Cs17b005 Assignment-2

Queries

1. Get the list name and empId of professors who never gave an ‘S’ grade
2. Get the list of name and Id of students who are either lectured or advised by the senior-most professor(s) in the institute
3. Get the maximum, minimum and average number of courses each student took in the institute over all years (Condition - only consider students who did at least one course)
4. Same as above but relax the condition
5. Get the list of professors’ name and empId ordered by the number of students he taught who does not belong to his department
6. Get the list of students who enrolled for a course without enrolling for its prerequisites, if present, ever
7. Get the list of students who has 10 or more total course credits and still managed to get ‘S’ or ‘A’ in all of them
8. Get the list of professors’ name and phone number who advise students with more than one ‘U’ grades
9. Get the list of departments’ name and Id ordered by total number of women (students and professors)

Corresponding SQL queries

1. select p.name,p.empId from professor p where not exists (select * from teaching t,enrollment e where t.empId = p.empId and t.sem = e.sem and t.year = e.year and t.courseId = e.courseId and e.grade = 'S')
2. select s.name, s.rollNo from student s,(select y.empId from professor y where y.startYear <= all (select x.startYear from professor x)) p where s.advisor = p.empId or exists (select * from enrollment e where e.rollNo = s.rollNo and exists (select * from teaching t where t.sem = e.sem and t.year = e.year and t.courseId = e.courseId and t.empId = p.empId))
3. select max(d.nc),min(d.nc),avg(d.nc) from (select count(e.courseId) as nc,e.rollNo from enrollment e group by e.rollNo) d
4. select max(d.nc),min(d.nc),avg(d.nc) from ((select count(e.courseId) as nc from enrollment e group by e.rollNo) union all (select 0 as nc from student s where s.rollNo not in (select e.rollNo from enrollment e))) d
5. (select p.name,p.empId,count(e.rollNo) as nds from professor p, teaching t,enrollment e,student s where p.empId = t.empId and t.courseId = e.courseId and t.sem = e.sem and t.year = e.year and s.rollNo = e.rollNo and s.deptNo <> p.deptNo group by p.empId) union all (select p.name,p.empId,0 as nds from professor p where not exists (select * from teaching t,enrollment e,student s where p.empId = t.empId and t.courseId = e.courseId and t.sem = e.sem and t.year = e.year and s.rollNo = e.rollNo and s.deptNo <> p.deptNo)) order by nds desc
6. select distinct s.name,s.rollNo from student s, enrollment e,prerequisite p where s.rollNo = e.rollNo and p.courseId = e.courseId and exists(select * from prerequisite x where x.courseId = p.courseId and x.prereqCourse not in (select y.courseId from enrollment y where y.rollNo=s.rollNo))
7. select l.name, l.rollNo, l.tc from (select x.name, x.rollNo, sum(c.credits) as tc from (select s.name, s.rollNo from student s where not exists (select * from enrollment e where e.rollNo = s.rollNo and e.grade <> 'S' and e.grade <> 'A')) x, enrollment e, course c where x.rollNo = e.rollNo and e.courseId = c.courseId group by x.rollNo) l where l.tc >= 10
8. select distinct p.name, p.phone from professor p, (select s.rollNo, count(e.courseId) as uc, s.advisor from student s, enrollment e where e.rollNo = s.rollNo and e.grade = 'U' group by s.rollNo) x where x.advisor = p.empId and x.uc >= 2
9. select a.name, a.deptId, a.fs + b.fp as tw from
10. ((select d.name, d.deptId, count(s.rollNo) as fs from department d, student s where s.deptNo = d.deptId and s.sex = 'female' group by d.deptId) union (select d.name, d.deptId, 0 as fs from department d where not exists(select * from student s where s.deptNo = d.deptId and s.sex = 'female'))) a, ((select d.name, d.deptId, count(p.empId) as fp from department d, professor p where p.deptNo = d.deptId and p.sex = 'female' group by d.deptId) union (select d.name, d.deptId, 0 as fp from department d where not exists(select * from professor p where p.deptNo = d.deptId and p.sex = 'female'))) b where a.deptId = b.deptId order by tw desc