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

1. Create Database command.

```
create database insurance;
use insurance;
```

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

```
CREATE TABLE customers (
    customerID INT PRIMARY KEY,
    firstName VARCHAR(50) NOT NULL,
    lastName VARCHAR(50) NOT NULL,
    DOB DATE NOT NULL,
    phone VARCHAR(15) NOT NULL,
    email VARCHAR(100) NOT NULL,
    CONSTRAINT UQ_customers_email UNIQUE (email),
    CONSTRAINT CK_customers_DOB CHECK (DOB < GETDATE())
);

CREATE TABLE agents (
    agentID INT PRIMARY KEY,
    agentName VARCHAR(50) NOT NULL,
    phone VARCHAR(15) NOT NULL,
    city VARCHAR(50) NOT NULL,

    CONSTRAINT UQ_agents_phone UNIQUE (phone)
);

CREATE TABLE policies (
    policyID INT PRIMARY KEY,
    policyName VARCHAR(50) NOT NULL,
    policyType VARCHAR(50) NOT NULL,
    premiumAmount MONEY NOT NULL,
    durationYears INT NOT NULL,

    CONSTRAINT CK_policies_premium CHECK (premiumAmount > 0),
    CONSTRAINT CK_policies_duration CHECK (durationYears > 0)
);

CREATE TABLE policyassignments (
    assignmentID INT PRIMARY KEY,
    customerID INT NOT NULL,
    policyID INT NOT NULL,
    agentID INT NOT NULL,
    startDate DATE NOT NULL,
    endDate DATE NOT NULL,

    CONSTRAINT FK_policyassignments_customers
        FOREIGN KEY (customerID)
        REFERENCES customers(customerID),

    CONSTRAINT FK_policyassignments_policies
```

```
        FOREIGN KEY (policyID)
        REFERENCES policies(policyID),

    CONSTRAINT FK_policyassignments_agents
        FOREIGN KEY (agentID)
        REFERENCES agents(agentID),

    CONSTRAINT CK_policyassignments_dates
        CHECK (endDate > startDate)
);

CREATE TABLE policyassignments (
    assignmentID INT PRIMARY KEY,
    customerID INT NOT NULL,
    policyID INT NOT NULL,
    agentID INT NOT NULL,
    startDate DATE NOT NULL,
    endDate DATE NOT NULL,

    CONSTRAINT FK_policyassignments_customers
        FOREIGN KEY (customerID)
        REFERENCES customers(customerID),

    CONSTRAINT FK_policyassignments_policies
        FOREIGN KEY (policyID)
        REFERENCES policies(policyID),

    CONSTRAINT FK_policyassignments_agents
        FOREIGN KEY (agentID)
        REFERENCES agents(agentID),
);

CREATE TABLE claims (
    claimID INT PRIMARY KEY,
    assignmentID INT NOT NULL,
    claimDate DATE NOT NULL,
    claimAmount MONEY NOT NULL,
    claimStatus VARCHAR(20) NOT NULL,

    CONSTRAINT FK_claims_policyassignments
        FOREIGN KEY (assignmentID)
        REFERENCES policyassignments(assignmentID),
);
```

3. Insert commands for all tables.

```
INSERT INTO customers VALUES
(1, 'Ravi',  'Kumar', '1998-05-10', '9876543210', 'ravi@gmail.com'),
(2, 'Anita', 'Sharma','2003-03-15', '9876543211', 'anita@gmail.com'),
(3, 'Suresh','Reddy', '2010-07-20', '9876543212', 'suresh@gmail.com'),
(4, 'Priya', 'Verma', '1995-11-25', '9876543213', 'priya@gmail.com'),
(5, 'Amit',  'Patel', '2005-01-05', '9876543214', 'amit@gmail.com');
```

```
INSERT INTO agents VALUES
(1, 'Ramesh Rao', '9123456780', 'Hyderabad'),
(2, 'Sunita Das', '9123456781', 'Nagpur'),
(3, 'Vikram Singh','9123456782', 'Jaipur');
```

```
INSERT INTO policies VALUES
(1, 'Life Secure',   'Life',   15000, 1),
(2, 'Health Plus',   'Health', 12000, 1),
(3, 'Motor Shield',  'Motor',   8000,  1),
(4, 'Health Gold',   'Health', 20000, 2);
```

```
INSERT INTO policyassignments VALUES
(1, 5, 1, 1, '2023-01-01', '2024-01-01'),
(2, 2, 2, 2, '2024-02-01', '2025-02-01'),
(3, 1, 3, 3, '2023-06-01', '2024-06-01'),
(4, 4, 4, 1, '2024-01-01', '2026-01-01');
```

```
INSERT INTO claims VALUES
(1, 1, '2023-05-10', 30000, 'Approved'),
(2, 2, '2024-06-15', 20000, 'Rejected'),
(3, 4, '2024-08-01', 60000, 'Approved');
```

4. Select commands:

1)

```
select * from customers;
```

Results | Messages

	customerID	firstName	lastName	DOB	phone	email
1	1	Ravi	Kumar	1998-05-10	9876543210	ravi@gmail.com
2	2	Anita	Sharma	2003-03-15	9876543211	anita@gmail.com
3	3	Suresh	Reddy	2010-07-20	9876543212	suresh@gmail.com
4	4	Priya	Verma	1995-11-25	9876543213	priya@gmail.com
5	5	Amit	Patel	2005-01-05	9876543214	amit@gmail.com

2)

```
select customerID, policyID, startDate, endDate
from policyassignments;
```

Results | Messages

	customerID	policyID	startDate	endDate
1	5	1	2023-01-01	2024-01-01
2	2	2	2024-02-01	2025-02-01
3	1	3	2023-06-01	2024-06-01
4	4	4	2024-01-01	2026-01-01

3)

```
select policyName
from policies
where policyType = 'Health';
```

Results | Messages

	policyName
1	Health Plus
2	Health Gold

4)

```
select policyName
from policies
where premiumAmount > 10000
and durationYears = 1;
```

Results Messages

	policyName
1	Life Secure
2	Health Plus

5)

```
select distinct city
from agents;
```

Results Messages

	city
1	Hyderabad
2	Jaipur
3	Nagpur

6)

```
select policyName
from policies
where policyType = 'Health'
or policyType = 'Life'
or policyType = 'Motor';
```

Results Messages

	policyName
1	Life Secure
2	Health Plus
3	Motor Shield
4	Health Gold

7)

```
select policyName
from policies
where policyType in ('Health','Life','Motor');
```

Results Messages

	policyName
1	Life Secure
2	Health Plus
3	Motor Shield
4	Health Gold

8)

```
select firstName + ' ' + lastName as fullName
from customers
where DOB >= '2001-01-01'
and DOB <= '2020-12-31';
```

Results Messages

	fullName
1	Anita Sharma
2	Suresh Reddy
3	Amit Patel

9)

```
select firstName + ' ' + lastName as fullName
from customers
where DOB between '2001-01-01' and '2020-12-31';
```

Results Messages

	fullName
1	Anita Sharma
2	Suresh Reddy
3	Amit Patel

10)

```
select *
from claims
where claimStatus = 'Rejected';
```

Results Messages

	claimID	assignmentID	claimDate	claimAmount	claimStatus
1	2	2	2024-06-15	20000.00	Rejected

11)

```
select *
from agents
where city like '_a%';
```

Results Messages

	agentID	agentName	phone	city
1	2	Sunita Das	9123456781	Nagpur
2	3	Vikram Singh	9123456782	Jaipur

12)

```
select
max(claimAmount) as highestClaim,
min(claimAmount) as lowestClaim
from claims;
```

Results Messages

	highestClaim	lowestClaim
1	60000.00	20000.00

13)

```
select top 1 *
from claims
order by claimDate desc;
```

Results Messages

	claimID	assignmentID	claimDate	claimAmount	claimStatus
1	3	4	2024-08-01	60000.00	Approved

14)

```
update policies
set premiumAmount = premiumAmount * 1.10
where policyType = 'Health';
```

Messages

```
(2 rows affected)

Completion time: 2025-12-29T22:47:54.8069826+05:30
```

15)

```
delete from policyassignments
where endDate < getdate();
```

16)

```
select count(*) as rejectedClaims
from claims
where claimStatus = 'Rejected';
```

Results Messages

	rejectedClaims
1	1

17)

```
select
policyID,
policyName,
premiumAmount,
premiumAmount * 0.06 as localTaxes,
premiumAmount * 1.06 as premiumAmountWithTax,
premiumAmount / 12 as monthlyPremiumAmount
from policies;
```

Results Messages

	policyID	policyName	premiumAmou...	localTaxes	premiumAmountWithT...	monthlyPremiumAmount
1	1	Click to select the whole column	00	900.000000	15900.000000	1250.00
2	2	Health Plus	13200.00	792.000000	13992.000000	1100.00
3	3	Motor Shi...	8000.00	480.000000	8480.000000	666.6666
4	4	Health Gold	22000.00	1320.0000...	23320.000000	1833.3333

18)

```
alter table customers
add address varchar(100), city varchar(50);
```

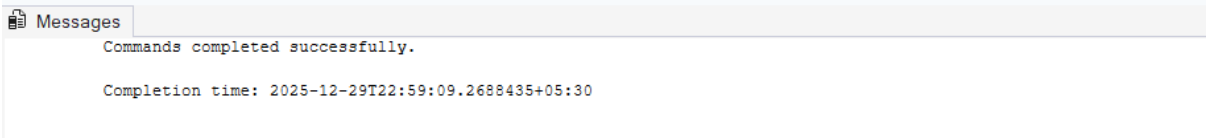
Messages

```
Commands completed successfully.

Completion time: 2025-12-29T22:57:28.2295994+05:30
```

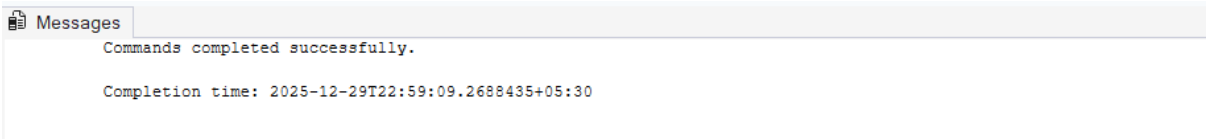
19)

```
alter table agents
add devOfId int;
```



20)

```
alter table agents
add constraint FK_agents_dev
foreign key (devOfId)
references agents(agentID);
```



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

1)

```
select p.policyName
from policies p
join policyassignments pa on p.policyID = pa.policyID
where pa.customerID = 5;
```

Results Messages

	policyName
1	Life Secure

2)

```
select c.firstName , p.policyName
from customers c
join policyassignments pa on c.customerID = pa.customerID
join policies p on pa.policyID = p.policyID;
```

Results Messages

	firstName	policyName
1	Amit	Life Secure
2	Anita	Health Plus
3	Ravi	Motor Shield
4	Priya	Health Gold

3)

```
select c.firstName , cl.claimAmount , cl.claimStatus
from customers c
join policyassignments pa on c.customerID = pa.customerID
join claims cl on pa.assignmentID = cl.assignmentID;
```

Results Messages

	firstName	claimAmount	claimStatus
1	Amit	30000.00	Approved
2	Anita	20000.00	Rejected
3	Priya	60000.00	Approved

4)

```
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;
```

Results Messages

	firstName	policyName	agentName	startDate	endDate
1	Amit	Life Secure	Ramesh Rao	2023-01-01	2024-01-01
2	Anita	Health Plus	Sunita Das	2024-02-01	2025-02-01
3	Ravi	Motor Shield	Vikram Singh	2023-06-01	2024-06-01
4	Priya	Health Gold	Ramesh Rao	2024-01-01	2026-01-01

5)

```
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;
```

Results Messages

	firstName	policyName	claimAmount	claimStatus	claimDate
1	Amit	Life Secure	30000.00	Approved	2023-05-10
2	Anita	Health Plus	20000.00	Rejected	2024-06-15
3	Priya	Health Gold	60000.00	Approved	2024-08-01

6)

```
select c.firstName , p.policyName
from customers c
left join policyassignments pa on c.customerID = pa.customerID
left join policies p on pa.policyID = p.policyID;
```

Results Messages

	firstName	policyName
1	Ravi	Motor Shield
2	Anita	Health Plus
3	Suresh	NULL
4	Priya	Health Gold
5	Amit	Life Secure

7)

```
select distinct c.firstName
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;
```

Results Messages

	firstName
1	Ravi
2	Suresh

8)

```
select c.firstName , sum(cl.claimAmount) as totalClaimAmount
from customers c
join policyassignments pa on c.customerID = pa.customerID
join claims cl on pa.assignmentID = cl.assignmentID
group by c.firstName;
```

Results Messages

	firstName	totalClaimAmount
1	Amit	30000.00
2	Anita	20000.00
3	Priya	60000.00

9)

```
select c.firstName , sum(cl.claimAmount) as totalClaimAmount
from customers c
join policyassignments pa on c.customerID = pa.customerID
join claims cl on pa.assignmentID = cl.assignmentID
group by c.firstName
having sum(cl.claimAmount) > 50000;
```

Results Messages

	firstName	totalClaimAmount
1	Priya	60000.00

10)

```sql
select a.agentName , count(pa.policyID) as policyCount
from agents a
left join policyassignments pa on a.agentID = pa.agentID
group by a.agentName;
```

Results Messages

	agentName	policyCount
1	Ramesh Rao	2
2	Sunita Das	1
3	Vikram Singh	1