

## Quiz3 – Solutions

1. Based on *Student database*, you are expected to implement each query that carries out the operations given below.

**Faculty**(FacultyID, Name, DeanRegNo)

**Department**(DepartmentID, Name, HeadRegNo, FacultyNo)

**Student**(StudentNo, Name, Surname, Sex, DateofBirth, EduPeriod, DepartmentNo)

**Instructor**(InstructorRegNo, Name, Surname, Sex, Position, DepartmentNo)

**Course**(CourseID, CourseName, THour, PHour, Credit, DepartmentNo)

**Section**(CourseID, SectionID, Inst\_inCharge)

**Stu\_Course**(StudentNo, CourseID, SectionID, MO, Grade)

- a) Find out the number, name, and surname of the students who have taken all courses offered by “Computer” department.

```
select StudentNo, StudentName, StudentSurname from student where StudentNo in
(select student_StudentNo from student_course where
student_course.course_CourseID in (select CourseID from course, department where
course.department_DepartmentID=department.DepartmentID and
department.DepartmentName='Computer') group by student_StudentNo having
count(*)=(select count(*) from course, department where
course.department_DepartmentID=department.DepartmentID and
department.DepartmentName='Computer'))
```

- b) For each department stored in database, find out the summation of difference between theoretical and practical hours of the course offered by that department.

```
select department.DepartmentName, sum(CourseTheoreticalH-CoursePracticalH) as
Difference from course, department where course.department_DepartmentID
=department.DepartmentID group by DepartmentName
```

- c) Find out the number, name, and surname of the students whose average grade is over 50 (include 50) and department is either *Computer* or *Electric*. Note: Consider only mandatory courses taken for calculation of average grade. (Mandatory is abbreviated as *M* in database).

```
select StudentNo, StudentName, StudentSurname from student, department where
(department.DepartmentName="Computer" or
department.DepartmentName="Electric") and
student.department_DepartmentID=department.DepartmentID and student.StudentNo
in (select student_StudentNo from student_course where Man_or_Opt="M" group by
student_StudentNo having avg(grade)>=50);
```

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- d) Find out id and name of the courses whose all sections are given by only one research assistant. In other words, find out such a course's id and name that its sections are not taught by more than one research assistant. Note: A course having a single section should also be displayed if it is provided by a research assistant. (Research assistant is abbreviated as RA in database)

```
select CourseID, CourseName from course where CourseID in (select course_CourseID
from (select course_CourseID, count(*) from section, instructor group by
course_CourseID, instructor_InstructorRegNo) as temptbl group by course_CourseID
having count(course_CourseID)=1 ) and CourseID in (select distinct(course_CourseID)
from section, instructor where instructor.InstructorPosition="RA" and
section.instructor_InstructorRegNo=instructor.InstructorRegNo)
```