COMP 3311: Database Management Systems

Task 2: Table Creation and SQL Queries

Assigned: October 9, 2020 Value: 10% of course grade
Due: 11:00 p.m., October 31, 2020

In this task you are to submit SQL script files that create the relational database required for the final year project management system and that execute some queries on this database.

IMPORTANT REMINDER

This is an individual task. The SQL script files that you submit should be *your own work*. While you may discuss general task issues with other students, you are not allowed to collaborate with others to come up with a common solution, to share solutions or to copy someone else's solution. Copying, sharing and collaborating will be severely penalized. All those involved in a copying/sharing/collaborating case will automatically receive a grade of 0 and may be reported for further disciplinary action.

PART 1: TABLE CREATION

Create tables with exactly the same table and attribute names as the relation schemas described in the document **Task 2 Relation Schemas**, which can be downloaded from the Project Information page on the course website. Moreover, the order of the attributes and their types in each table should be exactly the same as that given in the document **Task 2 Relation Schemas**. Note that the order of the relation schemas in the document **Task 2 Relation Schemas** is ***not necessarily the correct order*** for creating the tables; the relation schemas in this document merely describe the attributes, their types and some of the constraints of each relation schema.

Include for each table all attribute-level or table-level constraints that either are described in the project description, are derivable from the example E-R schema for Task 1 or are stated in the document **Task 2 Relation Schemas**.

You can check whether you have defined *some aspects* of your tables correctly with the script file Task2SchemaCheck.sql which can be downloaded from the Project Information page of the course website. If each tuple in this script file can be successfully inserted into its respective table, then the table has been defined correctly as to the number of the attributes and possibly the order and type of each attribute. However, the order and type of the attributes is not guaranteed to be correct even if a tuple can be inserted successfully. Furthermore, the tuples need to be inserted in the correct order and the order in which they appear in the script file **is not** necessarily the correct order in which the tables should be created. The tuples may need to be reordered according to the specified referential integrity constraints so that they can be successfully inserted into the tables.

Note: ***You are required to use the relation schemas described in the document Task 2 Relation Schemas. For Task 2 you will not be provided with any sample data to populate the database. You may create your own sample data if you consider that it is necessary to do so.***

PART 2: SQL QUERIES

Construct the following SQL queries using the relation schemas in the document **Task 2 Relation Schemas**. You should use only SQL constructs that have been discussed in the lectures, tutorials or labs. Do not use PL/SQL procedures or functions; use SQL statements only.

1. For FYPs that have two supervisors, find the title and category of the FYP as well as the names of the supervisors. Order the result first by category ascending, then by title ascending and finally by name ascending.
2. For each project group that has been assigned to an FYP, find the group code, the title of the FYP and the name of the reader for the project group, if any. Order the result by group code ascending.
3. For each FYP project category, find the number of project groups that have been assigned to FYPs in that category. Order the result first by the number of project groups in descending order and then by category in

ascending order. If no project group has been assigned to an FYP in a project category, then 0 should be returned as the number of groups assigned.

4. Find the title, supervisor name, names of the students in the project group and the priority specified for the FYP for those project groups that have been assigned to an FYP for which they have specified a priority of greater than 1. Order the result first by priority ascending and then by title ascending.
5. For each faculty, find their name, the number of FYPs for which they are a supervisor and the number of categories in which they are supervising FYPs. Order the result by faculty name ascending. If a faculty is not supervising any FYPs, then the number of FYPs and categories should be shown as 0.

PLEASE NOTE CAREFULLY

You may not share your sql script files for Part 1 or Part 2 with other students in the course. Sharing your sql script files will be considered collaboration and will be penalized as stated above.

WHAT TO SUBMIT

Submit two SQL script files named as follows:

1. **task2create.sql** containing the SQL statements for creating the tables specified in Part 1. (This file should not contain any sample data; it should contain only the SQL statements for creating the tables.)
2. **task2query.sql** containing the SQL statements for the queries specified in Part 2.

>>> ***Put your name and student id as a comment on the first line of each script file.***

>>> ***In the task2query.sql script file, precede each query with a comment containing the text statement of the query as given in Part 2.***

We will not grade your submission

- if your task2create.sql script file violates any of the requirements stated in Part 1,
- if you create either of the script files in other formats (i.e., doc, docx, rtf, pdf, etc.) or
- if you do not put your name and student id in each script file correctly.

Note: ***Each script file will be tested directly in SQL Developer. Therefore, you are strongly advised to test your SQL solution statements in SQL Developer before submitting them. If a script file cannot be run in SQL Developer, it will not be graded, and you will get zero for that part of Task 2.***

HOW TO SUBMIT

1. Put both script files into a folder named "task2XXXXXXXX" where "XXXXXXXX" is your student id.
2. Compress (zip) the folder "task2XXXXXXXX".
3. By 11:00 p.m. on Saturday, October 31, upload your "task2XXXXXXXX.zip" file to Canvas by selecting *Task 2* in the Assignments section of Canvas, and then selecting the Submit Assignment button. To check your submission, select the Submission Details button. For help, select the Help button.

GRADING

Item	Value
Part 1: Table creation	~50%
Part 2: SQL queries	~50%

CLARIFICATION AND AMENDMENT OF PROJECT/TASK REQUIREMENTS

You can ask clarification questions regarding the requirements stated in the project description or the document **Task 2 Relation Schemas**. ***All questions should be submitted to the teaching team by email at 3311rep@cse.ust.hk.*** The submitted questions and their replies will be posted on the *Project Q&A* course web page for Task 2, which can be accessed from the *Task Q&A* section of the *Project Information* course web page. ***You should check this web page on a regular basis for further clarification and amendment of project***

requirements. Any requirements added or amended in a *Project Q&A* web page will become part of the project requirements.