

## Lab 4 – Databases and MySQL

### How to login to your MySQL account:

1. There are two ways to login to the **cmslamp14.aut.ac.nz** MySQL server:
  - a. Using PHPMyAdmin web application. Steps:
    - i. Open browser and visit <http://cmslamp14.aut.ac.nz>
    - ii. Click the 'PHPMyAdmin' button
    - iii. Ignore the security warning by clicking the 'advanced' button then clicking the 'Proceed to cmslamp14.aut.ac.nz (unsafe)' url link
    - iv. Log in with your AUT credential
    - v. Click the 'SQL' Tab to input SQL commands, then click the bottom-right 'Go' button to execute these commands.
  - b. Using 'HeidiSQL\_8.3\_Portable' client native application, which is available at 'Blackboard – Resources - MySQL client software –'.  
To access your MySQL account, please use the following parameters:

```
host: cmslamp14.aut.ac.nz
user: <your Blackboard username>
password: <your Blackboard password>
```

2. Each student has been allocated a database to work on, named as [your Blackboard username](#), e.g., 'jiyu'.

Some example SQL commands:

1. `SHOW DATABASES;`  
you will see a list of databases and your database is also in the list
2. `USE <database>;`  
Select a database. You will receive a confirmation message "Database changed".
3. Now you are ready to create tables into your database:  
`CREATE TABLE cars .....;`
4. The MySQL manual can be found here: (Section 10 and 12 are what you need)  
<http://dev.mysql.com/doc/refman/5.0/en/index.html> ... or see week 4 lecture slides

### Task 1: Creating a table and entering data (5 marks)

Using your existing database, create a new table **car** for a used car dealership.

Include the following fields in the **car** table:

car_id	(use <i>AUTO_INCREMENT PRIMARY KEY</i> )
make,	
model,	
price	(use <i>INT</i> type), and
yom	(year of manufacture).

Enter at least 10 records into the table.

Make	Model	Price	Year of Manufacture
Holden	Astra	\$14,000	2005
BMW	X3	\$35,000	2004
Ford	Falcon	\$39,000	2010
Toyota	Corolla	\$20,000	2010
Holden	Commodore	\$13,500	2005
Holden	Astra	\$8,000	2001
Holden	Commodore	\$28,000	2009
Ford	Falcon	\$14,000	2006
Ford	Falcon	\$7,000	2003
Ford	Laser	\$10,000	2001
Mazda	RX-7	\$26,000	2000
Toyota	Corolla	\$12,000	2001
Mazda	3	\$14,500	2007

## Task 2: Querying the table (5 marks)

Write queries that return the following:

1. All records
2. Make, model, and price, sorted by make and model
3. The make and model of the cars which cost \$20,000 or more.
4. The make and model of the cars which cost below \$15,000.
5. The average price of cars for a similar model. *Hint: Use in-built SQL function AVG*

## Task 3: Download the demo code of Lecture 5 and make it work on your account (0 marks)

Note: although this task is not marked, it'll greatly facilitate your assignment tasks.

## Extra Challenge

Launch the document-based Database MongoDB server and client on your lab computer and implement Task 1 and Task 2 using MongoDB.

(Reference: Lecture 4 slides)

Note: if MongoDB is not installed, it can be downloaded from <https://www.mongodb.com/download-center?jmp=nav#community>.