Lab 6

Consider the schema given below to answer the following queries using join conditions (E.g. select * from A,B where A.b = B.b)

Department (depname, location, budget)
Instructor (id, iname, designation, salary, depname)
Course (CCode, ctitle, credits, depname)
Section (section_id, CCode, SEM, year, room_no)
Teach (id, section_id, CCode, SEM, year)
Student (Sid, sname, date_of_birth, depname)
Take (Sid, section_id, CCode, SEM, year, grade)

Consider the query:

Find the name of the instructor and the id of the course they teach.

Write down the difference between the following SQL queries for the above question:

1. **select** *name, ccode* **from** *instructor, teach;*
2. **select** *name, ccode* **from** *instructor, teach* **where** *instructor.ID*= *teaches.ID*;
3. **select** *name, ccode* **from** *instructor* **natural join** *teach*;
4. **select instructor.***name,* teach.*ccode* **from** *instructor* **natural join** *teach*;
5. **select** * **from** *student* **join** *take* **on** *student.ID*= *take.ID*;
6. **select** * **from** *student, take* **where** *student.ID*= *take.ID*;
7. **select** *student.ID* **as** *ID, name, dept name, tot cred, ccode, sec id, semester, year, grade* **from** *student* **join** *take* **on** *student.ID*= *take.ID;*

Add a record in teach table where an instructor teaches a course belonging to another department and not his department.

1. **select** *name, title* **from** *instructor* **natural join** *teach, course* **where** *teach.ccode*= *course.ccode*;
2. **select** *name, title* **from** *instructor* **natural join** *teach* **natural join** *course*;
3. **select** *name, title* **from** (*instructor* **natural join** *teach*) **join** *course* **using** (*ccode*);

Add a student to the student table who have not taken any course. So avoid entering **this** student's data in take table.

1. **select** * **from** *student* **natural left outer join** *take*;
2. **select** *ID* **from** *student* **natural left outer join** *take* **where** *ccode* **is** *null*;

3. **select * from** *take* **natural right outer join** *student;*

a. Display the name of the instructors along with the location of the department in which they work.
b. Display the name of the instructors along with the name of the courses they teach.
c. Add a column gender to the instructor table and update with data.
d. List female instructor name, course name and ccode of courses she teach.
e. List the name of the course and the budget of the department that offers it.
f. List the name of instructors who teaches a course titled ‘Operating Systems’.
g. List department name and count of instructors in each departments that have more than 2 instructors, ordered by department name.
h. Find the name of the instructor and the name of the course taught by him in 2016.
i. Find the name of the instructors of the CS department and the name of the course taught by him in 2016.
j. Find the name of all the students who have registered for a course titled ‘DBMS’ and got an ‘A’ grade.
k. Find the ID of students who have registered for a DBMS course in 2017.
l. For each instructor, display the total number of courses taught by him.
m. For each instructor, display the total number of courses taught by him in 2017.
n. Find the name of the instructors working in the departments located in Main block building.
o. Find the name of the instructor who taught C programming for CS department in 2nd semester 2017.
p. Find the number of times each course has been taught by each instructor.