CSIT115/CSIT815 Data Management and Security
Laboratory 7
30 April 2018

Scope
This laboratory includes a task related to implementation of discretionary access control.

Important messages
Please read the messages listed below before implementation of a task included in a specification of Laboratory 7.

More implementation related information can be found in "How to … ?" Cookbook available through Moodle or at:
`http://www.uow.edu.au/~jrg/115/COOKBOOK.`

The outcomes of Laboratory 7 are due by **Saturday, 19 May, 2018, 10.00 pm (sharp).**

Laboratory 7 contributes to 2% of the total evaluation in the subject.

A submission procedure is explained at the end of this document.

Only one submission of Laboratory 7 is allowed and only one submission per student is accepted. Please make sure that you submit the correct files.

A submission that contains an incorrect file attached is treated as a correct submission with all consequences coming from the evaluation of the file attached.

Compressed (zipped, rared, tared, etc) files will not be evaluated.

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

The reports from processing of SQL scripts must return NO ERRORS ! A solution with the errors is worth no marks !

A policy regarding late submissions is included in CSIT115/815 Subject Outline.

<u>Prologue</u>

Download the files `dbcreate.sql`, `dbdrop.sql`, `dbload.sql`, and `dbschema.pdf`. Copy the files to your USB drive or email the files to yourself such that you can access all of them either through command line interface mysql or graphical user interface MySQL Workbench.

Connect to MySQL database server either through command line interface mysql or graphical user interface MySQL Workbench.

When connected, select a database `csit115` with a command `use csit115`.

It is strongly recommended to process SQL script file `dbdrop.sql` to drop all relational tables used for implementation of the previous assessment task.

To create the relational tables of a sample database, process SQL script `dbcreate.sql`.

To load data into the relational tables created in the previous step process SQL script `dbload.sql`.

To list the names of relational tables created, use a command `show tables`.

To list a structure of a relational table `<table-name>` use a command `describe <table-name>`.

Use a pdf viewer to open a file `dbschema.pdf` with a conceptual schema of the sample database. The green blobs represent the relational tables that implement the classes of objects and associations.

No report is expected from the implementation of the steps listed above.

Tasks
Task 1 (2 marks)
Implement SQL script `solution1.sql` that performs the following actions.

(1) Create a database with the same name as a *prefix of your University email account.* For example, if your University email account is `xyz007@uow.edu.au` then a name of a database must be `xyz007`.

(2) Create three users with the user names: *app, emp,* and *admin.* The passwords are up to you.

(3) While connected as a user `root`, process the scripts `dbcreate.sql` and `dbload.sql` to create and to load data into the relational tables later on used in this laboratory class. All relational tables must be located in a database created in step (1). SQL statements processed by the scripts must NOT be included in a report from processing of a script `solution1.sql`. It means that before processing of the scripts you must execute `notee` statement to turn off spooling and after processing of the scripts `tee solution1.rpt` to turn on spooling into a report file.

(4) Next, grant the read and write privileges on entire database *prefix of your University email account* to a user *admin.* The privilege must be granted such that a user *admin* is not allowed to grant the same privilege to another user.

(5) Next, grant a read privilege on a relational table `POSITIONS` located in a database *prefix of your University email account* to a user *app.* The privilege must be granted such that a user *app* is able to grant the same privileges to the other users.

(6) Next, grant the write privileges on a relational table `POSITIONS` located in a database *prefix of your University email account* to a user *emp.* The privileges must be granted such that a user *emp* is not able to grant the same privileges to the other users.

(7) Next, grant a privilege to create relational tables located in a database *prefix of your University email account* to a user *admin.* The privilege must be granted such that a user *admin* is allowed to grant the same privilege to another user.

(8) Next, grant a privilege to read information about all positions (all columns from `POSITIONS` table) such that each position needs only one skill to a user *emp* The privilege must be granted such that a user *emp* is not allowed to grant the same privilege to another user.

(9) Finally, lists all privileges granted to the users *app*, *emp*, and *admin.* The script must use data dictionary views included in `mysql` database to list the privileges.

When ready connect a command line interface mysql to MySQL database server as a user `root` with a password `csit115` and process a script `solution1.sql`. A report from processing should be saved in a file `solution1.rpt`.

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** through 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/DPIT115/CSIT815 (S118) 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 7**
(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**

It is expected that a problem included within **Laboratory 7** 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 that assessment task.

End of specification