Middle East Technical University

CENG 302

Introduction to Database Management Systems

Fall 2021-2022

Homework 1 - EER Diagram

Due Date: 17 November 2021, Wednesday

You, as the lead database designer of a software company, are given the following requirements for a database regarding recruitment and career related services for academic and scientific jobs. The requirements of the system are given as follows:

1. Specifications

- The recruiters can be either universities or research institutes.
  - Each has organization name, organization registration number, address, city, country, contact information (name, surname, job title, e-mail, phone)
- Job adverts are posted by recruiters. They can be either standard or premium.
  - Each advertisement has a unique id, title, description, job type (e.g., lecturer, research fellow, professor, PhD studentship), city, country, publication date, application closing date, category consisting of main category (e.g., engineering, education, science) and sub-category (e.g., biology, economics, computer eng.) and affiliated recruiter information. Job types, categories and sub-categories are predefined in the system.
  - Each job advert requires a specific fee based on its type (standard or premium) and the number of days it will be listed on the web site.
  - Premium job advertisement appears at the top of any job advertisement list. It has an organization logo and allows up to eight discipline categories and sub-categories. A recruiter can view the number of the jobseekers' visits if the advert is premium.
- Jobseekers can be registered to the system.
  - Registered users are defined in the system with a title, name, surname, e-mail, nationality, birth date, phone, address, preferred discipline categories and sub-categories (up to 5) and countries currently authorized to work.
  - Each registered user can upload a resume. A resume is defined by a name, profile summary, current job title, experience (in years), job type sought, minimum salary, highest qualification, language skills including language and its level, and relocation preference.
  - Registered users may prefer to be notified based on their preferences when a new related advertisement is on live.
  - Any user may subscribe with an e-mail to receive newsletters.
  - Any user can search for the job adverts.
  - Registered jobseekers can save the jobs they are interested in and can view the list later. They can apply for the active jobs by attaching a resume and they may include a cover letter for their applications.

- o An application history is kept for each registered jobseekers. Application history is defined by the job title, recruiter, date of application and application status (applied, rejected, or affiliated).
- Recruiters can search for the resumes that match their requirements. They can save the search results with a name for the future review. For each candidate in the search result, recruiters can view and manage the candidates' resumes. Information defined and saved by the recruiters is invisible to the owner of the resume. However, the number of views for each resume is provided to the owner without giving the name of the recruiters. For managing the resumes:
  - o Each recruiter can add a resume to a folder.
  - o Each recruiter can rate (hot, warm, cold, not rated, rejected) a candidate's resume for a particular position.
  - o Each recruiter can define status of the resume saved. Status can be resume received, resume reviewed, interview, offer and affiliated.
  - o Each recruiter can add note for the resume.
- Universities and research institutes may organize academic activities including conferences, workshops and summer schools.
  - o Each activity has a name, description, category, registration cost, registration deadline, venue, date (start and end dates) and web site.
  - o Each conference has a submission deadline, author notification deadline, early registration,
  - o Each summer school has a capacity, organizer information, contact e-mail and program.
  - o Users may prefer to be notified in a related conference/workshop/summer school.
- Universities may offer online training programs through the web site. Each program has title, description, program, category, start date, end date, trainer information (name, surname and e-mail), name of the university, and registration fee.
  - o Trainees can enroll in to the online training programs by paying the registration fee. Registration is needed to enroll a program and users can access the training system via their e-mail and password.

  A training program requires minimum ten number of students.
  - o Successful trainees receive an e-certificate.
  - o A training history is kept for the users with the title of the program, grade and certificate.

2. Submission

- Please send your EER diagram in a single pdf document. You should use https://app.diagrams.net/ (former name: draw.io) to draw your diagram.
- Name your file as follows (id should be yours):

hw1_1234567.pdf

Note: Your submissions should be readable, so please check before submitting it.
If you feel necessary, you may insert additional attributes expressed by the relation requirements for a correct solution.

3. **Regulations for HW1**

- Try to use a small number of tables as possible.
- Follow the notation given in the lecture slides to draw an EER diagram.
- The assignment must be completed individually; copying from others is strictly forbidden.
- You have to submit your homework as a soft copy through Odtuclass.