

**Database Management  
2018-2019  
Midterm Homework: Social Resume Database  
(Do the homework with your 2-to-4 members team. Due date is 20-21 December 2018)**

In this homework, you will integrate two database models given as a startup kit. The first one is similar to Facebook database model and the second one resembles to LinkedIn database model.

After analyzing the database models with their original applications (Facebook and LinkedIn, respectively), you are expected to:

**ANALYSIS**

1. Write a brief explanation using your own words (in English or in Turkish) (1 A4 pages for each of them) about these applications in terms of their scope.
2. Write an analysis report for each of the database model/application:
  - a. What is the aim of each application?
  - b. What are the main entities of them?
  - c. What are the characteristics of each entity?
  - d. What relationships exists among the entities?
  - e. What are the constraints related to entities, their characteristics and the relationships among them?

**DESIGN-CONCEPTUAL DESIGN**

3. Create an EER diagram for each of the application. Try to use enhanced/extended features of ER modeling. Do not use any tool. You can use any drawing application with the right legend for ER modeling. The output of this step is 2 EER diagrams, one for Facebook and the other one for LinkedIn.

**DESIGN-LOGICAL MODEL**

4. Convert each EER diagram into relational model using the methodology that will be introduced in your course.
5. Integrate the relational models into the social resume database. Your integration methodology should try to reuse the constructs designed. You can redesign or extend the initial designs.

**IMPLEMENTATION-PHYSICAL MODEL**

6. Write down the appropriate SQL scripts (DDL statements) for creating the database and its relational model. You can select any of the DBMS you wish.
7. Populate the database you just created again using SQL script file loaded with sample tuples. (The tables should have enough number of tuples for the SELECT statements to be run accordingly.)
8. Write down 3 triggers for 3 different tables. Triggers should be meaningful.

9. Write down 3 check constraints and 3 assertions. Check constraints and assertions should be meaningful.
10. Write down the following SQL statements:
  - a. Write sample INSERT, DELETE and UPDATE statements for 3 of the tables you have chosen.
  - b. Write 10 SELECT statements for the database you have implemented.
    - i. 3 of them should use just one table.
    - ii. 4 of them should use minimum 2 tables.
    - iii. 3 of them should use minimum 3 tables.

GRADING:

Only Facebook or LinkedIn database implementation: 50 points.

Social resume database implementation 100 points.

Facebook Database Model (not original – It may have design problems. Please use it as a startup kit.)



