CME2202 Data Organization & Management
Assignment #3

Vaccination System

Due: 25th June, 11:59 pm

Goal:

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

Scenario and Business Rules:

In this system, there are some people who will be vaccinated in a medical center. Each person has information such as id, name, surname, gender, age, hes code, city, district, and full address. They have also an application named HES including the information such as hes code, person name, person surname, gender, age, state of health ("risky" or "risk-free"), residence address, phone number, vaccination info ("vaccinated" or "unvaccinated"). There are several medical centers where citizens can be vaccinated. Each medical center has some information such as id, name, city, district, and full address. Vaccination is done by healthcare professionals in medical centers, and they have also id, name, and surname information in addition to which medical center he/she is employed. The system should keep track of every vaccination information (vaccinated person, the selected vaccine type, vaccination date, the healthcare professional who is responsible for the vaccination). Initially, there are two vaccine types defined in the system: "Biontech" and "Sinovac" produced in Germany and China, respectively.

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 be 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 person(s) who was/were vaccinated after 16.06.2021 in the cities whose name starts with "G" or "V".

2) Find the healthcare professionals who were responsible for vaccinating the "Biontech" vaccine to the people who are elder than 50.
3) Add a new column named "Country_Code" to the table keeping the vaccine information based on country name (i.e. if the counrty name is Turkey, then the county code is "TR")
4) Find the number of people who were vaccinated according to each vaccine type.
5) Find the youngest person who was vaccinated with "Sinovac" in "Dokuz Eylül University Hospital".
6) Find the selected vaccine type, vaccination date and the assigned medical center for the person whose name "Ali Aslan".
7) Find the most risky city according to state of health.
8) Update the state of health of the person whose phone number is "05534849876" as "Risky".
9) Delete the people over 65 who have not yet been vaccinated.
10) Add a new vaccine type named "Sputnik V" produced in Russia.

Documentation

In this assignment, in line documentation (in xxx.txt) is expected, as well as good coding practices such as consistent naming, proper usage of indentation and high readability of code.

Submission

- Name your source files xxx.png (ER diagram), xxx.txt (SQL Queries) and xxx.sql (Your Database) 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

- ER diagram 40%
- Primary and foreign keys, data types 5%
- Insert script 5%
- SQL queries 50%

For Questions

For any questions about the assignment please write under the topic "Homework3 Questions" in the Forum on the SAKAI platform. Before asking your question, please check carefully previous questions and answers, where similar questions that were asked by someone else were 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!