Middle East Technical University | Department of Computer Engineering

# CENG 351

Data Management and File Structures

Fall '2016-2017

SQL-LAB DEMO

Duration: 60 Minutes

## 1 Specifications

You are given the following database schema.

Student (StudentId, Name, Address, Status, Gpa)
Professor (ProfessorId, Name, DeptID, Age)
Course (CourseId, DeptID, CourseName)
Transcript (StudentId, CourseId, Semester, Score)
Teaching (CourseId, Semester, ProfessorId)

## 2 Questions

Prepare appropriate SQL queries for given definitions.

1. (15 pts.) List names of professors who taught a CENG (Computer Engineering) course without being a computer engineering professor. (List distinct "Name"s in ascending order)
2. (15 pts.) List names of all students who have taken both the 'Introduction to C Programming' course and 'Electrical Circuits Laboratory' course. (List "Name"s in ascending order)
3. (15 pts.) List names and ages of all CENG (Computer Engineering) professors and also list name and age of the professors who ever taugh a Computer Engineering course. (List "Name"s and "Age"s, where names are in ascending order)
4. (15 pts.) List names and GPA's of students whose GPA is higher than that of all Senior Students.(List "Name"s and "Gpa"s, where names are in ascending order)
5. (20 pts.) List StudentIds and average Scores of students who have taken a course in 2013-2014 academic year and their average score is greater than 50 ($> 50$) in that year. (List "StudentId"s and 2013-2014 academic year average "Score"s where StudentIds are in ascending order)
   Hint: 2013-2014 academic year corresponds to semester F2013 and semester S2014.
6. (20 pts.) List names of all students who have taken all EE (Electrical and Electronics Eng.) courses.(List "Name"s in ascending order)

For clarification, sample instances of these tables are given below:

| StudentId | Name | Address | Status | Gpa |
|---|---|---|---|---|
| 1 | Martin Prince | Eskişehir yolu, Ankara | Senior | 2.5 |
| 2 | Lisa Simpson | İstanbul yolu, Ankara | Junior | 3.5 |
| 3 | Milhouse Van Houten | Ümitköy, Ankara | Senior | 2.7 |
| 4 | Nelson Muntz | Keçiören, Ankara | Senior | 2 |
| 5 | Ralph Wiggum | Yenimahalle, Ankara | Freshman | 2.5 |
| 6 | Todd Flanders | Yenimahalle, Ankara | Sophomore | 2.8 |

An instance of Student table

| ProfessorId | Name | DeptId | Age |
|---|---|---|---|
| 1 | Waylon Smithers | CENG | 35 |
| 2 | Edna Krabappel | EE | 42 |
| 3 | Hans Moleman | CENG | 63 |
| 4 | Joe Quimby | ME | 45 |
| 5 | Julius Hibbert | METE | 50 |
| 6 | Troy McClure | EE | 35 |

An instance of Professor table

| CourseID | DeptId | CourseName |
|---|---|---|
| CENG100 | CENG | Computer Engineering Orientation |
| CENG230 | CENG | Introduction to C Programming |
| CENG223 | CENG | Discrete Computational Structures |
| EE201 | EE | Circuit Theory I |
| EE213 | EE | Electrical Circuits Laboratory |
| METE201 | METE | Materials Science I |
| METE202 | METE | Materials Science II |
| ME202 | ME | Manufacturing Technologies |

An instance of Course table

| StudentId | CourseId | Semester | Score |
|---|---|---|---|
| 1 | EE213 | F2013 | 20 |
| 1 | EE213 | F2014 | 60 |
| 1 | CENG230 | S2014 | 65 |
| 2 | CENG230 | F2013 | 85 |
| 2 | ME202 | F2013 | 40 |
| 3 | EE213 | S2014 | 90 |
| 3 | EE201 | S2014 | 10 |
| 4 | EE213 | F2013 | 52 |
| 4 | CENG230 | F2015 | 55 |
| 5 | ME202 | F2013 | 49 |
| 5 | CENG230 | S2014 | 53 |
| 6 | EE213 | F2014 | 78 |
| 4 | EE201 | F2013 | 50 |

An instance of Transcript table

| CourseId | Semester | ProfessorId |
|---|---|---|
| CENG100 | F2013 | 1 |
| EE201 | S2014 | 2 |
| CENG230 | F2015 | 2 |
| CENG230 | S2014 | 2 |
| ME202 | F2013 | 4 |
| METE201 | F2014 | 5 |
| CENG230 | F2013 | 5 |
| EE213 | F2013 | 2 |
| EE213 | F2014 | 2 |
| EE213 | S2014 | 6 |

An instance of Teaching table

# 3 Regulations

1. Use **Chromium** web browser.
2. DO NOT forget to put semicolon(;) after your queries!
3. You are not allowed to use **LIMIT** clause in your queries.