Day 2 – Querying & Modifying Data (29-12-2025)

1. Create Database command.

Ans:

```
create database InsuranceDB;
```

1.1 setting up the Insurance DB

```
use InsuranceDB;
```

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

Ans:

Customers Table:

```
CREATE TABLE customers (
    customerid INT PRIMARY KEY,
    firstname VARCHAR(50) NOT NULL,
    lastname VARCHAR(50),
    DOB DATE,
    phone VARCHAR(15),
    email VARCHAR(50) UNIQUE
);
```

Agents Table:

```
CREATE TABLE agents (
    agentid INT PRIMARY KEY,
    agentname VARCHAR(50),
    phone VARCHAR(20),
    city VARCHAR(50)
);
```

Policies Table:

```
CREATE TABLE policies (
        policyid INT PRIMARY KEY,
        policyname VARCHAR(50),
        policytype VARCHAR(50),
        premiumamount MONEY,
        durationyears INT
    );
```

policyassignments Table:

```
CREATE TABLE policyassignments (
        assignmentid INT PRIMARY KEY,
        customerid INT,
        policyid INT,
        agentid INT,
        startdate DATE,
        enddate DATE,
    CONSTRAINT FK_policyassignments_customer FOREIGN KEY
    (customerid) REFERENCES customers(customerid),
    CONSTRAINT FK_policyassignments_policy FOREIGN KEY (policyid)
        REFERENCES policies(policyid),
    CONSTRAINT FK_policyassignments_agent FOREIGN KEY (agentid)
        REFERENCES agents(agentid),
    );
```

Claims Table:

```
CREATE TABLE claims (
    claimid INT PRIMARY KEY,
    assignmentid INT,
    claimdate DATE,
    claimamount MONEY,
    claimstatus VARCHAR(50),
    CONSTRAINT FK_claims_assignment FOREIGN KEY (assignmentid)
        REFERENCES policyassignments(assignmentid),
);
```

3. Insert commands for all tables.

Ans:

Customers Table:

```
INSERT INTO customers (customerid, firstname, lastname, DOB, phone, email)
    VALUES
    (1, 'Jaya', 'Prakash', '2004-08-11', '7981655855', 'jaya@gmail.com'),
    (2, 'Virat', 'Kohli', '2005-06-21', '9876543210', 'virat@gmail.com'),
    (3, 'Masoom', 'Baba', '2001-12-15', '9123456789', 'masoom@gmail.com'),
    (4, 'Rosi', 'Reddy', '2010-09-03', '9012345678', 'rosi@gmail.com'),
    (5, 'Radhika', 'Reddy', '1998-01-28', '8899776655', 'radhika@gmail.com'),
    (6, 'Raja', 'Vardhan', '2008-04-19', '9876112233', 'raja@gmail.com'),
    (7, 'Anurag', 'Vepur', '1995-11-25', '9876223344', 'anurag@gmail.com');
```

Agents Table:

```
INSERT INTO agents (agentid, agentname, phone, city)
    VALUES
    (1, 'Ranjan Kumar', '9876500001', 'Nagpur'),
    (2, 'Greeshmanth', '9876500002', 'Jaipur'),
    (3, 'Siddartha Reddy', '9876500003', 'Delhi'),
    (4, 'Pranouti', '9876500004', 'Mumbai'),
    (5, 'Sarath Sai', '9876500005', 'Patna');
```

Policies Table:

```
INSERT INTO policies (policyid, policyname, policytype, premiumamount,
durationyears)
    VALUES
    (1, 'Life Secure', 'Life Insurance', 25000, 20),
    (2, 'Health Plus', 'Health Insurance', 15000, 1),
    (3, 'Car Protect', 'Motor Insurance', 12000, 1),
    (4, 'Health Gold', 'Health Insurance', 20000, 2),
    (5, 'Life Diamond', 'Life Insurance', 30000, 25);
```

Policyassignments Table:

```
INSERT INTO policyassignments (assignmentid, customerid, policyid, agentid,
startdate, enddate)
    VALUES
    (1, 1, 1, 1, '2023-01-01', '2043-01-01'),
    (2, 2, 2, 2, '2022-06-15', '2023-06-15'),
    (3, 3, 3, 3, '2021-03-10', '2022-03-10'),
    (4, 4, 4, 4, '2024-01-01', '2026-01-01'),
    (5, 6, 5, 5, '2020-01-01', '2045-01-01');
```

Claims Table

```
INSERT INTO claims (claimid, assignmentid, claimdate, claimamount, claimstatus)
    VALUES
    (1, 1, '2024-02-10', 50000, 'Approved'),
    (2, 2, '2023-11-05', 30000, 'Rejected'),
    (3, 3, '2024-07-18', 20000, 'Rejected'),
    (4, 4, '2024-09-01', 45000, 'Pending'),
    (5, 5, '2024-11-15', 60000, 'Rejected');
```

4.Select Commands

1. View all records Customers table.
Ans:

```
SELECT * FROM customers;
```

o/p:

	customerid	firstname	lastname	DOB	phone	email
1	1	Jaya	Prakash	2004-08-11	7981655855	jaya@gmail.com
2	2	Virat	Kohli	2005-06-21	9876543210	amit@gmail.com
3	3	Masoom	Baba	2001-12-15	9123456789	sneha@gmail.com
4	4	Rosi	Reddy	2010-09-03	9012345678	rahul@gmail.com
5	5	Radhika	Reddy	1998-01-28	8899776655	priya@gmail.com
6	6	Raja	Vardhan	2008-04-19	9876112233	arjun@gmail.com
7	7	Anurag	Vepur	1995-11-25	9876223344	pooja@gmail.com

2. select customerid,policyid,startdate,enddate from policyassignments;
o/p:

	customerid	policyid	startdate	enddate
1	1	1	2023-01-01	2043-01-01
2	2	2	2022-06-15	2023-06-15
3	3	3	2021-03-10	2022-03-10
4	4	4	2024-01-01	2026-01-01
5	6	5	2020-01-01	2045-01-01

3.select *from policies where policytype='Health Insurance';

o/p:

	policyid	policyname	policytype	premiumamount	durationyears
1	2	Health Plus	Health Insurance	15000.00	1
2	4	Health Gold	Health Insurance	20000.00	2

4.select *from policies where premiumamount>10000 and durationyears=1;

o/p:

	policyid	policyname	policytype	premiumamount	durationyears
1	2	Health Plus	Health Insurance	15000.00	1
2	3	Car Protect	Motor Insurance	12000.00	1

5.select distinct city from agents;

o/p:

	city
1	Delhi
2	Jaipur
3	Mumbai
4	Nagpur
5	Patna

6.select * from Policies

where PolicyType = 'Life Insurance'

OR PolicyType = 'Health Insurance'

OR PolicyType = 'Motor Insurance';

o/p:

	policyid	policyname	policytype	premiumamount	durationyears
1	1	Life Secure	Life Insurance	25000.00	20
2	2	Health Plus	Health Insurance	15000.00	1
3	3	Car Protect	Motor Insurance	12000.00	1
4	4	Health Gold	Health Insurance	20000.00	2
5	5	Life Diamond	Life Insurance	30000.00	25

7. Select * From Policies

where PolicyType IN ('Life Insurance', 'Health Insurance', 'Motor Insurance');

o/p:

	policyid	policyname	policytype	premiumamount	durationyears
1	1	Life Secure	Life Insurance	25000.00	20
2	2	Health Plus	Health Insurance	15000.00	1
3	3	Car Protect	Motor Insurance	12000.00	1
4	4	Health Gold	Health Insurance	20000.00	2
5	5	Life Diamond	Life Insurance	30000.00	25

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

o/p:

	customerid	firstname	lastname	DOB	phone	email
1	1	Jaya	Prakash	2004-08-11	7981655855	jaya@gmail.com
2	2	Virat	Kohli	2005-06-21	9876543210	amit@gmail.com
3	3	Masoom	Baba	2001-12-15	9123456789	sneha@gmail.com
4	4	Rosi	Reddy	2010-09-03	9012345678	rahul@gmail.com
5	6	Raja	Vardhan	2008-04-19	9876112233	arjun@gmail.com

9. select * from customers where DOB between '2001-01-01' and '2020-12-31';

o/p:

	customerid	firstname	lastname	DOB	phone	email
1	1	Jaya	Prakash	2004-08-11	7981655855	jaya@gmail.com
2	2	Virat	Kohli	2005-06-21	9876543210	amit@gmail.com
3	3	Masoom	Baba	2001-12-15	9123456789	sneha@gmail.com
4	4	Rosi	Reddy	2010-09-03	9012345678	rahul@gmail.com
5	6	Raja	Vardhan	2008-04-19	9876112233	arjun@gmail.com

10.select *From claims where claimstatus='Rejected';

o/p:

	claimid	assignmentid	claimdate	claimamount	claimstatus
1	2	2	2023-11-05	30000.00	Rejected
2	3	3	2024-07-18	20000.00	Rejected
3	5	5	2024-11-15	60000.00	Rejected

11.select *from agents where city like '_a%';

o/p:

	agentid	agentname	phone	city
1	1	Ranjan Kumar	9876500001	Nagpur
2	2	Greeshmanth	9876500002	Jaipur
3	5	Sarath Sai	9876500005	Patna

12. select max(claimamount) as max_claim_amount,min(claimamount) as min_claim_amount from claims;

o/p:

	max_claim_amount	min_claim_amount
1	60000.00	20000.00

13. select Top 1 *from claims order by claimdate desc;

o/p:

	claimid	assignmentid	claimdate	claimamount	claimstatus
1	5	5	2024-11-15	60000.00	Rejected

14. update policies

set premiumamount=premiumamount*1.10

where policytype='Health Insurance';

o/p:

	policyid	policyname	policytype	premiumamount	durationyears
1	1	Life Secure	Life Insurance	25000.00	20
2	2	Health Plus	Health Insurance	16500.00	1
3	3	Car Protect	Motor Insurance	12000.00	1
4	4	Health Gold	Health Insurance	22000.00	2
5	5	Life Diamond	Life Insurance	30000.00	25

15. DELETE FROM policyassignments

WHERE enddate <= GETDATE();

16.select count(*) as Rejected_claims from claims where claimstatus='Rejected';

o/p:

	Rejected_claims
1	3

17.Select

PolicyId,

PolicyName,

PremiumAmount,

PremiumAmount * 0.06 AS LocalTaxes,

PremiumAmount * 1.06 AS PremiumAmountWithTax,

(PremiumAmount * 1.06) / 12 AS MonthlyPremiumAmount

From Policies;

o/p:

	PolicyId	PolicyName	PremiumAmount	LocalTaxes	PremiumAmountWithTax	MonthlyPremiumAmount
1	1	Life Secure	25000.00	1500.000000	26500.000000	2208.333333333
2	2	Health Plus	16500.00	990.000000	17490.000000	1457.500000000
3	3	Car Protect	12000.00	720.000000	12720.000000	1060.000000000
4	4	Health Gold	22000.00	1320.000000	23320.000000	1943.333333333
5	5	Life Diamond	30000.00	1800.000000	31800.000000	2650.000000000

18. ALTER TABLE customers

ADD address VARCHAR(50);

ALTER TABLE customers

ADD city VARCHAR(50);

19.alter table agents

add DevOfId int;

20.ALTER TABLE agents

ADD CONSTRAINT FK_agents_self

FOREIGN KEY (DevOfId)

REFERENCES agents(AgentId);

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

1. SELECT p.policyid, p.policyname, p.policytype, p.premiumamount, p.durationyears

FROM policies p

INNER JOIN policyassignments pa

ON p.policyid = pa.policyid

WHERE pa.customerid = 5;

o/p:
Customer with id 5 do not have the policies in my table.

	policyid	policyname	policytype	premiumamount	durationyears
1	1	Life Secure	Life Insurance	25000.00	20
2	2	Health Plus	Health Insurance	16500.00	1
3	3	Car Protect	Motor Insurance	12000.00	1
4	4	Health Gold	Health Insurance	22000.00	2
5	5	Life Diamond	Life Insurance	30000.00	25

	assignmentid	customerid	policyid	agentid	startdate	enddate
1	1	1	1	1	2023-01-01	2043-01-01
2	2	2	2	2	2022-06-15	2023-06-15
3	3	3	3	3	2021-03-10	2022-03-10
4	4	4	4	4	2024-01-01	2026-01-01
5	5	6	5	5	2020-01-01	2045-01-01

2. Select

c.customerid,

c.firstname,

c.lastname,

p.policyname,

p.policytype

From customers c

INNER JOIN policyassignments pa

ON c.customerid = pa.customerid

INNER JOIN policies p

ON pa.policyid = p.policyid;

o/p:

	customerid	firstname	lastname	policyname	policytype
1	1	Jaya	Prakash	Life Secure	Life Insurance
2	2	Virat	Kohli	Health Plus	Health Insurance
3	3	Masoom	Baba	Car Protect	Motor Insurance
4	4	Rosi	Reddy	Health Gold	Health Insurance
5	6	Raja	Vardhan	Life Diamond	Life Insurance

3. Select

c.firstname,

c.lastname,

cl.claimid,

cl.claimamount,

cl.claimstatus,

cl.claimdate

From claims cl

INNER JOIN policyassignments pa

ON cl.assignmentid = pa.assignmentid

INNER JOIN customers c

ON pa.customerid = c.customerid;

o/p:

	firstname	lastname	claimid	claimamount	claimstatus	claimdate
1	Jaya	Prakash	1	50000.00	Approved	2024-02-10
2	Virat	Kohli	2	30000.00	Rejected	2023-11-05
3	Masoom	Baba	3	20000.00	Rejected	2024-07-18
4	Rosi	Reddy	4	45000.00	Pending	2024-09-01
5	Raja	Vardhan	5	60000.00	Rejected	2024-11-15

4. Select

```
    c.firstname,
    p.policyname,
    a.agentname,
    pa.startdate,
    pa.enddate
From policyassignments pa
INNER JOIN customers c
    ON pa.customerid = c.customerid
INNER JOIN policies p
    ON pa.policyid = p.policyid
INNER JOIN agents a
    ON pa.agentid = a.agentid;
```

o/p:

	firstname	policyname	agentname	startdate	enddate
1	Jaya	Life Secure	Ranjan Kumar	2023-01-01	2043-01-01
2	Virat	Health Plus	Greeshmanth	2022-06-15	2023-06-15
3	Masoom	Car Protect	Siddartha Reddy	2021-03-10	2022-03-10
4	Rosi	Health Gold	Pranouti	2024-01-01	2026-01-01
5	Raja	Life Diamond	Sarath Sai	2020-01-01	2045-01-01

5. SELECT

c.firstname,

p.policyname,

cl.claimamount,

cl.claimstatus,

cl.claimdate

FROM claims cl

INNER JOIN policyassignments pa

ON cl.assignmentid = pa.assignmentid

INNER JOIN customers c

ON pa.customerid = c.customerid

INNER JOIN policies p

ON pa.policyid = p.policyid;

o/p:

	firstname	policyname	claimamount	claimstatus	claimdate
1	Jaya	Life Secure	50000.00	Approved	2024-02-10
2	Virat	Health Plus	30000.00	Rejected	2023-11-05
3	Masoom	Car Protect	20000.00	Rejected	2024-07-18
4	Rosi	Health Gold	45000.00	Pending	2024-09-01
5	Raja	Life Diamond	60000.00	Rejected	2024-11-15

6.SELECT

c.customerid,

c.firstname,

c.lastname,

p.policyname

FROM customers c

LEFT JOIN policyassignments pa

ON c.customerid = pa.customerid

LEFT JOIN policies p
ON pa.policyid = p.policyid;

o/p:

	customerid	firstname	lastname	policyname
1	1	Jaya	Prakash	Life Secure
2	2	Virat	Kohli	Health Plus
3	3	Masoom	Baba	Car Protect
4	4	Rosi	Reddy	Health Gold
5	5	Radhika	Reddy	NULL
6	6	Raja	Vardhan	Life Diamond
7	7	Anurag	Vepur	NULL

7. SELECT DISTINCT

```
    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;
```

o/p:

	customerid	firstname	lastname
1	5	Radhika	Reddy
2	7	Anurag	Vepur

8. SELECT

c.firstname,

SUM(cl.claimamount) AS TotalClaimAmount

FROM customers c

INNER JOIN policyassignments pa

ON c.customerid = pa.customerid

INNER JOIN claims cl

ON pa.assignmentid = cl.assignmentid

GROUP BY c.firstname;

o/p:

	firstname	TotalClaimAmount
1	Jaya	50000.00
2	Masoom	20000.00
3	Raja	60000.00
4	Rosi	45000.00
5	Virat	30000.00

9. SELECT

c.firstname,

SUM(cl.claimamount) AS TotalClaimAmount

FROM customers c

INNER JOIN policyassignments pa

ON c.customerid = pa.customerid

INNER JOIN claims cl

ON pa.assignmentid = cl.assignmentid

GROUP BY c.firstname

HAVING SUM(cl.claimamount) > 50000;

o/p:

	firstname	TotalClaimAmount
1	Raja	60000.00

10.SELECT

a.agentname,

COUNT(pa.policyid) AS PolicyCount

FROM agents a

LEFT JOIN policyassignments pa

ON a.agentid = pa.agentid

GROUP BY a.agentname;

o/p:

	agentname	PolicyCount
1	Greeshmanth	1
2	Pranouti	1
3	Ranjan Kumar	1
4	Sarath Sai	1
5	Siddartha Reddy	1