

DataBase HW1

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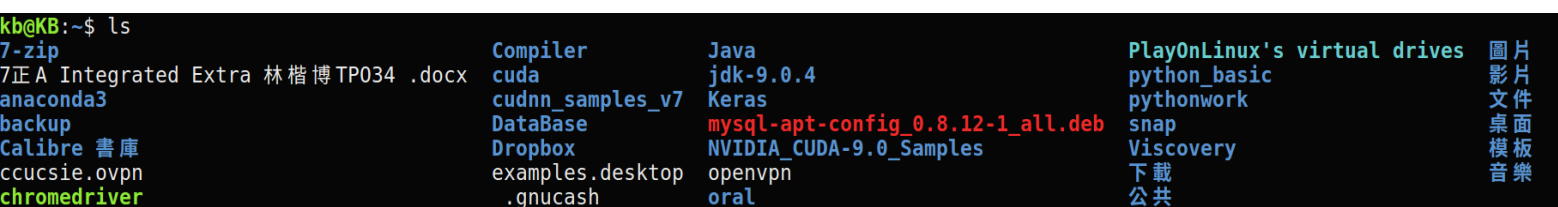
(DataBase 設置環境 : Ubuntu 16.04)

1. 請說明如何建立 database , 步驟需截圖 (25%)

Reference: <https://leadingtides.com/article/%E6%95%99%E5%AD%B8-%E5%A6%82%E4%BD%95%E5%9C%A8-Ubuntu-18.04-%E5%AE%89%E8%A3%9D-MySQL-8.0>

Step 1→ `cd /tmp && curl -OL https://dev.mysql.com/get/mysql-apt-config_0.8.12-1_all.deb`

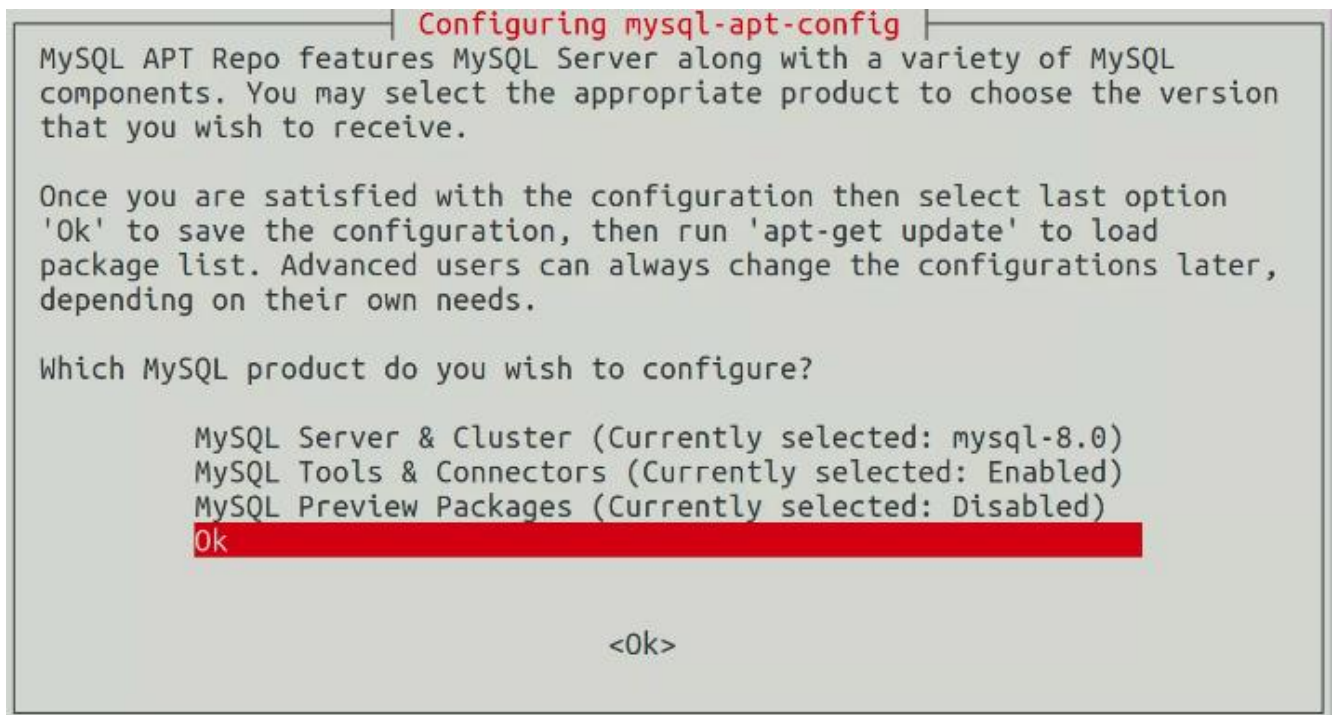
(直接從往網路上利用 curl 指令 , 將網頁的 mysql 8.0.15 存至本機下)



Step 2→ `sudo dpkg -i mysql-apt-config_0.8.12-1_all.deb`

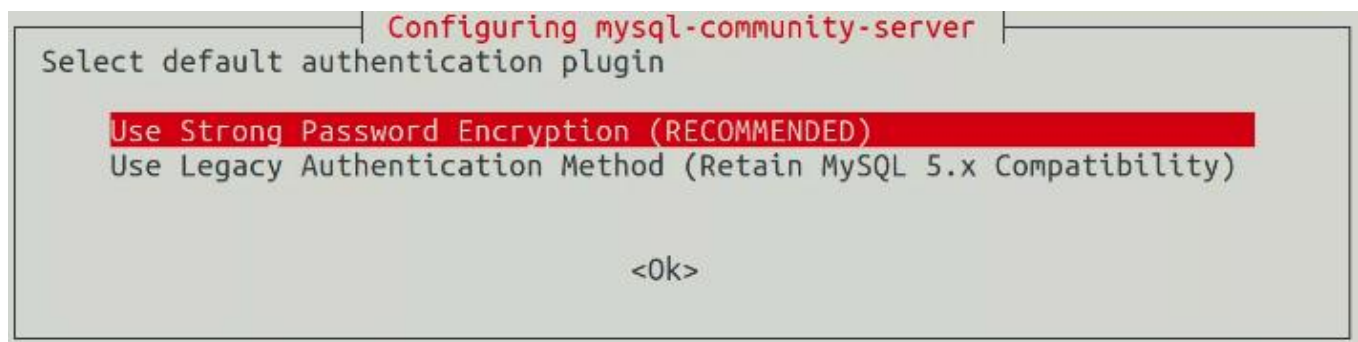
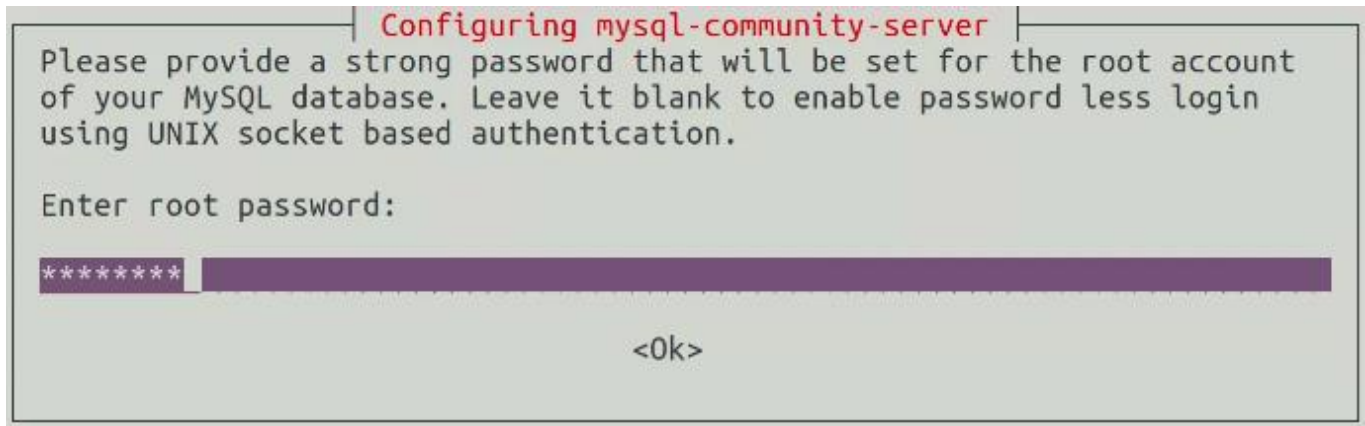
(解壓縮 mysql-apt-config_0.8.12-1_all.deb , 並安裝)

Step 3→ 安裝後會進入 Comfig 介面 , 切換至 mysql 8.0 。



Step 4→ sudo apt-get install mysql-server
以 apt-get 正式地安裝 MySQL 於 Ubuntu 中

Step 5→ 在安裝過程中，會需要設定一組自己的密碼。並建議將密碼加密。



Step 6→ Open mysql 以確認 (1) mysql --user=root --password (2) Enter password

```
kb@KB:~$ mysql --user=root --password
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.15 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> █
```

Step 7→ Create a database: CREATE DATABASE hw1;

```
mysql> CREATE DATABASE hw1;  
Query OK, 1 row affected (0.10 sec)  
  
mysql>
```

(Successfully Create DataBase !)

2. 請說明如何建立 table · 步驟需截圖 (15%)

Step 1→ Use Database hw1: USE hw1;

```
mysql> USE hw1;  
Database changed  
mysql>
```

Step 2→ Create a table and define all the variables: CREATE TABLE table_name(sid INTEGER, sname CHAR(30), rating INTEGER, age DECIMAL(4,1) NULL, PRIMARY KEY(sid));

Note: age DECIMAL(4,1) NULL → means that age is a 4-digits float number with and exact value to the first decimal place

```
mysql> CREATE TABLE table_name( sid INTEGER, sname CHAR(30), rating INTEGER, age DECIMAL(4,1) NULL, PRIMARY KEY(sid));  
Query OK, 0 rows affected (0.45 sec)  
  
mysql>
```

(Successfully Create DataBase's Table !)

3. 已建立好的 table 完整內容 (需顯示 table 內每筆資料) (30%)

Step 1→ 為了直接載入打好內容的.csv 檔。需先將.csv 檔放置 /var/lib/mysql/hw1/ 底下
(需超級使用者權限來複製)

```
kb@KB:~/DataBase/HW/HW1$ cp Hw1.csv /var/lib/mysql/HW1.csv
cp: failed to access '/var/lib/mysql/HW1.csv': 拒絕不符權限的操作
kb@KB:~/DataBase/HW/HW1$ sudo cp Hw1.csv /var/lib/mysql/HW1.csv
```

Step 2→ Import a .csv file and encode it with 'big-5': LOAD DATA INFILE 'Hw1.csv'
INTO TABLE table_name CHARACTER SET big5 FIELDS TERMINATED BY ','
ENCLOSED BY '"' LINES TERMINATED BY '\n' IGNORE 1 ROWS;

```
mysql> LOAD DATA INFILE 'Hw1.csv' INTO TABLE table_name CHARACTER SET big5 FIELDS TERMINATED BY ',' ENCLOSED BY '"' LINES TERMINATED BY '\n' IGNORE 1 ROWS;
Query OK, 10 rows affected (0.09 sec)
Records: 10 Deleted: 0 Skipped: 0 Warnings: 0

mysql>
```

Step 3→ Print all the contents in the table: SELECT * FROM table_name;

```
mysql> SELECT * FROM table_name;
+-----+-----+-----+-----+
| sid | sname | rating | age |
+-----+-----+-----+-----+
| 22 | Dustin | 7 | 45.0 |
| 29 | Brutus | 1 | 33.0 |
| 31 | Lubber | 8 | 55.5 |
| 32 | Andy | 8 | 25.5 |
| 58 | Rusty | 10 | 35.0 |
| 64 | Horatio | 7 | 35.0 |
| 71 | Zorba | 10 | 16.0 |
| 74 | Horatio | 9 | 35.0 |
| 85 | 張三 | 3 | 25.5 |
| 95 | 李四 | 3 | 63.5 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

mysql>
```

4. 題目中的查詢結果 (30%)

(1) 查詢 1 (15%) → SELECT S.sid FROM table_name S WHERE S.rating >= ALL (SELECT S2.rating FROM table_name S2);

```
mysql> SELECT S.sid FROM table_name S WHERE S.rating >= ALL (SELECT S2.rating FROM table_name S2);
+-----+
| sid |
+-----+
| 58 |
| 71 |
+-----+
2 rows in set (0.00 sec)
```

(2) 查詢 2 (15%) → SELECT S.rating, AVG(S.age) AS avgage FROM table_name S GROUP BY S.rating HAVING 1 < (SELECT COUNT(*) FROM table_name S2 WHERE S.rating = S2.rating);

```
mysql> SELECT S.rating, AVG(S.age) AS avgage FROM table_name S GROUP BY S.rating HAVING 1 < (SELECT COUNT(*) FROM table_name S2 WHERE S.rating = S2.rating);
+-----+
| rating | avgage |
+-----+
| 7 | 40.00000 |
| 8 | 40.50000 |
| 10 | 25.50000 |
| 3 | 44.50000 |
+-----+
4 rows in set (0.00 sec)

mysql> █
```

最後，將 Database 和 Table 清除：

(1) Delete table: DROP TABLE table_name;

```
mysql> DROP TABLE table_name;
Query OK, 0 rows affected (0.28 sec)

mysql>
```

(2) Delete database: DROP DATABASE hw1;

```
mysql> DROP DATABASE hw1;
Query OK, 0 rows affected, 1 warning (0.13 sec)

mysql>
```