
| 1 | 5 | 2 | Health Plus | Health | 13200.00 |

2. View all customers with their policies.

Query:

```
SELECT c.FirstName, c.LastName, c.PhoneNumber, c.Email,
p.PolicyID, p.PolicyName, p.PolicyType, p.PremiumAmount
FROM Customers c
LEFT JOIN PolicyAssignments pa
    ON c.CustomerID = pa.CustomerID
LEFT JOIN Policies p
    ON p.PolicyID = pa.PolicyID;
```

Output:

Results Messages

| | FirstName | LastName | PhoneNumber | Email | PolicyID | PolicyName | PolicyType | PremiumAmount |
|---|-----------|----------|-------------|-----------------|----------|--------------|------------|---------------|
| 1 | Amit | Sharma | 9876543210 | amit@gmail.com | 1 | Life Shield | Life | 15000.00 |
| 2 | Neha | Verma | 9876543211 | neha@gmail.com | NULL | NULL | NULL | NULL |
| 3 | Ravi | Kumar | 9876543212 | ravi@gmail.com | NULL | NULL | NULL | NULL |
| 4 | Sneha | Patel | 9876543213 | sneha@gmail.com | NULL | NULL | NULL | NULL |
| 5 | Arjun | Mehta | 9876543214 | arjun@gmail.com | 2 | Health Plus | Health | 13200.00 |
| 6 | Kiran | Rao | 9876543215 | kiran@gmail.com | 5 | Life Premium | Life | 25000.00 |

3. View claims with customer name.

Query:

```
SELECT CONCAT(c.FirstName, ' ', c.LastName) AS [Customer Name],
cl.ClaimID, cl.ClaimDate, cl.ClaimAmount, cl.ClaimStatus
FROM Claims cl
LEFT JOIN PolicyAssignments pa
    ON cl.AssignmentID = pa.AssignmentID
LEFT JOIN Customers c
    ON c.CustomerID = pa.CustomerID;
```

Output:

Results

Messages

| | Customer Name | ClaimID | ClaimDate | ClaimAmount | ClaimStatus |
|---|---------------|---------|-------------------------|-------------|-------------|
| 1 | Amit Sharma | 1 | 2022-05-10 00:00:00.000 | 30000.00 | Approved |
| 2 | Amit Sharma | 2 | 2023-07-15 00:00:00.000 | 25000.00 | Rejected |

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

Query:

```
SELECT c.FirstName, p.PolicyName, a.AgentName, pa.StartDate, pa.EndDate
FROM Customers c
LEFT JOIN PolicyAssignments pa
    ON c.CustomerID = pa.CustomerID
LEFT JOIN Policies p
    ON p.PolicyID = pa.PolicyID
LEFT JOIN Agents a
    ON a.AgentID = pa.AgentID;
```


Output:

| | FirstName | PolicyName | AgentName | StartDate | EndDate |
|---|-----------|--------------|-----------|-------------------------|-------------------------|
| 1 | Amit | Life Shield | Rajesh | 2020-01-01 00:00:00.000 | 2030-01-01 00:00:00.000 |
| 2 | Neha | NULL | NULL | NULL | NULL |
| 3 | Ravi | NULL | NULL | NULL | NULL |
| 4 | Sneha | NULL | NULL | NULL | NULL |
| 5 | Arjun | Health Plus | Kavya | 2024-02-01 00:00:00.000 | NULL |
| 6 | Kiran | Life Premium | Mahesh | 2019-05-01 00:00:00.000 | 2034-05-01 00:00:00.000 |

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

Query:

```
SELECT c.FirstName, p.PolicyName, cl.ClaimAmount,
cl.ClaimStatus, cl.ClaimDate
FROM Claims cl
LEFT JOIN PolicyAssignments pa
    ON cl.AssignmentID = pa.AssignmentID
LEFT JOIN Policies p
    ON p.PolicyID = pa.PolicyID
LEFT JOIN Customers c
    ON c.CustomerID = pa.CustomerID;
```

Output:

| | FirstName | PolicyName | ClaimAmount | ClaimStatus | ClaimDate |
|---|-----------|-------------|-------------|-------------|-------------------------|
| 1 | Amit | Life Shield | 30000.00 | Approved | 2022-05-10 00:00:00.000 |
| 2 | Amit | Life Shield | 25000.00 | Rejected | 2023-07-15 00:00:00.000 |

6. Display records of Customers with or without Policies.

Query:

```
SELECT c.CustomerID,
       c.FirstName,
       c.LastName,
       c.PhoneNumber,
       c.Email,
       p.PolicyID,
       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;
```

Output:

Results

Messages

| | CustomerID | FirstName | LastName | PhoneNumber | Email | PolicyID | PolicyName | PolicyType |
|---|------------|-----------|----------|-------------|-----------------|----------|--------------|------------|
| 1 | 1 | Amit | Sharma | 9876543210 | amit@gmail.com | 1 | Life Shield | Life |
| 2 | 2 | Neha | Verma | 9876543211 | neha@gmail.com | NULL | NULL | NULL |
| 3 | 3 | Ravi | Kumar | 9876543212 | ravi@gmail.com | NULL | NULL | NULL |
| 4 | 4 | Sneha | Patel | 9876543213 | sneha@gmail.com | NULL | NULL | NULL |
| 5 | 5 | Arjun | Mehta | 9876543214 | arjun@gmail.com | 2 | Health Plus | Health |
| 6 | 6 | Kiran | Rao | 9876543215 | kiran@gmail.com | 5 | Life Premium | Life |

7. Display all Customers with NO Claims.

Query:

```
SELECT c.CustomerID, c.FirstName, c.LastName
FROM Customers c
WHERE NOT EXISTS (
    SELECT 1
    FROM PolicyAssignments pa
    JOIN Claims cl
    ON pa.AssignmentID = cl.AssignmentID
    WHERE pa.CustomerID = c.CustomerID
);
```

Output:

| Results | | Messages | |
|---------|------------|-----------|----------|
| | CustomerID | FirstName | LastName |
| 1 | 2 | Neha | Verma |
| 2 | 3 | Ravi | Kumar |
| 3 | 4 | Sneha | Patel |
| 4 | 5 | Arjun | Mehta |
| 5 | 6 | Kiran | Rao |

8. Show CustomerName with Total Claim Amount per Customer.

Query:

```
SELECT CONCAT(c.FirstName, ' ', c.LastName) AS [Customer Name],
       SUM(cl.ClaimAmount) AS [Total Claim Amount]
FROM Customers c
LEFT JOIN PolicyAssignments pa
    ON c.CustomerID = pa.CustomerID
LEFT JOIN Claims cl
    ON cl.AssignmentID = pa.AssignmentID
GROUP BY c.CustomerID, c.FirstName, c.LastName;
```

Output:

| | Customer Name | Total Claim Amount |
|---|---------------|--------------------|
| 1 | Amit Sharma | 55000.00 |
| 2 | Neha Verma | NULL |
| 3 | Ravi Kumar | NULL |
| 4 | Sneha Patel | NULL |
| 5 | Arjun Mehta | NULL |
| 6 | Kiran Rao | NULL |

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

Query:

```
SELECT CONCAT(c.FirstName, ' ', c.LastName) AS [Customer Name],
        SUM(cl.ClaimAmount) AS [Total Claim Amount]
FROM Customers c
LEFT JOIN PolicyAssignments pa
    ON c.CustomerID = pa.CustomerID
LEFT JOIN Claims cl
    ON cl.AssignmentID = pa.AssignmentID
GROUP BY c.CustomerID, c.FirstName, c.LastName
HAVING SUM(cl.ClaimAmount) > 50000;
```

Output:

| | Customer Name | Total Claim Amount |
|---|---------------|--------------------|
| 1 | Amit Sharma | 55000.00 |

10. Display list with Agent Wise Policy Count.

Query:

```
SELECT a.AgentID, a.AgentName, a.City, a.Phone,
        COUNT(pa.AssignmentID) AS [Policy Count]
FROM Agents a
LEFT JOIN PolicyAssignments pa
    ON a.AgentID = pa.AgentID
GROUP BY a.AgentID, a.AgentName, a.City, a.Phone;
```

Output:

| | AgentID | AgentName | City | Phone | Policy Count |
|---|---------|-----------|-----------|------------|--------------|
| 1 | 1 | Rajesh | Delhi | 9000011111 | 1 |
| 2 | 2 | Anita | Mumbai | 9000011112 | 0 |
| 3 | 3 | Suresh | Bangalore | 9000011113 | 0 |
| 4 | 4 | Kavya | Chennai | 9000011114 | 1 |
| 5 | 5 | Mahesh | Jaipur | 9000011115 | 1 |