COMP20070 MySQL DB assignment (2023-24): Hospital Database

Purpose: The purpose of the assignment is the implementation of an application that stores data in a MySQL database.

STEP 1: create a new database and name it with a name composed of your surname and UCD student number (example: rossi123456)**. Do not use either capital letters or any special character (e.g., apostrophe, etc.).**

STEP 2: your database will represent the following scenario: "Hospitals advertise positions which require specific skills (e.g., nursing, administrative, etc.). Candidates may be invited to interviews for the positions".

Your database must include the following information and **may include any other information that you consider necessary for representing the concepts and implementing the queries listed below:**

- **Hospital details:** hospital identifier, hospital name, address, and telephone number.
- **Candidate details:** candidate identifier, firstname, surname, address, telephone number, skills.
- **Position details:** position identifier, type of position, hospital advertising the position, and skills required.
- **Interview details:** You must decide what information should be used to best represent this concept based on the constraints and information provided below.
- **Constraints:**
    - One hospital can request many interviews for a position.
    - One candidate can be invited to many interviews in relation to a position.
    - One hospital can hire many candidates in relation to a position.
    - Each candidate can have many skills.
    - Each position can require many skills.

NOTE: *You must create table(s) and relationships that will allow you to represent the fact that interviews occur on particular dates. Your database should also represent whether a candidate is offered a position.*

STEP 3: For every table in your database, create a stored procedure that includes a parametric query that allows you to insert a new row in such a table.

STEP 4: Implement the following queries (some of which are parametric) using stored procedures:

1. Find the hospitals with a given hospital identifier.
2. Find the hospitals with a given name.
3. Find the candidates with a given surname.
4. Find the candidates who have at least one skill required by a given position identifier.
5. Find the number of candidates that have been offered a position.
6. Find the positions requiring a given skill.
7. Find the number of positions that require nursing skills.
8. Find the positions sorted according to the hospitals who are advertising them.
9. Find the interviews that occurred on a given date.
10. Find the identifier of candidates that were interviewed only on a specific date.
11. Find the name and identifier of candidates that were interviewed at least twice.

STEP 5: export your database onto a self-contained .sql file **which should have the same name as your database** (example: rossi123456.sql).

STEP 6: prepare the **related documentation** as detailed in the next page (**deliverable 2**)**.**

Rules

- Each section and subsection of the deliverables must be completed **individually.**
- **All questions should be directed to the demonstrators during lab hours.**

SUBMISSION INSTRUCTIONS: The deliverables (.sql file + documentation pdf file as described below) must be submitted to **Brightspace** (submissions via email will not be accepted).

Deliverables:

1. The completed database, implemented using MySQL, exported and saved in a self-contained .sql file (**which should have the same name as your database as detailed in STEP 5**), MUST contain the following:

    - Tables used to correctly represent all concepts as described above (with appropriate primary keys, constraints, etc.) including additional attributes necessary to link the tables according to the required relationships (and any other assumptions you made).

    - Appropriate data types for all attributes and primary key(s).

    - Tables should be populated with **at least** 10 rows per table.

    - Correct queries as per information sheet implemented by means of stored procedures.

    REMEMBER TO CALL YOUR DATABASE WITH A NAME CONTAINING YOUR SURNAME AND STUDENT NUMBER (eg. rossi123456) AND THE FINAL SELF-CONTAINED .SQL FILE ACCORDINGLY.

2. **Supporting documentation** MUST be provided in one single PDF file including:

    - A short clear description of your database.

    - A discussion of any assumptions or additions you made.

    - A discussion of reaction policies used and why they were used.

    - The Entity-Relationship (ER) diagram of your database (generated as described in lab Exercise 5).

    - Please indicate clearly, in your documentation, the operating system you used (Mac, Windows, Ubuntu, etc).

    - **CALL YOUR .PDF FILE WITH THE SAME NAME AS YOUR DATABASE.**

Submission deadline: Tuesday, 21st November, 2023 at 5:00 p.m.