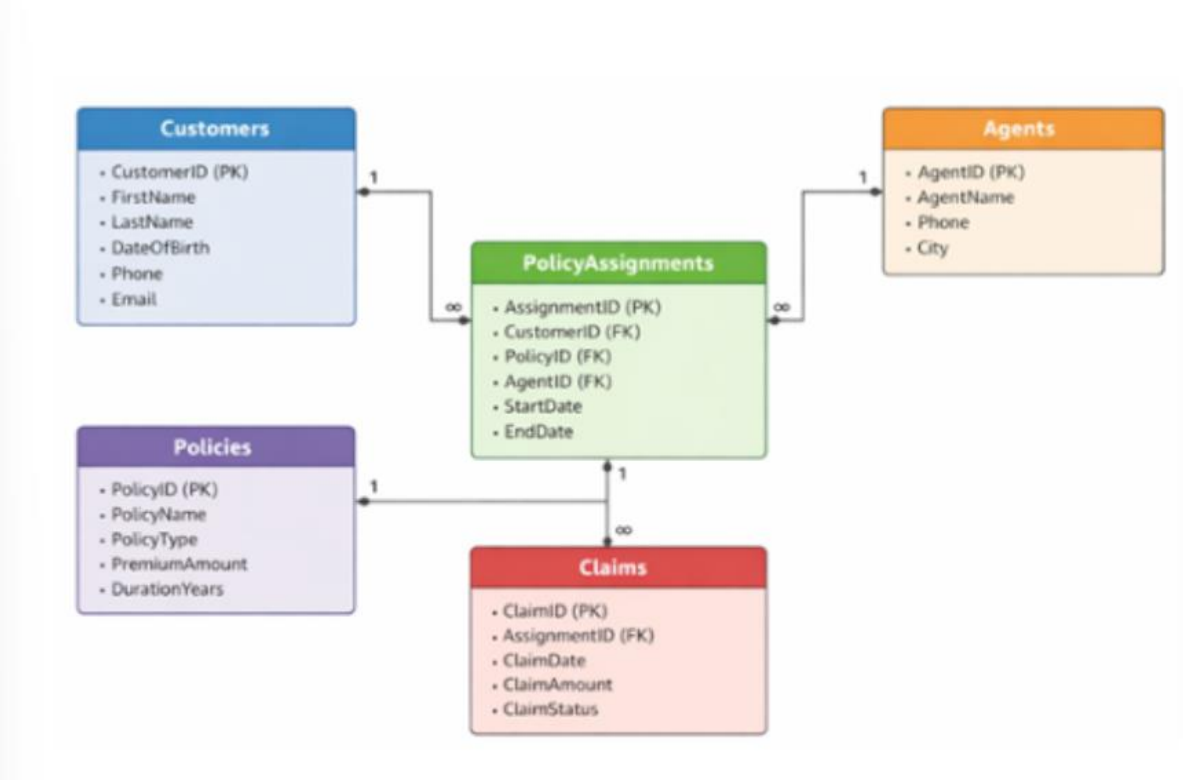
THE HARTFORD -SQL ASSIGNMENT (29-12-2025 Day-2)

ER-DIAGRAM:



1. **Create Database command.**
   Ans: Create database alphadb;
2. **Create table commands for all the tables with constraints, relationships etc.**
   Ans. 1.**Customer table creation-**
   create table Customers(CustomerID int identity(1,1) primary key not null,FirstName varchar(50), LastName varchar(50),DateOfBirth date,Phone varchar(50),Email varchar(50));

   Policies table creation-
   create table Policies(PolicyID int identity(1,1) primary key,policyName varchar(50),PolicyType varchar(50),PremiumAmount decimal(10,2),DurationYears int);

   Agents table creation-
   create table Agents(AgentID int identity(1,1) primary key ,AgentName varchar(50),phone varchar(50),city varchar(50));

PolicyAssignment table creation-

create table PolicyAssignments(AssignmentID int PRIMARY KEY, CustomerID INT, FOREIGN KEY(CustomerID) REFERENCES Customers(CustomerID),PolicyID INT, FOREIGN KEY(PolicyID) REFERENCES Policies(PolicyID),AgentID INT, FOREIGN KEY(AgentID) REFERENCES Agents(AgentID),StartDate date,EndDate date);

Claims table creation-

create table Claims(ClaimId int identity(1,1) primary key,AssignmentID int,foreign key(AssignmentID) REFERENCES PolicyAssignments(AssignmentID),ClaimDate date,ClaimAmount decimal(10,2),ClaimStatus varchar(50));

3.Insert commands for all tables.

Ans. **Customer table insertion:**

insert into Customers(FirstName,LastName,DateOfBirth,Phone,Email) values('Anand','Ch','2003-09-23','9573634476','anandch119@gmail.com');

insert into Customers(FirstName,LastName,DateOfBirth,Phone,Email) values('Rohith','A','2005-03-15','8919685247','reddyrohith757@gmail.com');

insert into Customers(FirstName,LastName,DateOfBirth,Phone,Email) values('Vivek','G','2006-02-05','8978515247','vivekg12@gmail.com'),('Sai','B','2003-04-01','9845612309','sai09@gmail.com'),('Ganesh','R','2004-05-16','7667584567','ganeshrr@gmail.com');

	CustomerID	FirstName	LastName	DateOfBirth	Phone	Email
1	1	Anand	Ch	2003-09-23	9573634476	anandch119@gmail.com
2	2	Rohith	A	2005-03-15	8919685247	reddyrohith757@gmail.com
3	4	Vivek	G	2006-02-05	8978515247	vivekg12@gmail.com
4	5	Sai	B	2003-04-01	9845612309	sai09@gmail.com
5	6	Ganesh	R	2004-05-16	7667584567	ganeshrr@gmail.com

Policies table insertion:

Insert into Policies(policyName,PolicyType,PremiumAmount,DurationYears) values ('suraksha','health',400000,2);

insert into Policies(policyName,PolicyType,PremiumAmount,DurationYears) values ('saksha','fire',500000,3);

insert into Policies(policyName,PolicyType,PremiumAmount,DurationYears) values ('vaibhavam','agriculture',600000,4),('athmanirbar','motor',30000,3),('vidhya','life',70000,1);

	PolicyID	policyName	PolicyType	PremiumAmount	DurationYears
1	1	suraksha	health	400000.00	2
2	2	saksha	fire	500000.00	3
3	3	vaibhavam	agriculture	600000.00	4
4	4	athmanirbar	motor	30000.00	3
5	5	vidhya	life	70000.00	1

Agents table creation:

insert into Agents(AgentName,phone,city) values('Abhilash','8765436723','Hyderabad'),('Ravi','8499977296','Bangaluru');

insert into Agents(AgentName,phone,city) values('Manish','9991234562','Hyderabad'),('Renuka','8499977222','Hyderabad'),('Pavan','6456734560','Bangaluru');

	AgentID	AgentName	phone	city
1	1	Abhilash	8765436723	Hyderabad
2	2	Ravi	8499977296	Bangalore
3	3	Manish	9991234562	Hyderabad
4	4	Renuka	8499977222	Hyderabad
5	5	Pavan	6456734560	Bangalore

PolicyAssignment table creation:

Insert into PolicyAssignments(AssignmentID,CustomerID,PolicyID,AgentID,StartDate ,EndDate) values(1,1,1,1,'2025-11-09','2025-12-26'),(2,3,2,2,'2025-12-10','2027-12-10');

insert into PolicyAssignments(AssignmentID,CustomerID,PolicyID,AgentID,StartDate ,EndDate) values(3,4,3,3,'2025-09-01','2028-12-09'),(4,5,4,4,'2025-08-10','2029-12-10'),(5,6,5,5,'2026-11-09','2027-04-12');

	AssignmentID	CustomerID	PolicyID	AgentID	StartDate	EndDate
1	1	1	1	1	2025-11-09	2025-12-26
2	2	2	2	2	2025-12-10	2027-12-10
3	3	4	3	3	2025-09-01	2028-12-09
4	4	5	4	4	2025-08-10	2029-12-10
5	5	6	5	5	2026-11-09	2027-04-12

Claims table creation:

insert into Claims(AssignmentID,ClaimDate,ClaimAmount,ClaimStatus) values(1,'2025-10-09',30000,'completed'),(2,'2025-12-01',40000,'rejected');

insert into Claims(AssignmentID,ClaimDate,ClaimAmount,ClaimStatus) values(3,'2025-11-09',40000,'accepted’),(4,'2026-12-01',50000,'rejected'),(5,'2026-01-12',60000,'rejected');

	ClaimId	AssignmentID	ClaimDate	ClaimAmount	ClaimStatus
1	1	1	2025-10-09	30000.00	accepted
2	2	2	2025-12-01	40000.00	rejected
3	3	3	2025-11-09	40000.00	accepted
4	4	4	2026-12-01	50000.00	rejected
5	5	5	2026-01-12	60000.00	rejected

4.Select commands

1. View all records Customers table.

Ans. select * from Customers;

	CustomerID	FirstName	LastName	DateOfBirth	Phone	Email
1	1	Anand	Ch	2003-09-23	9573634476	anandch119@gmail.com
2	2	Rohith	A	2005-03-15	8919685247	reddyrohith757@gmail.com
3	4	Vivek	G	2006-02-05	8978515247	vivekg12@gmail.com
4	5	Sai	B	2003-04-01	9845612309	sai09@gmail.com
5	6	Ganesh	R	2004-05-16	7667584567	ganeshrr@gmail.com

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

Ans. select CustomerID,PolicyID,StartDate,EndDate from PolicyAssignments;

	CustomerID	PolicyID	StartDate	EndDate
1	1	1	2025-11-09	2027-11-09
2	2	2	2025-12-10	2027-12-10
3	4	3	2025-09-01	2028-12-09
4	5	4	2025-08-10	2029-12-10
5	6	5	2026-11-09	2027-04-12

3. Display all policies of Health type.

Ans. select PolicyID,policyName from Policies where PolicyType='Health';

	PolicyID	policyName
1	1	suraksha

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

Ans. select PolicyID,policyName from Policies where DurationYears=1 and PremiumAmount>=10000;

	PolicyID	policyName
1	5	vidhya

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

Ans. select distinct city from Agents;

	city
1	Bangalore
2	Hyderabad

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

Ans.select PolicyID,policyName from Policies where PolicyType='Health' or PolicyType='motor' or PolicyType='life';

	PolicyID	policyName
1	1	suraksha
2	4	athmanirbar
3	5	vidhya

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

Ans.select PolicyID,policyName from Policies where PolicyType in ('Health','life','motor');

	PolicyID	policyName
1	1	suraksha
2	4	athmanirbar
3	5	vidhya

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

Ans.select Concat(FirstName,LastName) from Customers where DateOfBirth>='2001-01-01' and DateOfBirth<='2020-12-31';

1	AnandCh
2	RohithA
3	VivekG
4	SaiB
5	GaneshR

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

using between operator.

Ans. select Concat(FirstName,LastName) from Customers where DateOfBirth between '2001-01-01' and'2020-12-31';

1	AnandCh
2	RohithA
3	VivekG
4	SaiB
5	GaneshR

10.Display claims data where claim status is Rejected.

Ans. select ClaimId from Claims where ClaimStatus='rejected';

	ClaimId
1	2
2	4
3	5

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

Ans. select * from Agents where city like '_a%';

	AgentID	AgentName	phone	city
1	2	Ravi	8499977296	Bangalore
2	5	Pavan	6456734560	Bangalore

12. Display highest and lowest claimAmount from Claims table.

Ans. select Max(ClaimAmount) as highest,Min(ClaimAmount) as lowest from Claims;

	highest	lowest
1	60000.00	30000.00

13. Display latest claim record.

Ans. select top 1 * from Claims order by ClaimDate desc;

	ClaimId	AssignmentID	ClaimDate	ClaimAmount	ClaimStatus
1	4	4	2026-12-01	50000.00	rejected

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

Ans.update Policies set PremiumAmount=PremiumAmount*1.1 where PolicyType='health';

	PremiumAmount
1	400000.00

Before

	PremiumAmount
1	440000.00

After

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

Ans. delete from PolicyAssignments where EndDate<GETDATE();

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The DELETE statement conflicted with the REFERENCE constraint "FK__Claims__Assignme__5CD6CB2B". The conflict occurred in database "alphadb", table "dbo.Claims", colum
The statement has been terminated.
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We cant delete the record because DELETE a row from a parent table (likely Assignments) that is still being referenced by rows in the Claims table via the foreign key.

We can resolve this by using on delete cascade while making the schema.

16. Display no of claims rejected.

Ans. select count(*) from Claims where ClaimStatus='rejected';

	(No column name)
1	3

17. Display PolicyId, PolicyName, PremiumAmount along with computed fields not in table à 6% LocalTaxes, PremiumAmountWithTax and MonthlyPremiumAmount considering PremiumAmount is Annual.

Ans. select PolicyID,policyName,PremiumAmount,(PremiumAmount*0.06) localtax, PremiumAmount+(PremiumAmount*0.06) as withtax,PremiumAmount/12 as monthly from Policies ;

	PolicyID	policyName	PremiumAmount	localtax	withtax	monthly
1	1	suraksha	440000.00	26400.0000	466400.0000	36666.666666
2	2	saksha	500000.00	30000.0000	530000.0000	41666.666666
3	3	vaibhavam	600000.00	36000.0000	636000.0000	50000.000000
4	4	athmanirbar	30000.00	1800.0000	31800.0000	2500.000000
5	5	vidhya	70000.00	4200.0000	74200.0000	5833.333333

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

Ans. alter table Customers add city varchar(50),address varchar(50);

Column Name	Data Type	Allow Nulls
CustomerID	int	☐
FirstName	varchar(50)	☑
LastName	varchar(50)	☑
DateOfBirth	date	☑
Phone	varchar(50)	☑
Email	varchar(50)	☑
city	varchar(50)	☑
address	varchar(50)	☑
		☐

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

Ans. alter table Agents add DepOfId int;

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

Ans. alter table Agents add DeptOfId int, foreign key(DeptOfId) references Agents(AgentID);

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

1. List all Policies for a CustomerId 5.

Ans. select * from Policies AS p join PolicyAssignments as pa on p.PolicyID=pa.PolicyID where CustomerID=5;

	PolicyID	policyName	PolicyType	PremiumAmount	DurationYears	AssignmentID	CustomerID	PolicyID	AgentID	StartDate	EndDate
1	4	athmanirbar	motor	30000.00	3	4	5	4	4	2025-08-10	2029-12-10

2. View all customers with their policies.

Ans.select Concat(c.FirstName,c.LastName) as Fullname,p.PolicyID,p.policyName,p.PolicyType,p.PremiumAmount,pa.AgentID, a.AgentName,pa.StartDate,pa.EndDate from Policies AS p join PolicyAssignments as pa on p.PolicyID=pa.PolicyID join Customers as c on c.CustomerID=pa.CustomerID join Agents as a on a.AgentID=pa.AgentID;

	Fullname	PolicyID	policyName	PolicyType	PremiumAmount	AgentID	AgentName	StartDate	EndDate
1	AnandCh	1	suraksha	health	440000.00	1	Abhilash	2025-11-09	2025-12-26
2	RohithA	2	saksha	fire	500000.00	2	Ravi	2025-12-10	2027-12-10
3	VivekG	3	vaibhavam	agriculture	600000.00	3	Manish	2025-09-01	2028-12-09
4	SaiB	4	athmanirbar	motor	30000.00	4	Renuka	2025-08-10	2029-12-10
5	GaneshR	5	vidhya	life	70000.00	5	Pavan	2026-11-09	2027-04-12

3. View claims with customer name.

Ans. select concat(c.FirstName,'',c.LastName) as fullname, cl.ClaimID,cl.ClaimAmount,cl.ClaimStatus,p.StartDate,p.EndDate,cl.ClaimDate from PolicyAssignments as p join Customers as c on c.CustomerID=p.CustomerID join Claims as cl on p.AssignmentID=cl.AssignmentID;

	fullname	ClaimID	ClaimAmount	ClaimStatus	StartDate	EndDate	ClaimDate
1	AnandCh	1	30000.00	accepted	2025-11-09	2025-12-26	2025-11-21
2	RohithA	2	40000.00	rejected	2025-12-10	2027-12-10	2025-12-22
3	VivekG	3	40000.00	accepted	2025-09-01	2028-12-09	2025-11-09
4	SaiB	4	50000.00	rejected	2025-08-10	2029-12-10	2025-11-21
5	GaneshR	5	60000.00	rejected	2026-11-09	2026-12-26	2026-01-12

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

Ans. select c.FirstName,p.policyName,a.AgentName,pa.StartDate,pa.EndDate from Policies AS p join PolicyAssignments as pa on p.PolicyID=pa.PolicyID join

Customers as c on c.CustomerID=pa.CustomerID join Agents as a on a.AgentID=pa.AgentID;

	FirstName	policyName	AgentName	StartDate	EndDate
1	Anand	suraksha	Abhilash	2025-11-09	2025-12-26
2	Rohith	saksha	Ravi	2025-12-10	2027-12-10
3	Vivek	vaibhavam	Manish	2025-09-01	2028-12-09
4	Sai	athmanirbar	Renuka	2025-08-10	2029-12-10
5	Ganesh	vidhya	Pavan	2026-11-09	2026-12-26

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

Ans.selectc.FirstName,cl.ClaimAmount,cl.ClaimStatus,cl.ClaimDate,po.policyName from PolicyAssignments as p join Customers as c on c.CustomerID=p.CustomerID join Claims as cl on p.AssignmentID=cl.AssignmentID join Policies po on po.PolicyID=p.PolicyID;

	FirstName	ClaimAmount	ClaimStatus	ClaimDate	policyName
1	Anand	30000.00	accepted	2025-11-21	suraksha
2	Rohith	40000.00	rejected	2025-12-22	saksha
3	Vivek	40000.00	accepted	2025-11-09	vaibhavam
4	Sai	50000.00	rejected	2025-11-21	athmanirbar
5	Ganesh	60000.00	rejected	2026-01-12	vidhya

6. Display records of Customers with or without Policies.

Ans.SELECT c.CustomerID,c.FirstName,c.LastName,pa.PolicyID,pa.AssignmentID,pa.StartDate,pa.EndDate FROM Customers c LEFT JOIN PolicyAssignments pa ON c.CustomerID = pa.CustomerID;

	CustomerID	FirstName	LastName	PolicyID	AssignmentID	StartDate	EndDate
1	1	Anand	Ch	1	1	2025-11-09	2025-12-26
2	2	Rohith	A	2	2	2025-12-10	2027-12-10
3	4	Vivek	G	3	3	2025-09-01	2028-12-09
4	5	Sai	B	4	4	2025-08-10	2029-12-10
5	6	Ganesh	R	5	5	2026-11-09	2026-12-26

7. Display all Customers with NO Claims.

Ans. select c.FirstName from Customers as c left join PolicyAssignments as p on c.CustomerID=p.CustomerID left join Claims as cl on p.AssignmentID=cl.AssignmentID where cl.ClaimId is null;

	FirstName

8. Show CustomerName with Total Claim Amount per Customer.

Ans. select c.FirstName,sum(cl.ClaimAmount) from Customers as c left join PolicyAssignments as p on c.CustomerID=p.CustomerID left join Claims as cl on p.AssignmentID=cl.AssignmentID group by c.FirstName;

	FirstName	(No column name)
1	Anand	30000.00
2	Ganesh	60000.00
3	Rohith	40000.00
4	Sai	50000.00
5	Vivek	40000.00

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

Ans. select c.FirstName,sum(cl.ClaimAmount) from Customers as c left join PolicyAssignments as p on c.CustomerID=p.CustomerID left join Claims as cl

on p.AssignmentID=cl.AssignmentID group by c.FirstName having sum(cl.ClaimAmount)>50000;

	FirstName	(No column name)
1	Ganesh	60000.00

10. Display list with Agent Wise Policy Count.

Ans. SELECT a.AgentID, a.AgentName,COUNT(DISTINCT pa.PolicyID) AS PolicyCount FROM Agents a LEFT JOIN PolicyAssignments pa ON a.AgentID = pa.AgentID GROUP BY a.AgentID,a.AgentName;

	AgentID	AgentName	PolicyCount
1	1	Abhilash	1
2	2	Ravi	1
3	3	Manish	1
4	4	Renuka	1
5	5	Pavan	1