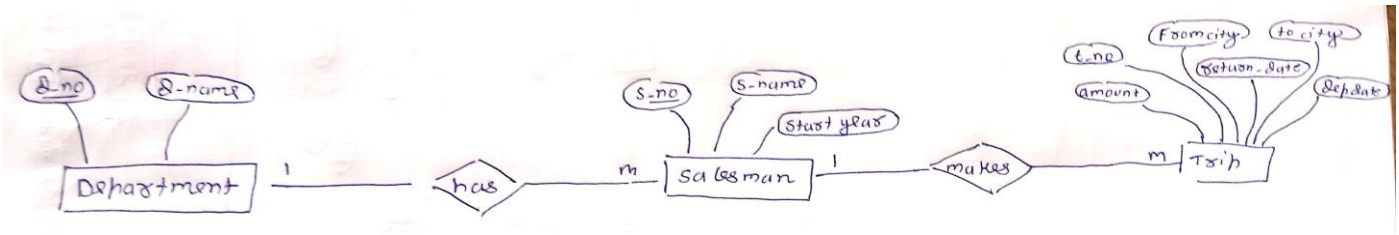
Q.1) Practical Questions on PostgresSQL Consider the following database

Salesman (sno, s_name, start_year)
Trip (tno, from_city, to_city, departure_date, return_date, amount) Dept (deptno, dept_name)
The relationship is as follows. Dept-salesman 1 To M Salesman-Trip 1 ToM

a) Draw the ER diagram for above relational schema and normalize it in 3NF.



b) Create the above database in 3NF form in PostgresSQL using constraints.

```
CREATE TABLE Dept (deptno SERIAL PRIMARY KEY, dept_name VARCHAR(50) NOT NULL UNIQUE);

CREATE TABLE Salesman (sno SERIAL PRIMARY KEY, s_name VARCHAR(50) NOT NULL, start_year
INTEGER NOT NULL, deptno INTEGER REFERENCES Dept(deptno) NOT NULL);

CREATE TABLE Trip (tno SERIAL PRIMARY KEY, from_city VARCHAR(50) NOT NULL, to_city
VARCHAR(50) NOT NULL, departure_date DATE NOT NULL, return_date DATE NOT NULL, amount
DECIMAL(10,2) NOT NULL, sno INTEGER REFERENCES Salesman(sno) NOT NULL);

INSERT INTO Dept (dept_name) VALUES ('Marketing'), ('Sales'), ('Engineering');

INSERT INTO Salesman (s_name, start_year, deptno) VALUES ('Mr. Patil', 2015, 1), ('Ms. Sharma', 2018, 2), ('Mr.
Khan', 2020, 3);

INSERT INTO Trip (from_city, to_city, departure_date, return_date, amount, sno) VALUES ('Mumbai', 'Delhi',
'2024-04-01', '2024-04-05', 75000.00, 1), ('Chennai', 'Kolkata', '2024-03-15', '2024-03-20', 50000.00, 2), ('Bangalore',
'Hyderabad', '2024-02-10', '2024-02-14', 80000.00, 3);
```

Q2.) Using above database, solve the following queries:

a) Find trip details whose salesman ‘Mr.Patil’.

```
SELECT t.tno, t.from_city, t.to_city, t.departure_date, t.return_date, t.amount FROM Trip t INNER JOIN
Salesman s ON t.sno = s.sno WHERE s.s_name = 'Mr.Patil';
```

b) List department wise trip details

```
SELECT d.dept_name, t.tno, t.from_city, t.to_city, t.departure_date, t.return_date, t.amount FROM Trip t INNER
JOIN Salesman s ON t.sno = s.sno INNER JOIN Dept d ON s.deptno = d.deptno;
```

c) Find salesman with trip details whose expense is between 50000 to 100000 expenses.

```
SELECT s.sno, s.s_name, s.start_year, t.tno, t.from_city, t.to_city, t.departure_date, t.return_date, t.amount
FROM Trip t INNER JOIN Salesman s ON t.sno = s.sno WHERE t.amount BETWEEN 50000 AND 100000;
```

d) Update trip from city ‘Pune’ to ‘Delhi’ of Mr.Patil

```
UPDATE Trip SET from_city = 'Delhi' WHERE sno = (SELECT sno FROM Salesman WHERE s_name =
'Mr.Patil');
```