School of Computing and Information Technology
University of Wollongong

Session: **Autumn 2017**
Lecturers: **Janusz R. Getta**
Tianbing Xia

CSIT115/CSIT815 Database Management and Security
Laboratory 6
28 April 2017

Scope

This laboratory includes the tasks related to the applications of `SELECT` statement of SQL.

The outcomes of the laboratory work are due by **Saturday, 6 May, 2017, 7.00 pm.**

This laboratory contributes to 2% of the total evaluation in the subject.

A submission procedure is explained at the end of specification.

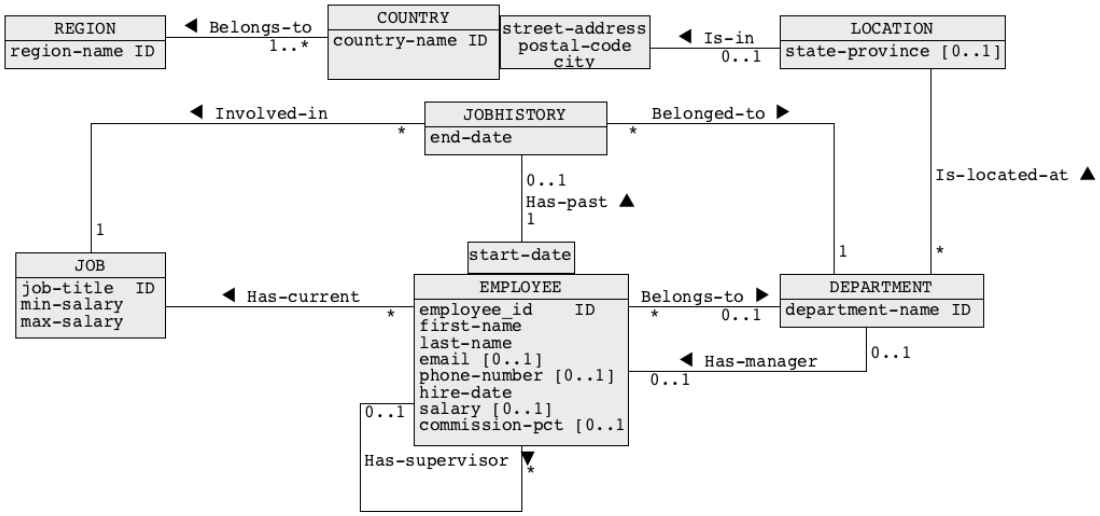
This laboratory consists of 2 tasks and specification of each task starts from a new page.

It is strongly recommended to solve the problems included in this specification **before coming to a laboratory class** and bring the preliminary solutions to a laboratory class such that any doubts, question, problems, etc can be discussed with a tutor in a laboratory class. Such procedure allows for more effective use of time spent in a supervised laboratory class.

Prologue

Download and unzip a file `laboratory6-all-files.zip`. You should get the files `Laboratory6.pdf`, `dbcreate.sql`, `dbdrop.sql`, and `dbload.sql`. Copy the files to your USB drive such that you can access both files either through command line interface mysql or graphical user interface MySQL Workbench. You can also email a file `laboratory6-all-files.zip` to yourself such that you can access it on different systems. Finally, the simplest solution is to download the file directly to Ubuntu Linux from `http://www.uow.edu.au/~jrg/115/LABORATORIES/LABORATORY6`.

Connect to MySQL either through command line interface mysql or graphical user interface MySQL Workbench and execute script files `dbcreate.sql` and `dbload.sql`. The script files create and load data into a database that contain information about a company and its employees. The company consists of several departments located in the cities all over the world. The database also contains information about the present and past jobs of its employees and about the present managerial structure. A conceptual schema of the database is given below.



Tasks

Task1 (1 mark)

Implement SQL script `solution1.sql` that contains implementations of the following queries as `SELECT` statements.

(1) Find the names of departments located either in `Japan` or `Singapore`.

(2) Find the names of departments and names of countries located in `Americas`.

(3) Find the full names of employees who work in `New York`.

(4) Find the full names of employees whose commission percentage (`commission_pct`) is not empty.

(5) Find the job titles and total number of employees for each job title. The results will be sorted by the job titles in ascending order.

Hint: The implementations of similar `SELECT` statements are included in the *"Cookbook"*.

Deliverables

Submit a file `solution1.rpt` with a report from processing of SQL script `solution1.sql`. The report MUST have no errors and the report MUST list all SQL statements processed. The report MUST include ONLY SQL statements and control statements that implement a specification of Task 1 and NO OTHER statements.

A report that contains no listing of executed SQL statements scores no marks !

A report that contains processing errors scores no marks !

Processing of the script on an empty database scores no marks !

Processing of the script that contains statements other from `SELECT`, `source`, `notee` scores no marks !

Submission of a file with a different name and/or different extension and/or different type scores no marks !

Task 2 (1 mark)
Implement SQL script `solution2.sql` that contains implementations of the following queries as `SELECT` statements.

(1) Find the names of departments, names of countries and total number of employees for each department that hires more than three employees.

(2) Find the job titles, minimum and maximum salaries for each job title that has more than 5 employees hired for such jobs.

(3) Find the employee ids, full names of employees who completed their jobs. **Note:** Information about employees who have already completed their jobs is stored in a table `JOBHISTORY`.

(4) Find the employee id, first name and last name for each employee who is directly managed by `Alberto Errazuriz`.

(5) Find the employee ids, first names, last names of employees who are working on their jobs. **Note:** The employees who are working on their jobs either have no record in a table `JOBHISTORY` or their hire dates are later than their last jobs' end date.

Hint: The implementations of similar `SELECT` statements are included in the *"Cookbook"*.

Deliverables
Submit a file `solution2.rpt` with a report from processing of SQL script `solution2.sql`. The report MUST have no errors and the report MUST list all SQL statements processed. The report MUST include ONLY SQL statements and control statements that implement a specification of Task 1 and NO OTHER statements.

A report that contains no listing of executed SQL statements scores no marks !

A report that contains processing errors scores no marks !

Processing of the script on an empty database scores no marks !

Processing of the script that contains statements other from `SELECT`, `source`, `notee` scores no marks !

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 the files **`solution1.rpt`**, and **`solution2.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 **`CSIT815/CSIT115 (S117) Data Management and 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) Repeat step (7) for a file **`solution2.rpt`**.
(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`**

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

Only one submission of the outcomes of Laboratory 6 is allowed and only one submission per student is accepted.

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

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.

It is expected that all tasks 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.

The evaluated outcomes of will be electronically returned to the students before 11.55pm on Saturday, 20 May, 2017.

End of specification