School of Computing and Information Technology
University of Wollongong

Session: **Autumn 2016**
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CSIT115/CSIT815 Database Management and Security
Laboratory 6

Scope

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

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`, `dbcreate6.sql`, and `dbdrop6.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.

Connect to MySQL either through command line interface mysql or graphical user interface MySQL Workbench and execute a script file `dbcreate6.sql`. A script creates and loads data into the relational tables that contain information about the employees, drivers, administration people, trucks, trips, and trip legs.

Tasks

Task1 (1 mark)

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

(1) Find the driver license numbers (attribute `LNUM`) of all drivers who performed at least one trip in 2015 or at least one trip in 2016.
(2) Find the driver license numbers (attribute `LNUM`) of all drivers who performed at least one trip in 2015 and at least one trip in 2016.
(3) Find the driver license numbers (attribute `LNUM`) of all drivers together with the total number of trips performed by each driver. You may ignore the drivers who performed no trips so far. For each driver list a driver license number to together with the total number of trips in one line, then next driver license number with the total number of trips in the next line, and so on.
(4) Find the driver license numbers (attribute `LNUM`) of all drivers who performed more than 3 trips.
(5) Find full names of all drivers whose present status is “on leave”.

Hint: The implementations of similar `SELECT` statements are included in the “Cookbook”.

Deliverables

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.

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

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

(1) Find full names of all drivers who used a truck with a registration PKR856 at least one time.
(2) Find the pairs of truck registration number (attribute `REGNUM`) and driver license number (attribute `LNUM`) such that the present status of a truck is different from the present status of a driver.
(3) Find the numbers of trips (attribute `TNUM`) of all trips that included 2 successive (adjacent) legs from Melbourne to Sydney and from Sydney back to Melbourne. This query must be implemented as a self-join query !
(4) Find the driver license numbers (attribute `LNUM`) of all drivers together with the registration numbers of all trucks used by the drivers. If a driver has not used any truck so far then his driver license number must be listed with `NULL`.
(5) Find the driver license numbers (attribute `LNUM`) of all drivers together with the total number of trips performed by each driver. If a driver performed no trips so far then his driver license number must be listed with 0. For each driver list a driver license number to together with the total number of trips in one line, then next driver license number with the total number of trips in the next line, and so on.

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

Deliverables
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.

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

End of specification