Assignment #3 - **University Preference System**

Due date: 14th May Thursday, 23:59

Goal

In this assignment, you are asked to design a database model to organize a university preference system. The detailed scenario and business rules are given in the below.

Scenario and Business Rules

In this system, there are a list of students who will get into university according to their scores in university examination. Each university has information such as university_id, name, address, e-mail address, city, university type (state or private), year of foundation. Each university is made up of various faculties which have faculty_id, name, e-mail address. Under each faculty, a number of departments are placed and they have information such as department_id, name, e-mail address, language (English or Turkish), education type (formal (*öö*) or evening education (*iö*)), quota, the quota for top ranked students, education period, minimum score in 2019, minimum order in 2019. Students have personal identification number (ID), name, surname, examination score, the ranking of the student in the exam, the position of the student in high school (top ranked student or not), three university preferences of student (the department_id's). The system will help students determine whether they can get into any department of a university or not.

a) Construct an ER diagram based on the preceding statements. Draw your diagram with Dia (http://dia-installer.de/download/linux.html.en) (Or with another tool of your choice, as long as the ER is in the format that is practiced in the lecture.) Don't forget to define the relationships, cardinalities, cardinality limits and participations (mandatory or optional).
b) Assign the attributes to the appropriate entities. Indicate primary key and foreign key attributes.
c) According to a and b, create your database and tables. Insert some sample meaningful example records to each table. Meaningful examples should at least to answer d's queries. If we do not get results while testing your code with your examples, you will lose 5 points for each non-working query.
d) Write the SQLs of the following queries:
    1) Find the university names which are located in the cities whose name starts with "İ" and founded after 1990.
    2) Find the universities which include "Engineering" and "Medicine" Faculties.
    3) Find the count of faculties according to university types.
    4) Find the departments that contain "engineering" and are the type of "iö".
    5) Find the top five departments with the longest education period and the highest score.
    6) Find the most preferred 4-year departments.

7) List the students who prefer the Department of Computer Engineering as their first choice according to their exam score in a descending order.
8) Update the Faculty of Engineering in Dokuz Eylül University to be located in Izmir Technical University.
9) Extend the current education period of the departments under the Faculty of Law by one year.
10) Delete the faculties and departments in İzmir University.

Submission

Submission will be via Github.

- Invitation link: **https://classroom.github.com/a/0MARrktc**
- After accepting the invitation, your repository will be created automatically for this assignment. Then, you can commit the database model and scripts into this repository.
- Name your source files xxx.png (database model) and xxx.sql (SQL answers), where xxx is your student ID. If you don't follow the naming rules, a penalty applies (10 pts)
- Late submission is not accepted.

Honesty

Your submissions will be scanned among each other as well as the Internet repository. Any assignments that are over the similarity threshold of a system for Detecting Software Similarity will get zero. We strongly encourage you not to submit your assignment rather than a dishonest submission.

Grading policy

- Database design & ER diagram 35%
- Primary and foreign keys, data types 10%
- Insert script 5%
- SQL queries 50%

For Questions

For any questions about the assignment please use Classroom systems comments under Assignment announcement. Before asking your question, please check carefully previous questions and answers, where similar questions were already asked by someone else already answered.

- No private questions via email will be answered!!!
- We will try to answer any of your questions as soon as possible, except the ones "Hocam my code does not work, can you fix it" or "I have implemented it but it does not work, can you look at it". Debuggers are far more suitable options.

Good luck!!!

Read all of the instructions carefully, if you find something UNCLEAR, please ask help to CLARIFY it!