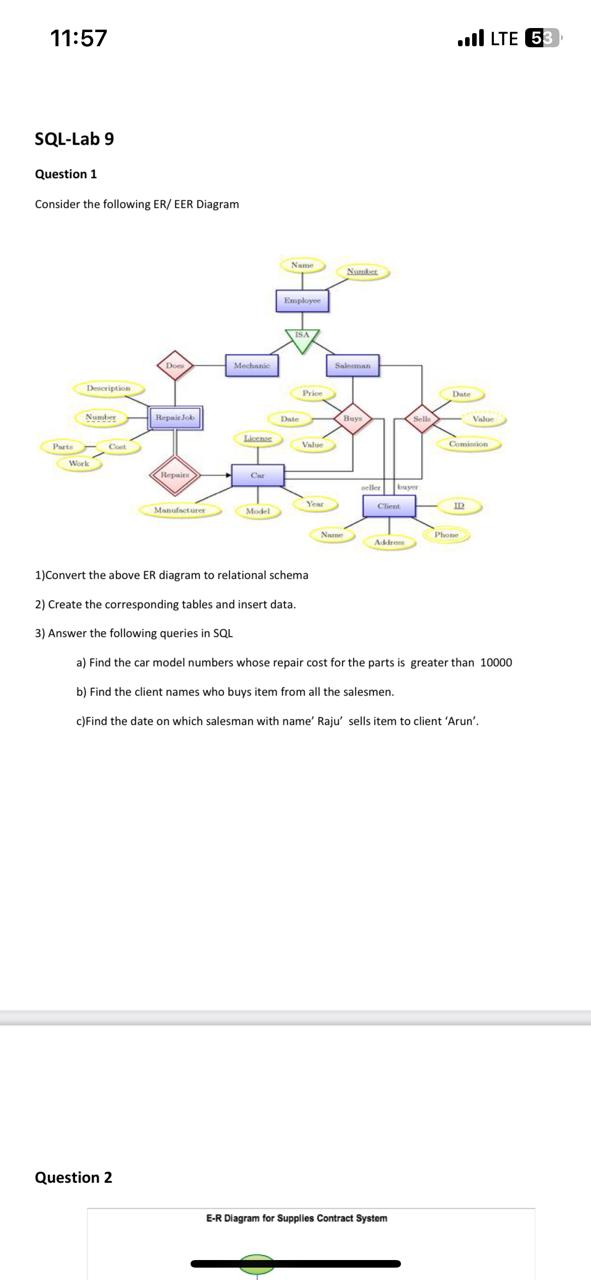
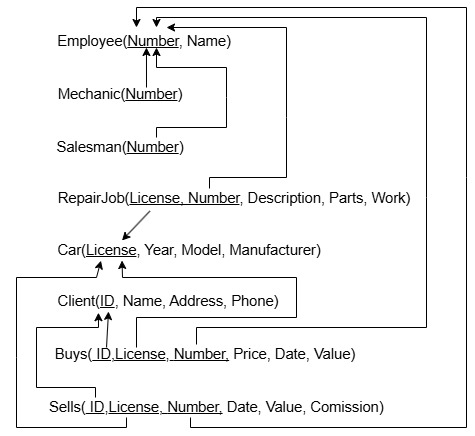
**LAB9**

Name : **R S Harish Kumar**

Roll no. : **AM.EN.U4AIE22042**



**Schema Diagram**



**Code**

*--QUESTION 1--*

*-- CREATE TABLE Employee\_lab9 (*

*-- Number INT PRIMARY KEY,*

*-- Name VARCHAR(100)*

*-- );*

*-- CREATE TABLE Mechanic\_lab9 (*

*-- Number INT PRIMARY KEY,*

*-- FOREIGN KEY (Number) REFERENCES Employee\_lab9(Number)*

*-- );*

*-- CREATE TABLE Salesman\_lab9 (*

*-- Number INT PRIMARY KEY,*

*-- FOREIGN KEY (Number) REFERENCES Employee\_lab9(Number)*

*-- );*

*-- CREATE TABLE Car\_lab9 (*

*-- License VARCHAR(50) PRIMARY KEY,*

*-- Year INT,*

*-- Model VARCHAR(50),*

*-- Manufacturer VARCHAR(50)*

*-- );*

*-- CREATE TABLE RepairJob\_lab9 (*

*-- License VARCHAR(50),*

*-- Number INT,*

*-- Description VARCHAR(255),*

*-- Parts INT,*

*-- Work INT,*

*-- PRIMARY KEY (License, Number),*

*-- FOREIGN KEY (License) REFERENCES Car\_lab9(License)*

*-- );*

*-- CREATE TABLE Client\_lab9 (*

*-- ID INT PRIMARY KEY,*

*-- Name VARCHAR(100),*

*-- Address VARCHAR(255),*

*-- Phone VARCHAR(15)*

*-- );*

*-- CREATE TABLE Buys\_lab9 (*

*-- Number INT,*

*-- License VARCHAR(50),*

*-- ID INT,*

*-- Price DECIMAL(10, 2),*

*-- Date DATE,*

*-- Value DECIMAL(10, 2),*

*-- PRIMARY KEY (Number, License, ID),*

*-- FOREIGN KEY (Number) REFERENCES Salesman\_lab9(Number),*

*-- FOREIGN KEY (License) REFERENCES Car\_lab9(License),*

*-- FOREIGN KEY (ID) REFERENCES Client\_lab9(ID)*

*-- );*

*-- CREATE TABLE Sells\_lab9 (*

*-- Number INT,*

*-- License VARCHAR(50),*

*-- ID INT,*

*-- Date DATE,*

*-- Value DECIMAL(10, 2),*

*-- Commission DECIMAL(10, 2),*

*-- PRIMARY KEY (Number, License, ID),*

*-- FOREIGN KEY (Number) REFERENCES Salesman\_lab9(Number),*

*-- FOREIGN KEY (License) REFERENCES Car\_lab9(License),*

*-- FOREIGN KEY (ID) REFERENCES Client\_lab9(ID)*

*-- );*

*-- -- Insert data into Employee\_lab9*

*-- INSERT INTO Employee\_lab9 VALUES (1, 'Raju'), (2, 'John'), (3, 'Mike'), (4, 'Arun');*

*-- -- Insert data into Mechanic\_lab9*

*-- INSERT INTO Mechanic\_lab9 VALUES (3);*

*-- -- Insert data into Salesman\_lab9*

*-- INSERT INTO Salesman\_lab9 VALUES (1), (2);*

*-- -- Insert data into Car\_lab9*

*-- INSERT INTO Car\_lab9 VALUES*

*-- ('A123', 2015, 'ModelX', 'Tesla'),*

*-- ('B456', 2018, 'ModelS', 'Tesla'),*

*-- ('C789', 2020, 'Civic', 'Honda');*

*-- -- Insert data into Client\_lab9*

*-- INSERT INTO Client\_lab9 VALUES*

*-- (101, 'Arun', 'Street 1', '9876543210'),*

*-- (102, 'Mike', 'Street 2', '9876543211');*

*-- -- Insert data into RepairJob\_lab9*

*-- INSERT INTO RepairJob\_lab9 VALUES*

*-- ('A123', 1, 'Engine Repair', 15000, 5),*

*-- ('B456', 2, 'Battery Replacement', 8000, 2);*

*-- -- Insert data into Buys\_lab9*

*-- INSERT INTO Buys\_lab9 VALUES*

*-- (1, 'A123', 101, 25000, '2024-12-01', 23000),*

*-- (2, 'B456', 102, 20000, '2024-12-02', 18000);*

*-- -- Insert data into Sells\_lab9*

*-- INSERT INTO Sells\_lab9 VALUES*

*-- (1, 'A123', 101, '2024-12-01', 23000, 500),*

*-- (1, 'C789', 102, '2024-12-03', 18000, 400),*

*-- (2, 'B456', 102, '2024-12-04', 19000, 300);*

*--1)*

*-- SELECT Car\_lab9.Model*

*-- FROM Car\_lab9*

*-- JOIN RepairJob\_lab9 ON Car\_lab9.License = RepairJob\_lab9.License*

*-- WHERE RepairJob\_lab9.Parts > 10000;*

*--2)*

*-- SELECT DISTINCT Client\_lab9.Name*

*-- FROM Client\_lab9*

*-- WHERE NOT EXISTS (*

*-- SELECT Salesman\_lab9.Number*

*-- FROM Salesman\_lab9*

*-- WHERE NOT EXISTS (*

*-- SELECT 1*

*-- FROM Buys\_lab9*

*-- WHERE Buys\_lab9.Number = Salesman\_lab9.Number AND Buys\_lab9.ID = Client\_lab9.ID*

*-- )*

*-- );*

*--3)*

*-- SELECT Sells\_lab9.Date*

*-- FROM Sells\_lab9*

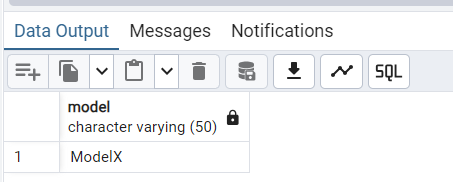
*-- JOIN Employee\_lab9 AS Salesman ON Sells\_lab9.Number = Salesman.Number*

*-- JOIN Client\_lab9 ON Sells\_lab9.ID = Client\_lab9.ID*

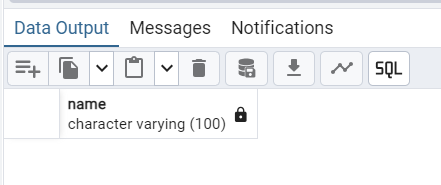
*-- WHERE Salesman.Name = 'Raju' AND Client\_lab9.Name = 'Arun';*

**Output**

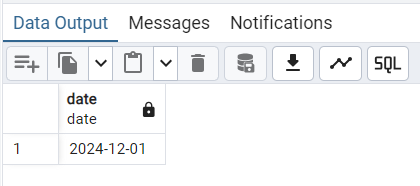
1.



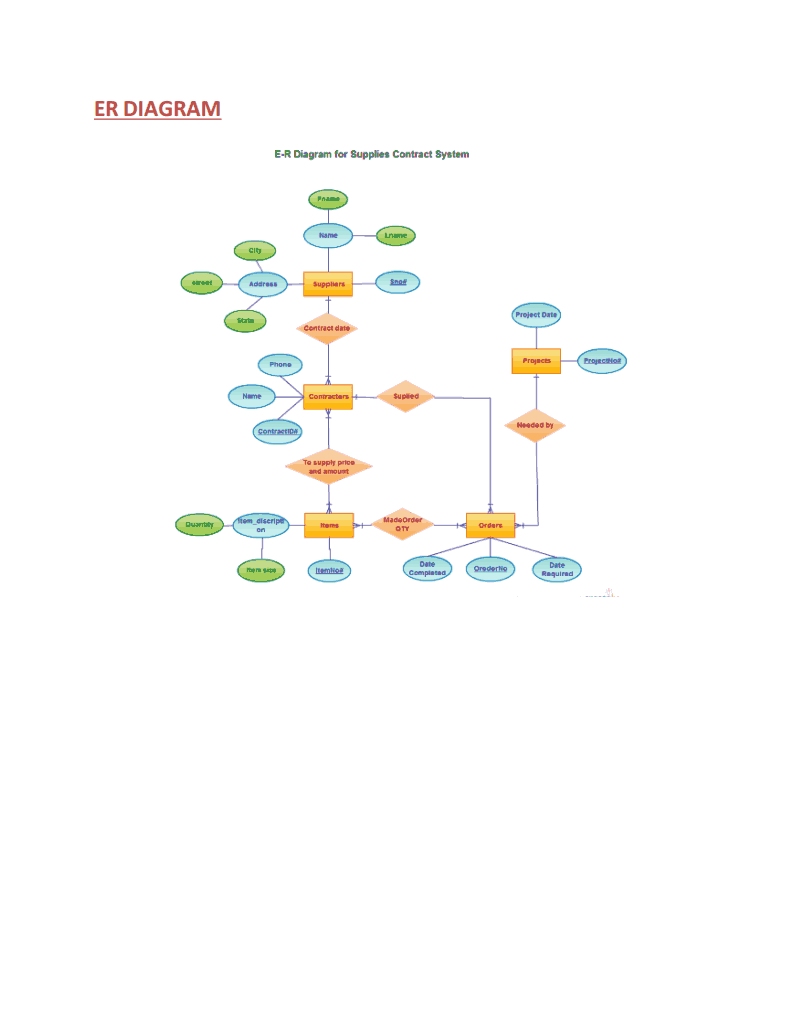
2.



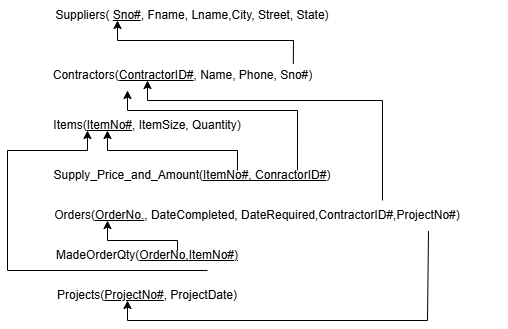
3.



2.



**Schema Diagram**



**CODE**

*-- -- Create Suppliers Table*

*-- CREATE TABLE Suppliers\_lab9 (*

*-- Sno INT PRIMARY KEY,*

*-- Fname VARCHAR(50),*

*-- Lname VARCHAR(50),*

*-- City VARCHAR(50),*

*-- Street VARCHAR(50),*

*-- State VARCHAR(50)*

*-- );*

*-- -- Create Contractors Table*

*-- CREATE TABLE Contractors\_lab9 (*

*-- ContractorID INT PRIMARY KEY,*

*-- Name VARCHAR(50),*

*-- Phone VARCHAR(15),*

*-- Sno INT,*

*-- FOREIGN KEY (Sno) REFERENCES Suppliers\_lab9(Sno)*

*-- );*

*-- -- Create Items Table*

*-- CREATE TABLE Items\_lab9 (*

*-- ItemNo INT PRIMARY KEY,*

*-- ItemSize VARCHAR(20),*

*-- Quantity INT*

*-- );*

*-- -- Create Supply\_Price\_and\_Amount Table*

*-- CREATE TABLE Supply\_Price\_and\_Amount\_lab9 (*

*-- ItemNo INT,*

*-- ContractorID INT,*

*-- PRIMARY KEY (ItemNo, ContractorID),*

*-- FOREIGN KEY (ItemNo) REFERENCES Items\_lab9(ItemNo),*

*-- FOREIGN KEY (ContractorID) REFERENCES Contractors\_lab9(ContractorID)*

*-- );*

*-- -- Create Projects Table*

*-- CREATE TABLE Projects\_lab9 (*

*-- ProjectNo INT PRIMARY KEY,*

*-- ProjectDate DATE*

*-- );*

*-- -- Create Orders Table (with FK for ProjectNo)*

*-- CREATE TABLE Orders\_lab9 (*

*-- OrderNo INT PRIMARY KEY,*

*-- DateCompleted DATE,*

*-- DateRequired DATE,*

*-- ContractorID INT,*

*-- ProjectNo INT,*

*-- FOREIGN KEY (ContractorID) REFERENCES Contractors\_lab9(ContractorID),*

*-- FOREIGN KEY (ProjectNo) REFERENCES Projects\_lab9(ProjectNo)*

*-- );*

*-- -- Create MadeOrderQty Table*

*-- CREATE TABLE MadeOrderQty\_lab9 (*

*-- OrderNo INT,*

*-- ItemNo INT,*

*-- PRIMARY KEY (OrderNo, ItemNo),*

*-- FOREIGN KEY (OrderNo) REFERENCES Orders\_lab9(OrderNo),*

*-- FOREIGN KEY (ItemNo) REFERENCES Items\_lab9(ItemNo)*

*-- );*

*-- INSERT INTO Suppliers\_lab9 (Sno, Fname, Lname, City, Street, State) VALUES*

*-- (1, 'Kiran', 'Patel', 'Mumbai', 'MG Road', 'Maharashtra'),*

*-- (2, 'John', 'Doe', 'Delhi', 'Ring Road', 'Delhi'),*

*-- (3, 'Alice', 'Smith', 'Bangalore', 'MG Road', 'Karnataka');*

*-- INSERT INTO Contractors\_lab9 (ContractorID, Name, Phone, Sno) VALUES*

*-- (101, 'Kiran Constructions', '1234567890', 1),*

*-- (102, 'BuildTech', '9876543210', 2),*

*-- (103, 'PrimeWorks', '5556667777', 3);*

*-- INSERT INTO Items\_lab9 (ItemNo, ItemSize, Quantity) VALUES*

*-- (1, 'Large', 500),*

*-- (2, 'Medium', 300),*

*-- (3, 'Small', 200);*

*-- INSERT INTO Supply\_Price\_and\_Amount\_lab9 (ItemNo, ContractorID) VALUES*

*-- (1, 101),*

*-- (2, 101),*

*-- (3, 102),*

*-- (1, 103),*

*-- (2, 103);*

*-- INSERT INTO Projects\_lab9 (ProjectNo, ProjectDate) VALUES*

*-- (1001, '2024-11-01'),*

*-- (1002, '2024-11-05'),*

*-- (1003, '2024-11-10');*

*-- INSERT INTO Orders\_lab9 (OrderNo, DateCompleted, DateRequired, ContractorID, ProjectNo) VALUES*

*-- (1, '2024-12-01', '2024-12-15', 101, 1001),*

*-- (2, '2024-11-20', '2024-12-05', 102, 1002),*

*-- (3, '2024-11-15', '2024-12-10', 103, 1003);*

*-- INSERT INTO MadeOrderQty\_lab9 (OrderNo, ItemNo) VALUES*

*-- (1, 1),*

*-- (1, 2),*

*-- (2, 3),*

*-- (3, 1),*

*-- (3, 2);*

*--QUERY 1*

*-- SELECT DISTINCT Projects\_lab9.ProjectNo*

*-- FROM Projects\_lab9*

*-- JOIN Orders\_lab9 ON Projects\_lab9.ProjectNo = Orders\_lab9.ProjectNo*

*-- JOIN Contractors\_lab9 ON Orders\_lab9.ContractorID = Contractors\_lab9.ContractorID*

*-- WHERE Contractors\_lab9.Name LIKE '%Kiran%';*

*-- -- Insert Suppliers*

*-- INSERT INTO Suppliers\_lab9 (Sno, Fname, Lname, City, Street, State) VALUES*

*-- (4, 'David', 'Johnson', 'Pune', 'JM Road', 'Maharashtra'),*

*-- (5, 'Sara', 'Williams', 'Chennai', 'Anna Salai', 'Tamil Nadu');*

*-- -- Insert Contractors*

*-- INSERT INTO Contractors\_lab9 (ContractorID, Name, Phone, Sno) VALUES*

*-- (104, 'David Constructions', '9999999999', 4),*

*-- (105, 'Sara Enterprises', '8888888888', 5);*

*-- -- Insert Items*

*-- INSERT INTO Items\_lab9 (ItemNo, ItemSize, Quantity) VALUES*

*-- (4, 'Extra Large', 100),*

*-- (5, 'Small', 50);*

*-- -- Insert Supply\_Price\_and\_Amount*

*-- INSERT INTO Supply\_Price\_and\_Amount\_lab9 (ItemNo, ContractorID) VALUES*

*-- (1, 104), -- Item 1 supplied by David*

*-- (2, 104), -- Item 2 supplied by David*

*-- (3, 105), -- Item 3 supplied by Sara*

*-- (4, 105), -- Item 4 supplied by Sara*

*-- (5, 104), -- Item 5 supplied by David*

*-- (5, 105); -- Item 5 supplied by Sara*

*-- -- Insert Projects*

*-- INSERT INTO Projects\_lab9 (ProjectNo, ProjectDate) VALUES*

*-- (1004, '2024-12-01'),*

*-- (1005, '2024-12-05');*

*-- -- Insert Orders*

*-- INSERT INTO Orders\_lab9 (OrderNo, DateCompleted, DateRequired, ContractorID, ProjectNo) VALUES*

*-- (4, '2024-12-03', '2024-12-10', 104, 1004), -- David's order for project 1004*

*-- (5, '2024-12-06', '2024-12-15', 105, 1005); -- Sara's order for project 1005*

*-- -- Insert MadeOrderQty*

*-- INSERT INTO MadeOrderQty\_lab9 (OrderNo, ItemNo) VALUES*

*-- (4, 1), -- Order 4 contains Item 1*

*-- (4, 2), -- Order 4 contains Item 2*

*-- (5, 3), -- Order 5 contains Item 3*

*-- (5, 4), -- Order 5 contains Item 4*

*-- (5, 5); -- Order 5 contains Item 5*

*--QUERY 2*

*-- SELECT COUNT(\*) AS NumberOfProjects*

*-- FROM (*

*-- SELECT Projects\_lab9.ProjectNo*

*-- FROM Projects\_lab9*

*-- JOIN Orders\_lab9 ON Projects\_lab9.ProjectNo = Orders\_lab9.ProjectNo*

*-- JOIN MadeOrderQty\_lab9 ON Orders\_lab9.OrderNo = MadeOrderQty\_lab9.OrderNo*

*-- JOIN Supply\_Price\_and\_Amount\_lab9 ON MadeOrderQty\_lab9.ItemNo = Supply\_Price\_and\_Amount\_lab9.ItemNo*

*-- GROUP BY Projects\_lab9.ProjectNo*

*-- HAVING COUNT(DISTINCT Supply\_Price\_and\_Amount\_lab9.ContractorID) = (SELECT COUNT(\*) FROM Suppliers\_lab9)*

*-- ) AS AllSuppliersProjects;*

*--QUERY 3*

*-- SELECT DISTINCT Items\_lab9.ItemNo, Items\_lab9.ItemSize*

*-- FROM Items\_lab9*

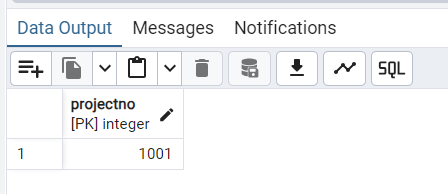
*-- JOIN MadeOrderQty\_lab9 ON Items\_lab9.ItemNo = MadeOrderQty\_lab9.ItemNo*

*-- JOIN Orders\_lab9 ON MadeOrderQty\_lab9.OrderNo = Orders\_lab9.OrderNo*

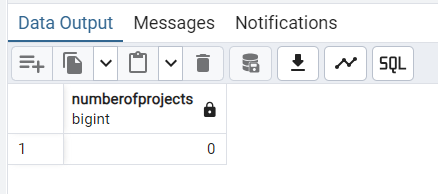
*-- WHERE Orders\_lab9.ProjectNo = 1001;*

**OUTPUTS**

**1.**



2.



3.

