Marked Lab: SQL Queries

This lab must be prepared in teams of 2 or 3 students and submitted on Campus. You can check the due date in the submission area.

Contents

1 Work to Do

You have to answer the questions given in the form of SQL comments in the script `queries.sql`. The questions relate to the database created and populated by the script `database.sql`.

To do the lab: (1) download and execute the script `database.sql`, (2) download and complete the script `queries.sql`. The use of MySQL Workbench is recommended.

The population of the database given as an example in `database.sql` is deliberately simple. Some questions in the script might not yield any answer with this population. Feel free to complete it in order to thoroughly test your queries.

The archive `Example.zip` gives you an example of the files you have to submit ("Files to Submit" folder) in accordance with the resource files you are given ("Resources" folder).

If you have a question regarding the lab, please post it on the Questions & Answers forum. I will not reply to emails sent to my email address. Thank you.

2 Beware

2.1 Automatic Marking

Your script will be marked automatically. The answers it outputs will be compared line by line and column by column to those given by the solution script when executed on the same database. Therefore, you must be very careful about the following:

- Answer each question precisely, like in the labs: answer each question with only one SQL query; include all the requested attributes, and only those, in the specified order. If no specific attribute is requested, include them all, in the order they are listed in the table declaration.

- For some questions, the attributes involved in filtering or sorting must not be displayed: this is not a mistake. You can of course display these attributes when testing your queries, but do not forget do remove them before submitting your script.

- Be sure to use the right case for table and attribute names, as defined in the script `database.sql`. Beware: the reference server (see below) is case-sensitive, whereas the server of your local WAMP/XAMPP/MAMP might not be.

- Do not remove or alter any line of the script, especially the tags "select 'Query xy' …": they tag the number of the question being answered in the output.

- Your script must output the result of the queries and nothing more (e.g. temporary results, comments, etc.); it must not call or include, in whole or part, the script `database.sql`.

The name of the columns of the tables output by your script is ignored during the marking process: in the select clause of your queries, you may rename attributes and expressions at will.

2.2 Executing your Script

Your script will be run on ECE's MySQL 5.0 server, using the following shell command:

```
mysql [connection parameters][1] < queries.sql > queries.out 2>&1
```

Before submitting your script, you must check that it executes correctly under MySQL Workbench: (1) connect to ECE's MySQL server, or, if not possible, to the MySQL server of your local WAMP/XAMPP/MAMP installation, (2) execute your script *at once* (left-most "lightening" icon, with the label "Execute … everything"), (3) check that you get 40 green lights.

This test will allow you to detect the most common errors: (a) missing semicolon at the end of each SQL statement, (b) use of the wrong case for table and attribute names (ECE's MySQL server is case-sensitive), (c) failure to execute `set session sql_mode …` when testing your queries one by one.

2.3 Marking Database

SQL queries must not make any assumption about the population of the database: they must return a valid result regardless of the population. Your script will be tested against a database whose population is different from that of the example database. (Its schema, however, will be the same.)

Therefore, when asked about the products ordered by Smith (for example), your query must not use the hardcoded value 1234 just because 1234 is Smith'ID in the example database. Rather, your query must use the information in the question (here "Smith") and this information alone.

[1] see the tutorial «Using Your MySQL Database at ECE »

Be sure to address all special cases: null values, duplicate values, entities that do not participate in relationships, etc. If there is a doubt whether a tuple matches a question, especially because of null values, your query must not output that tuple, as the where clause does.

2.4 Standard SQL

MySQL accepts queries that are illegal with respect to standard SQL, especially with the `group by` clause. In order to detect such queries, the query script contains the following command:

```
set session sql_mode = 'ONLY_FULL_GROUP_BY';
```

Obviously, you must not remove this line from the script.

3 Marking Scheme

The tentative marking scheme is as follows:

Item	**Marks**
Queries	18
Code Quality	2
Total	*20*

All the queries, whether simple or complex, bear the same marks. As for the "code quality", your queries must (1) be written in standard SQL, (2) only use SQL92's "natural join" or "join on" for joins, (3) be properly formatted.

4 Submission

4.1 Deliverable

The deliverable consists of the script `queries.sql` and the output file `queries.out`. You must rename the first file as `LASTNAME1.FirstName1.LASTNAME2.FirstName2.sql` and the second file as `LASTNAME1.FirstName1.LASTNAME2.FirstName2.out`, **without any space character**, to identify the team members.

4.2 Submitting

You must submit the two files into the submission area directly, **without creating an archive**. You may submit them again as often as you wish until the deadline, provided you **always do so under the same Campus user**.