CSIT115/CSIT815 Data Management and Security
Laboratory 3
Published on 25 March 2019

Scope
This laboratory includes the tasks related to logical design and implementation of `CREATE TABLE` statements of SQL.

The outcomes of the laboratory work are due by **Saturday 13 April 2019, 7.00 pm (sharp).**

Please read very carefully information listed below.
This laboratory contributes to 3% of the total evaluation in a subject CSIT115 and it contributes to 3% of the total evaluation in a subject CSIT815.

A submission procedure is explained at the end of specification.

This laboratory work consists of 1 task.

It is recommended to solve the problems before attending the laboratory classes in order to efficiently use supervised laboratory time.

A submission marked by Moodle as `Late` is treated as a late submission no matter how many seconds it is late.

A policy regarding late submissions is included in the subject outline.

A submission of compressed files (zipped, gzipped, rared, tared, 7-zipped, lhzed, … etc) is not allowed. The compressed files will not be evaluated.

All files left on Moodle in a state `"Draft(not submitted)"` will not be evaluated.

An implementation that does not compile due to one or more syntactical errors scores no marks.

It is expected that all tasks included within **Laboratory 3** will be solved **individually without any cooperation** with the other students. If you have any doubts, questions, etc. please consult your lecturer or tutor during lab classes or office hours. Plagiarism will result in a **FAIL** grade being recorded for the assessment task.

Tasks
Task 1 (3 marks)
Consider a conceptual schema given below.
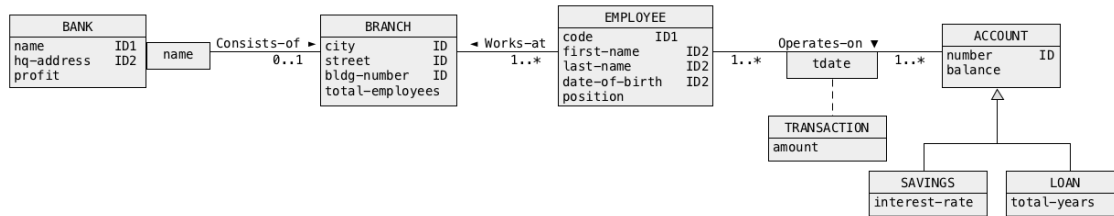
(1) Perform a step of logical database design and transform a conceptual schema given above into a collection of relational schemas. Use a **superset method** for implementation of generalization.

No report is expected from a step of logical design.

(2) Next, use the relational schemas obtained in the previous step to create SQL script `solution1.sql` with `CREATE TABLE` statements that implement the relational schemas.

Your `CREATE TABLE` statements must enforce the following types of the columns in the relational tables.

(i) All columns that contain dates must be of type `DATE`.
(ii) All employee codes must be fixed size a sequence of 6 characters.
(iii) All account numbers are sequences of 12 digits.
(iv) All interest rates are fractions in a range [0,1) with 2 positions after decimal dot.
(v) All transaction amounts are real numbers (floating point number) in a range 0.00 to 99999999.99 with 2 positions after decimal dot.
(vi) The types of all other columns in the relational tables are up to you. However, the types must make sense. For example, a city name of type integer will not get a lot of appreciation from a person evaluating your solution.

Note, that you MUST use only `CREATE TABLE` statements and no other statement of SQL !

You can find a lot of information about implementation of `CREATE TABLE` statements in a presentation 09 SQL - Data Definition Language (DDL) and in Cookbook, How to use data definition and basic data manipulation statements of SQL, Recipe 4.1 How to create and how to alter the relational tables?

You can use either graphical user interface MySQL Workbench or command line interface mysql to implement your script.

No report is expected from a step (2).

(3) When your script is ready connect to the command line interface mysql and process the script `solution1.sql` implemented in the previous step. Processing of the script must create a report. The report from processing of a script `solution1.sql` must be saved in a file `solution1.rpt`.

If processing of the file returns the errors then you must eliminate the errors! Processing of your script must return NO ERRORS ! A solution with errors is worth no marks **!**

It is recommended to create a script `drop.sql` that drops all relational tables created by processing of a script `solution1.sql` and it is recommend to process a script `drop.sql` after each processing of `solution1.sql`. In such a way you can avoid an unpleasant syntax error messages like:

ERROR 1050 (42S01): Table '…' already exists

Please, remember that such message also counts as an error in processing of the script and that a solution with errors is worth no marks **!**

To create a report you must use a technique already practiced in Laboratory 1. You can also find more information about creating reports from processing of SQL scripts in Cookbook, Recipe 3.1 How to use "mysql? Command based interface to MySQL database server? Step 4 How to save the results of SQL processing in a file?

Your report must contain a listing of all SQL statements processed. To achieve that, you must logon mysql client with -v (`verbose`) option in the following way:

```
 mysql -u csit115 -p -v
```

You can find more information on how to display SQL statements while a script is processed in Cookbook, Recipe 3.1 How to use "mysql? Command based interface to MySQL database server ? Step 3 How to process SQL script ?.

A report that contains no listing of processed SQL statements scores no marks ! So, make sure that you connect to mysql client with an option `-v` !

And again, … a report from processing of SQL script must contain NO ERRORS !

Deliverables
A file `solution1.rpt` with a report from processing of SQL script `solution1.sql`. The report must be created with the command line interface mysql, the report MUST NOT include any errors, and the report must list all SQL statements processed. Submission of a file with a different name and/or different extension and/or different type scores no marks.

Submission

Note, that you have only one submission. So, make it absolutely sure that you submit correct files with the correct contents. No other submission is possible !

Submit a file **solution1.rpt** to Moodle in the following way:
   (1) Access Moodle at **http://moodle.uowplatform.edu.au/**
   (2) To login use a **Login** link located in the right upper corner the Web page or in the middle of the bottom of the Web page
   (3) When logged select a site **CSIT115/CSIT815 (S119) Data Management & Security**
   (4) Scroll down to a section **Submissions**
   (5) Click at a link **In this place you can submit the outcomes of Laboratory 3**
   (6) Click at a button **Add Submission**
   (7) Move a file **solution1.rpt** into an area **You can drag and drop files here to add them**. You can also use a link **Add**…
   (8) Click at a button **Save changes**
   (9) Click at a button **Submit assignment**
   (10) Click at the checkbox with a text attached: **By checking this box, I confirm that this submission is my own work,** … in order to confirm the authorship of your submission
   (11) Click at a button **Continue**

End of specification