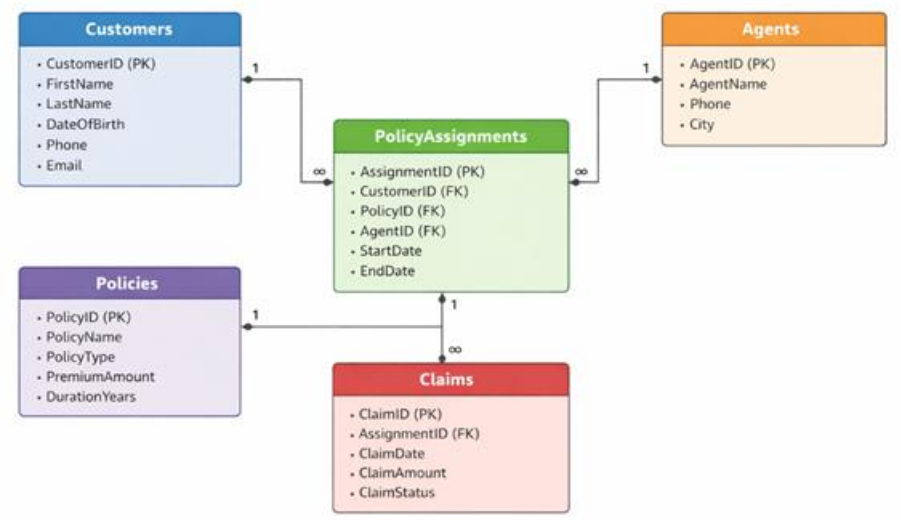
Date: 29-12-2025 à Day 2 – Querying & Modifying Data



1. **Create Database command.**

CREATE DATABASE InsDB;

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

```
create table Customers(
CustomerID INT PRIMARY KEY,
FirstName NCHAR(20),
LastName NCHAR(20),
DateOfBirth DateTime,
Phone NCHAR(10),
Email NCHAR(50)
);
```

```
create table Policies(
PolicyID INT primary key,
PolicyName NCHAR(30),
PolicyType NCHAR(30),
PremimumAmount INT,
DurationYears INT
);
```

```
CREATE TABLE Agents(
AgentID INT PRIMARY KEY,
AgentName NCHAR(20),
Phone NCHAR(10),
City NCHAR(30)
);
```

```
create table PolicyAssignments(
AssignmentID INT PRIMARY KEY,
CustomerID INT, --FOREIGN KEY
PolicyID INT, --
```

```
AgentID INT, --
StartDate DATETIME,
EndDate DATETIME,
CONSTRAINT fk_PA1
    FOREIGN KEY (CustomerID)
    REFERENCES Customers(CustomerID),
CONSTRAINT fk_PA2
    FOREIGN KEY (PolicyID)
    REFERENCES Policies(PolicyID),
CONSTRAINT fk_PA3
    FOREIGN KEY (AgentID)
    REFERENCES Agents(AgentID)

);

CREATE TABLE Claims (
   ClaimID INT PRIMARY KEY,
   AssignmentID INT,
   ClaimDate DATETIME,
   ClaimAmount INT,
   ClaimStatus NCHAR(20),
   CONSTRAINT fk_claims
      FOREIGN KEY (AssignmentID)
      REFERENCES PolicyAssignments(AssignmentID)
```

);

3. Insert commands for all tables.

```
insert into Customers values(1,'Amit','Sharma','1990-05-10','123457890','amit@gmail.com')

insert into Customers values(2,'Rahul','Varma','1991-06-17','2313457890','rahul@gmail.com')

insert into Customers values(3,'Rohit','Sharma','1987-04-30','9876543210','rohit@gmail.com')

insert into Customers values(4,'Virat','Kohli','1988-03-11','1029384756','virat@gmail.com')

insert into Customers values(5,'MS','Dhoni','1983-07-11','0192837465','dhoni@gmail.com')

INSERT INTO Customers VALUES

(6,'Ravi','Kumar','1998-05-12','9991112222','ravi@gmail.com'),

(7,'Anita','Sharma','2005-03-18','9992223333','anita@gmail.com'),

(8,'Karan','Verma','2010-11-25','9993334444','karan@gmail.com'),

(9,'Pooja','Singh','2002-07-10','9994445555','pooja@gmail.com'),

(10,'Amit','Patel','1995-01-20','9995556666','amit@gmail.com');


insert into Policies values(100,'JeevanSathi','Marriage',10000,2);

insert into Policies values(200,'Smart term plan plus','Term Life insurance',30000,8)

insert into Policies values(300,'ICICI Pru Signature','Unit Linked Insurance Plan',20000,3)

insert into Policies values(400,'Car Insurance','Motor Insurance',25000,5)

insert into Policies values(500,'Bike Insurance','Motor Insurance',9000,4)


insert into agents values(101,'Mahesh Babu','193834949','Hyderabad')

insert into agents values(102,'Prabhas Raju','1827364590','Bangalore')
```

```
insert into agents values(103,'Suresh Kumar','9988776655','Nagpur');

insert into PolicyAssignments values(1000,1,200,101,'2023-12-15','2025-12-15')
insert into PolicyAssignments values(2000,2,300,102,'2022-08-17','2025-08-17')
insert into PolicyAssignments values(3000,3,400,101,'2024-12-14','2029-12-14')
insert into PolicyAssignments values(6000,5,500,102,'2021-01-10','2023-01-10');

insert into Claims values(301,1000,'2024-02-16',12000,'Completed')
insert into Claims values(302,2000,'2024-02-16',12000,'Completed')
insert into Claims values(303,3000,'2025-01-23',20000,'Pending')
insert into Claims values(305,1000,'2024-09-10',45000,'Rejected');
```

4. Select commands

1. **View all records Customers table.**

```
select * from Customers
```

	CustomerID	FirstName	LastName	DateOfBirth	Phone	Email
1	1	Amit	Sharma	1990-05-10 00:00:00.000	123457890	amit@gmail.com
2	2	Rahul	Varma	1991-06-17 00:00:00.000	2313457890	rahul@gmail.com
3	3	Rohit	Sharma	1987-04-30 00:00:00.000	9876543210	rohit@gmail.com
4	4	Virat	Kohli	1988-03-11 00:00:00.000	1029384756	virat@gmail.com
5	5	MS	Dhoni	1983-07-11 00:00:00.000	0192837465	dhoni@gmail.com
6	6	Ravi	Kumar	1998-05-12 00:00:00.000	9991112222	ravi@gmail.com
7	7	Anita	Sharma	2005-03-18 00:00:00.000	9992223333	anita@gmail.com
8	8	Karan	Verma	2010-11-25 00:00:00.000	9993334444	karan@gmail.com
9	9	Pooja	Singh	2002-07-10 00:00:00.000	9994445555	pooja@gmail.com
10	10	Amit	Patel	1995-01-20 00:00:00.000	9995556666	amit@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	200	2023-12-15 00:00:00.000	2025-12-15 00:00:00.000
2	2	300	2022-08-17 00:00:00.000	2025-08-17 00:00:00.000
3	3	400	2024-12-14 00:00:00.000	2029-12-14 00:00:00.000
4	4	500	2023-05-19 00:00:00.000	2027-12-19 00:00:00.000
5	5	200	2024-06-07 00:00:00.000	2026-06-07 00:00:00.000
6	5	500	2021-01-10 00:00:00.000	2023-01-10 00:00:00.000

3. **Display all policies of Health type.**

   select * from policies where PolicyType like 'health%'

	PolicyID	PolicyName	PolicyType	PremiumAmount	DurationYears
1	600	Maternity Insurance	Health Insurance	17000	3

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	700	Car Insurance	Motor Insurance	22000	1

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

   select distinct city from Agents

	city
1	Bangalore
2	Hyderabad
3	Nagpur

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

   select * from Policies

where PolicyType like 'Health%' or
PolicyType like 'Motor%' or PolicyType like 'Life%'

	PolicyID	PolicyName	PolicyType	PremiumAmount	DurationYears
1	400	Car Insurance	Motor Insurance	25000	5
2	500	Bike Insurance	Motor Insurance	9000	4
3	600	Maternity Insurance	Health Insurance	17000	3
4	700	Car Insurance	Motor Insurance	22000	1

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

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

	PolicyID	PolicyName	PolicyType	PremiumAmount	DurationYears
1	400	Car Insurance	Motor Insurance	25000	5
2	500	Bike Insurance	Motor Insurance	9000	4
3	600	Maternity Insurance	Health Insurance	17000	3
4	700	Car Insurance	Motor Insurance	22000	1

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

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

	CustomerID	FirstName	LastName	DateOfBirth	Phone	Email
1	7	Anita	Sharma	2005-03-18 00:00:00.000	9992223333	anita@gmail.com
2	8	Karan	Verma	2010-11-25 00:00:00.000	9993334444	karan@gmail.com
3	9	Pooja	Singh	2002-07-10 00:00:00.000	9994445555	pooja@gmail.com

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

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

	CustomerID	FirstName	LastName	DateOfBirth	Phone	Email
1	7	Anita	Sharma	2005-03-18 00:00:00.000	9992223333	anita@gmail.com
2	8	Karan	Verma	2010-11-25 00:00:00.000	9993334444	karan@gmail.com
3	9	Pooja	Singh	2002-07-10 00:00:00.000	9994445555	pooja@gmail.com

10. **Display claims data where claim status is Rejected.**

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

	ClaimID	AssignmentID	ClaimDate	ClaimAmount	ClaimStatus
1	304	1000	2024-09-10 00:00:00.000	45000	Rejected
2	305	1000	2024-09-10 00:00:00.000	45000	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	102	Prabhas Raju	1827364590	Bangalore
2	103	Suresh Kumar	9988776655	Nagpur

12. Display highest and lowest claimAmount from Claims table.

```
select max(ClaimAmount) as maxAmount,min(ClaimAmount) as minAmount
from Claims
```

	maxAmount	minAmount
1	45000	12000

13. Display latest claim record.

```
select TOP 1* from Claims
order by ClaimDate desc
```

	ClaimID	AssignmentID	ClaimDate	ClaimAmount	ClaimStatus
1	303	3000	2025-01-23 00:00:00.000	20000	Pending

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

```
update Policies
set PremiumAmount=PremiumAmount+(0.1)*PremiumAmount
where PolicyType like 'Health%'
```

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

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

DELETE FROM PolicyAssignments
WHERE EndDate < GETDATE();
```

16. Display no of claims rejected.

```
select count(*)
from Claims
 where ClaimStatus='Rejected'
```

	(No column name)
1	0

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)*PremiumAmount)
 as PremiumAmountWithTax,PremiumAmount/12
 as MonthlyPremiumAmount from Policies
```

	PolicyID	PolicyName	PremiumAmount	PremiumAmountWithTax	MonthlyPremiumAmount
1	100	JeevanSathi	10000	10600.00	833
2	200	Smart term plan plus	30000	31800.00	2500
3	300	ICICI Pru Signature	20000	21200.00	1666
4	400	Car Insurance	25000	26500.00	2083
5	500	Bike Insurance	9000	9540.00	750
6	600	Maternity Insurance	18700	19822.00	1558
7	700	Car Insurance	22000	23320.00	1833

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

```
ALTER TABLE Customers
add Address varchar(50),
City Varchar(20)
```

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.*
from Policies p
join PolicyAssignments pa on p.PolicyID=pa.PolicyID
join Customers c on c.CustomerID=pa.CustomerID
where c.CustomerID=5
```

	PolicyID	PolicyName	PolicyType	PremiumAmount	DurationYears
1	200	Smart term plan plus	Term Life insurance	30000	8

    2. View all customers with their policies.

```
select concat(c.FirstName,c.LastName) as FullName,p.PolicyName
from Customers c
join PolicyAssignments pa on pa.CustomerID=c.CustomerID
join Policies p on pa.PolicyID=p.PolicyID
```

	FullName	PolicyName
1	Rohit Sharma	Car Insurance
2	Virat Kohli	Bike Insurance
3	MS Dhoni	Smart term plan plus

3. **View claims with customer name.**

```
select cl.*,concat(c.FirstName,c.LastName) as FullName
from Claims cl
join PolicyAssignments pa on cl.AssignmentID=pa.AssignmentID
join Customers c on c.CustomerID=pa.CustomerID
```

	ClaimID	AssignmentID	ClaimDate	ClaimAmount	ClaimStatus	FullName	
1	303	3000	2025-01-23 00:00:00.000	20000	Pending	Rohit	Sharma

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 c.CustomerID=pa.CustomerID
join Policies p on p.PolicyID=pa.PolicyID
join Agents a on a.AgentID=pa.AgentID
```

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 Customers c
join PolicyAssignments pa on c.CustomerID=pa.CustomerID
join Policies p on p.PolicyID=pa.PolicyID
join Claims cl on cl.AssignmentID=pa.AssignmentID
```

	FirstName	PolicyName	ClaimAmount	ClaimStatus	ClaimDate
1	Rohit	Car Insurance	20000	Pending	2025-01-23 00:00:00.000

6. **Display records of Customers with or without Policies.**

```
SELECT
C.CustomerId,
CONCAT(FirstName,LastName) AS CustomerName,
 P.PolicyId,
 P.PolicyName
```

```
FROM Customers C
LEFT JOIN PolicyAssignments PA
ON C.CustomerId = PA.CustomerId
LEFT JOIN Policies P
ON PA.PolicyId = P.PolicyId;
```

	CustomerId	CustomerName		PolicyId	PolicyName
1	1	Amit	Sharma	NULL	NULL
2	2	Rahul	Varma	NULL	NULL
3	3	Rohit	Sharma	400	Car Insurance
4	4	Virat	Kohli	500	Bike Insurance
5	5	MS	Dhoni	200	Smart term plan plus
6	6	Ravi	Kumar	NULL	NULL
7	7	Anita	Sharma	NULL	NULL
8	8	Karan	Verma	NULL	NULL
9	9	Pooja	Singh	NULL	NULL
10	10	Amit	Patel	NULL	NULL

7. **Display all Customers with NO Claims.**

```
select c.* from Customers C
left join PolicyAssignments pa on c.CustomerID=pa.CustomerID
left join Claims cl on cl.AssignmentID=pa.AssignmentID
where cl.ClaimID is NULL
```

	CustomerID	FirstName	LastName	DateOfBirth	Phone	Email	Address	City
1	1	Amit	Sharma	1990-05-10 00:00:00.000	123457890	amit@gmail.com	NULL	NULL
2	2	Rahul	Varma	1991-06-17 00:00:00.000	2313457890	rahul@gmail.com	NULL	NULL
3	4	Virat	Kohli	1988-03-11 00:00:00.000	1029384756	virat@gmail.com	NULL	NULL
4	5	MS	Dhoni	1983-07-11 00:00:00.000	0192837465	dhoni@gmail.com	NULL	NULL
5	6	Ravi	Kumar	1998-05-12 00:00:00.000	9991112222	ravi@gmail.com	NULL	NULL
6	7	Anita	Sharma	2005-03-18 00:00:00.000	9992223333	anita@gmail.com	NULL	NULL
7	8	Karan	Verma	2010-11-25 00:00:00.000	9993334444	karan@gmail.com	NULL	NULL
8	9	Pooja	Singh	2002-07-10 00:00:00.000	9994445555	pooja@gmail.com	NULL	NULL
9	10	Amit	Patel	1995-01-20 00:00:00.000	9995556666	amit@gmail.com	NULL	NULL

8. **Show CustomerName with Total Claim Amount per Customer.**

```
select concat(c.FirstName,c.LastName) as FullName,
sum(cl.ClaimAmount) as TotalClaimAmount
```

```
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;
```

	FullName	TotalClaimAmount
1	Rohit Sharma	20000

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

```
select CONCAT(c.FirstName,c.LastName) as FullName,
sum(cl.ClaimAmount) as TotalAmount
from Customers c
join PolicyAssignments pa on c.CustomerID=pa.CustomerID
join Claims cl on cl.AssignmentID=pa.AssignmentID
group by c.FirstName,c.LastName
having sum(cl.ClaimAmount)>50000
```

	FullName	TotalAmount

10. **Display list with Agent Wise Policy Count.**

```
select a.AgentName,count(pa.AgentID)
from Agents a
join PolicyAssignments pa on a.AgentID=pa.AgentID
group by a.AgentID,a.AgentName
```

	AgentName	POLICY_COUNT
1	Mahesh Babu	2
2	Prabhas Raju	1