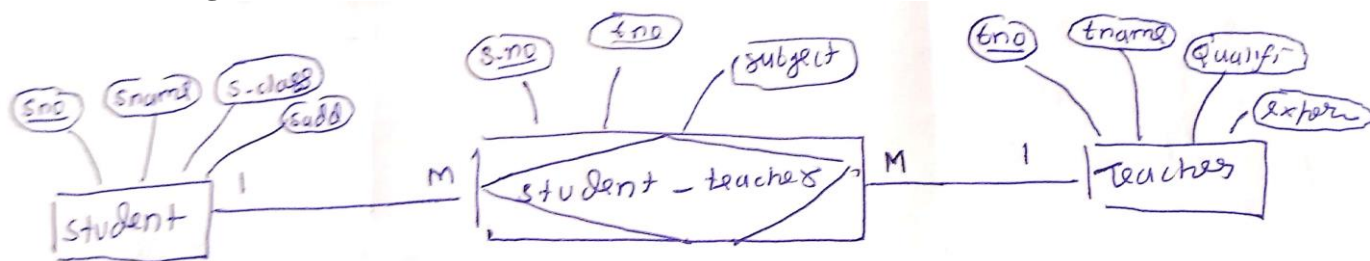**Q.1) Practical Questions on PostgresSQL**
Consider the following database
Student (sno, s_name, s_class, s_addr)
Teacher (tno, t_name, qualification, experience)
Student-Teacher: M-M with descriptive attributes Subject.

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 Student (sno SERIAL PRIMARY KEY, s_name VARCHAR(50), s_class VARCHAR(20), s_addr VARCHAR(100));

CREATE TABLE Teacher (tno SERIAL PRIMARY KEY, t_name VARCHAR(50), qualification VARCHAR(50), experience INT);

CREATE TABLE Student_Teacher (sno INT REFERENCES Student(sno), tno INT REFERENCES Teacher(tno), Subject VARCHAR(50), PRIMARY KEY (sno, tno));

INSERT INTO Student (s_name, s_class, s_addr) VALUES ('Rahul', 'F.Y.B.C.A', 'Address 1, Pune'),('Priya', 'S.Y.B.Sc', 'Address 2, Mumbai'),('Amit', 'T.Y.B.Com', 'Address 3, Delhi'),('Riya', 'F.Y.B.A', 'Address 4, Bangalore'),('Suresh', 'S.Y.B.Tech', 'Address 5, Chennai');

INSERT INTO Teacher (t_name, qualification, experience) VALUES('Mr. Kumar', 'M.Tech', 5),('Mrs. Patel', 'M.Sc', 8),('Dr. Sharma', 'Ph.D', 12),('Ms. Gupta', 'M.A', 6),('Mr. Singh', 'B.Ed', 3);

INSERT INTO Student_Teacher (sno, tno, Subject) VALUES(1, 1, 'DBMS'),(2, 2, 'Physics'),(3, 3, 'Maths'),(4, 4, 'English'),(5, 5, 'History');

Q2.) Using above database, solve the following queries

a) List teacher details who taught subject 'DBMS'
    SELECT * FROM Teacher WHERE tno IN (SELECT tno FROM Student_Teacher WHERE Subject = 'DBMS');

b) Find student details with teacher name who taught class 'F.Y.B.C.A'
    SELECT s.*, t.t_name FROM Student s JOIN Student_Teacher st ON s.sno = st.sno JOIN Teacher t ON st.tno = t.tno WHERE s.s_class = 'F.Y.B.C.A';

c) Find the maximum experience details of teacher.
    SELECT * FROM Teacher ORDER BY experience DESC LIMIT 1;

d) Update teacher qualification to 'Ph.D' of 'Mr.Kumar'.
    UPDATE Teacher SET qualification = 'Ph.D' WHERE t_name = 'Mr. Kumar';