School of Computing and Information Technology
University of Wollongong

Session: **Autumn 2018**
Lecturer: **Janusz R. Getta**
Tianbing Xia

CSIT115/CSIT815 Data Management and Security
Laboratory 6
16 April 2018

Scope

This laboratory includes the tasks related to implementation of `SELECT` statements that join and antijoin relational tables, nested `SELECT` statements with set membership operation, and nested `SELECT` statements with `EXISTS/NOT EXISTS` clauses.

Important messages

Please read the messages listed below before implementation of a task included in a specification of Laboratory 6.

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 6 are due by **Saturday, 5 May, 2018, 10.00 pm (sharp).**

Laboratory 6 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 6 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.

Prologue

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 re-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 the following queries as `SELECT` statements of SQL and save the statements in SQL script file `solution1.sql`.

The queries listed below must be implemented as `SELECT` statements with `JOIN` operation.

(1) Find the titles of positions offered by the employers from `Western Australia`.

(2) Find the first and last names of applicants who applied for a position offered by `University of Queensland`.

The queries listed below must be implemented as nested `SELECT` statements with `IN/NOT IN` set membership operation.

(3) Find the titles of positions offered by the employers from `Western Australia`.

(4) Find the first and last names of all applicants who submitted at least one application.

(5) Find the first and last names of all applicants who submitted no applications.

(6) Find the first and last names of applicants who submitted exactly one application.

The queries listed below must be implemented as nested queries with `EXISTS/NOT EXISTS` clauses.

(7) Find the titles of positions offered by the employers from `Western Australia`.

(8) Find the first and last names of all applicants who submitted at least one application.

(9) Find the first and last names of all applicants who submitted no applications.

(10) Find the first and last names of applicants who submitted exactly one application.

Deliverables

A file `solution1.rpt` with a report from processing of SQL script `solution1.sql`. The report must be created with the command based 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 6`**
(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 6** 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