**Exercise 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 (dept\_name, building, budget)

Instructor (ID, name, dept\_name, salary)

Course (Course\_id, title, dept\_name, credits)

Student (ID, name, state, dept\_name)

Pre-req\_Course (Course\_id, prereq\_courseID)

Advisor (Student\_id, instructor\_id)

Register (Student\_id, Course\_id, grade)

Section (course\_id, sec\_id, semester, year, building, room\_no)

Teaches (ins\_id, course\_id, section\_id, semester, year).

1. Display the name of the instructors along with the name of the building in which they work.
2. Display the name of the instructors along with the name of the courses they teach.
3. Add a column gender to the instructor table and update with data.
4. List female instructor name, course name and course id of courses she teach.
5. List the name of the course and the budget of the department that offers it.
6. List the name of instructors who teaches a course titled ‘Operating Systems’.
7. List department name and count of instructors in each departments that have more than 2 instructors, ordered by department name.
8. Find the name of the instructor and the name of the course taught by him in 2016.
9. Find the name of the instructors of the CS department and the name of the course taught by him in 2016.
10. Find the name of all the students who have registered for a course titled ‘DBMS’ and got an ‘A’ grade.
11. Find the ID of students who have registered for a DBMS course in 2017.
12. For each instructor, display the number of courses taught by him.
13. For each instructor, display the number of courses taught by him in 2017.
14. Find the name of the instructors working in the departments located in Main block building.
15. Find the name of the instructor and the id of the course they teach. (use join).

Now for the above query, try this:

Select name, ccode from instructor NATURAL JOIN teaches;

Is there any difference between the two?

1. Insert a record into the teaches table in such a way that the instructor teach a course from another department and not his own department.
2. Find the name of the instructor and the name of the course they teach. (Use join with conditions)
3. Do the above query using NATURAL JOIN
4. Now try this query:

Select name, title from (instructor NATURAL JOIN teaches) join course using (course\_id);

Write down what is the difference in B, C, D.

1. Insert students into the student table who have not taken any course. So their id is not there in the register table.

Write down the difference between the following queries:

Select \* from student **natural join** register;

Select \* from student **natural left outer join** register;

Select \* from register **natural right outer join** student;

1. Find the name of the instructor who taught C programming for CS department in 2nd semester 2017.
2. Find the number of times each course has been taught by each instructor.