# LAB3

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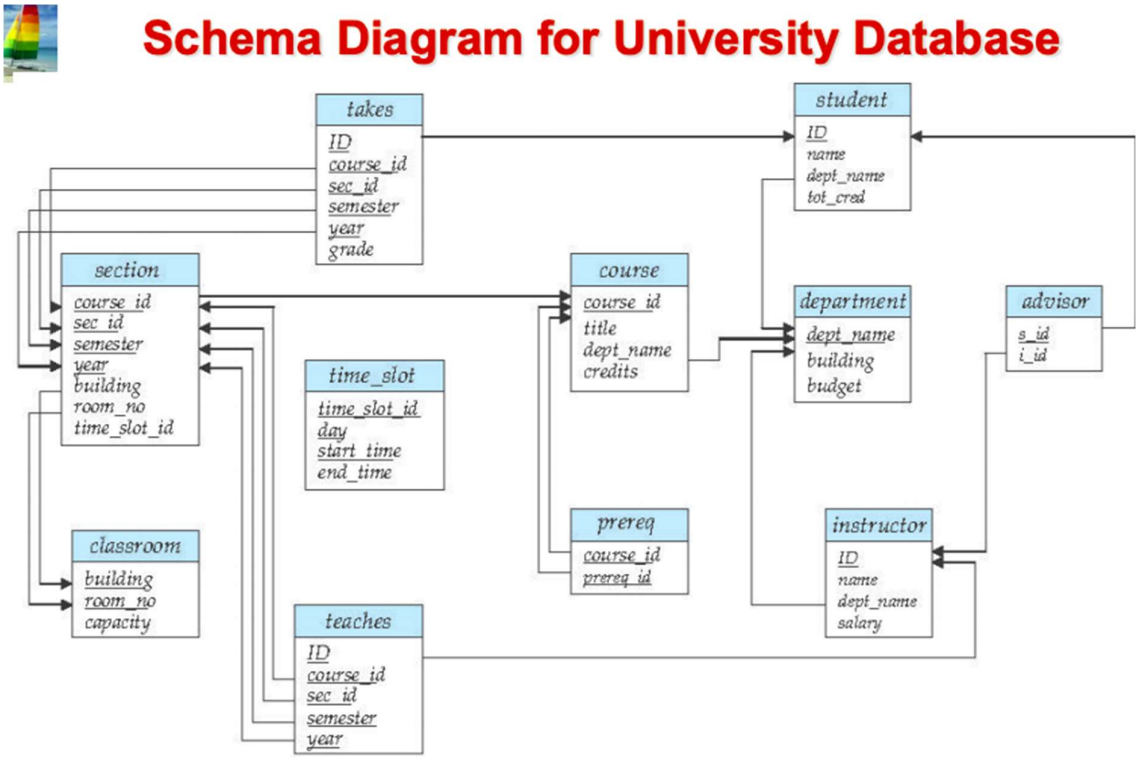
Section -A




1.

```
SELECT course_id FROM section WHERE semester = 'Fall' AND year = 2009
UNION ALL
SELECT course_id FROM section WHERE semester = 'Spring' and year = 2010;
```

2.

```
SELECT course_id FROM section WHERE semester = 'Fall' AND year = 2009
INTERSECT
SELECT course_id FROM section WHERE semester = 'Spring' and year = 2010;
//intersect all gave an error
```

3.

```
SELECT course_id FROM section WHERE semester = 'Fall' AND year = 2009

MINUS

SELECT course_id FROM section WHERE semester = 'Spring' and year = 2010;
```

4.

```
SELECT course.course_id FROM course WHERE course.course_id NOT IN (SELECT takes.course_id
FROM takes);
```

5.

```
SELECT s1.course_id FROM section s1 WHERE semester = 'Fall' AND year = 2009 AND s1.course_id IN
(SELECT s2.course_id FROM section s2 WHERE semester = 'Spring' and year = 2010 );
```

6.

```
select count(unique takes.id) from takes where takes.course_id IN (select teaches.course_id from
teaches where teaches.ID=10101);
```

7.

```
SELECT s1.course_id FROM section s1 WHERE semester = 'Fall' AND year = 2009 AND s1.course_id
not IN (SELECT s2.course_id FROM section s2 WHERE semester = 'Spring' and year = 2010 );
```

8.

```
select  unique student.name from student where student.name in(select instructor.name from
instructor );
```

9.

```
select i1.name from instructor i1 where i1.salary>some(select i2.salary from instructor i2 where
i2.dept_name='Biology' );
```

10.

```
SELECT i1.name FROM instructor i1 WHERE i1.salary > ALL(SELECT i2.salary FROM instructor i2
WHERE i2.dept_name = 'Biology' );
```

11.

```
select dept_name from(select dept_name, avg(salary) dept_avg FROM instructor GROUP BY
dept_name) WHERE dept_avg =all (select MAX(dept_avg) FROM (select dept_name, AVG(salary)
dept_avg FROM instructor GROUP BY dept_name));
```

12.

```
SELECT department.dept_name FROM department WHERE department.budget < (SELECT avg(salary) avgsal FROM instructor);
```

13.

```
SELECT course_id FROM section WHERE semester = 'Fall' AND year = 2009 AND EXISTS(SELECT course_id FROM section WHERE semester = 'Spring' and year = 2010);
```

14. 
```
SELECT DISTINCT S.ID, S.name FROM student S WHERE NOT EXISTS((SELECT course_id FROM course WHERE dept_name = 'Biology') MINUS(SELECT T.course_id FROM takes T WHERE S.ID = T.ID));
```

//no output for this in the small relations file

15.

```
SELECT course_id from (SELECT course_id, count (*) count FROM section WHERE section.year=2009 group by course_id) WHERE count<=1;
```

16.

```
Select id from (select id, count(id) as count_id from takes t natural join course where dept_name='Comp. Sci.' group by id) where count_id>1;
```

17.

```
select dept_name, avg_salary from (select dept_name, avg (salary) as avg_salary from instructor group by dept_name) where avg_salary > 42000;
```

18.

```
CREATE VIEW all_courses as SELECT section.course_id, building, room_number FROM section, course WHERE semester = 'Fall' AND year = 2009 AND section.course_id = course.course_id AND dept_name = 'Physics';
```

19.

```
SELECT course_id FROM all_courses;
```

20.

```
CREATE VIEW department_total_salary as SELECT dept_name, SUM(salary) sum_sal FROM instructor GROUP BY dept_name;
```