

資料庫操作

劉治廷

前言

課程目標

- 如何申請免費資料庫服務
- 如何使Chrome套件來連接資料庫
- 基本SQL語法
- 由Node.js API Server進行資料庫操作

範例下載處

- <https://goo.gl/VKnHgg>
- 可以使用Clone or Download中Download Zip下載
- 建議：使用git抓取
git clone
https://github.com/silencecork/shuworkshop_late2017.git

申請免費資料庫服務

申請免費資料庫服務

- <http://www.freesqldatabase.com/>



The screenshot shows the FreeSQLdatabase website. At the top, there's a navigation bar with links: Home, MySQL, Free Website Hosting, MSSQL, Contact, and Support. A green starburst graphic on the right says "10% off upgrades and renewals for limited time only!". Below the navigation bar, there's a section titled "Free sql database is a web based service to provide sql database functionality for free. We also offer an extended sql service available through upgrade or instant registration which includes further benefits and services." This is followed by a list of benefits for members: Instant account activation, Remote connections allowed, Excellent uptime statistics, and Easy to use account control panel. Below this, it states "Free sql database is for developers at all levels, providing a secure and reliable service for developing or running production websites and services." and "Currently we offer MySQL with planes to launch further database platforms with multiple platforms including the latest releases."

	MySQL Full	MySQL Free
	Sign up	Sign up
Price per Year	\$21.15 / £13.49 / 16,82€	FREE
Instant account activation	✓	✓
Number of databases	5	1
Database Space	Starting from 100MB	5MB
phpMyAdmin	✓	✓
30 day money back guarantee	✓	---
Multiple Server Locations	✓	✓
24 hour support	✓	✓
	Sign up	Sign up

On the right side of the page, there's a "Log In" section with fields for Email Address and Password, a "Remember Me" checkbox, and a "Log In" button. Below this is a "Lost Password" link. Further down is an "Other Services" section listing: Free Website Hosting, MySQL Database Hosting, Website Hosting, MSSQL Database Hosting, Email Hosting, and Domain Name Registration. Below that is a "Recent Posts" section with three entries: "phpMyAdmin now available", "We are now open to new users", and "We will soon be accepting new accounts". At the bottom right is a "Categories" section.

申請免費資料庫服務

- 填寫Email後按下Register



The image shows the registration page for FreeSQLdatabase. The page has a blue header with the site's logo and navigation links. A yellow banner at the top right mentions a 10% discount. The main content area is divided into a registration form on the left and a list of features on the right. The registration form is highlighted with a red border and includes fields for email address and confirmation, a password link, and a 'Register' button. The features list includes instant account activation, 5 databases, a 30-day money back guarantee, and 24-hour support. A 'Log In' section is visible on the right side of the page.

FreeSQLdatabase

10% off upgrade and renewal for limited time only

Home MySQL Free Website Hosting MSSQL Contact Support

Register For This Site

Please make sure you enter a correct email address. We use your email address to communicate with you and you will not be able to use our service if you do not receive our emails.

E-mail Address

Confirm E-mail Address

A password link will be e-mailed to you.

This will only take a few minutes longer. Once you've entered your email address we will send you your new password. Return back to this website to login and start your first database.

- Instant account activation
- 5 databases
- 30 day money back guarantee
- 24 hour support

Email Address

Password

☐ Remember Me

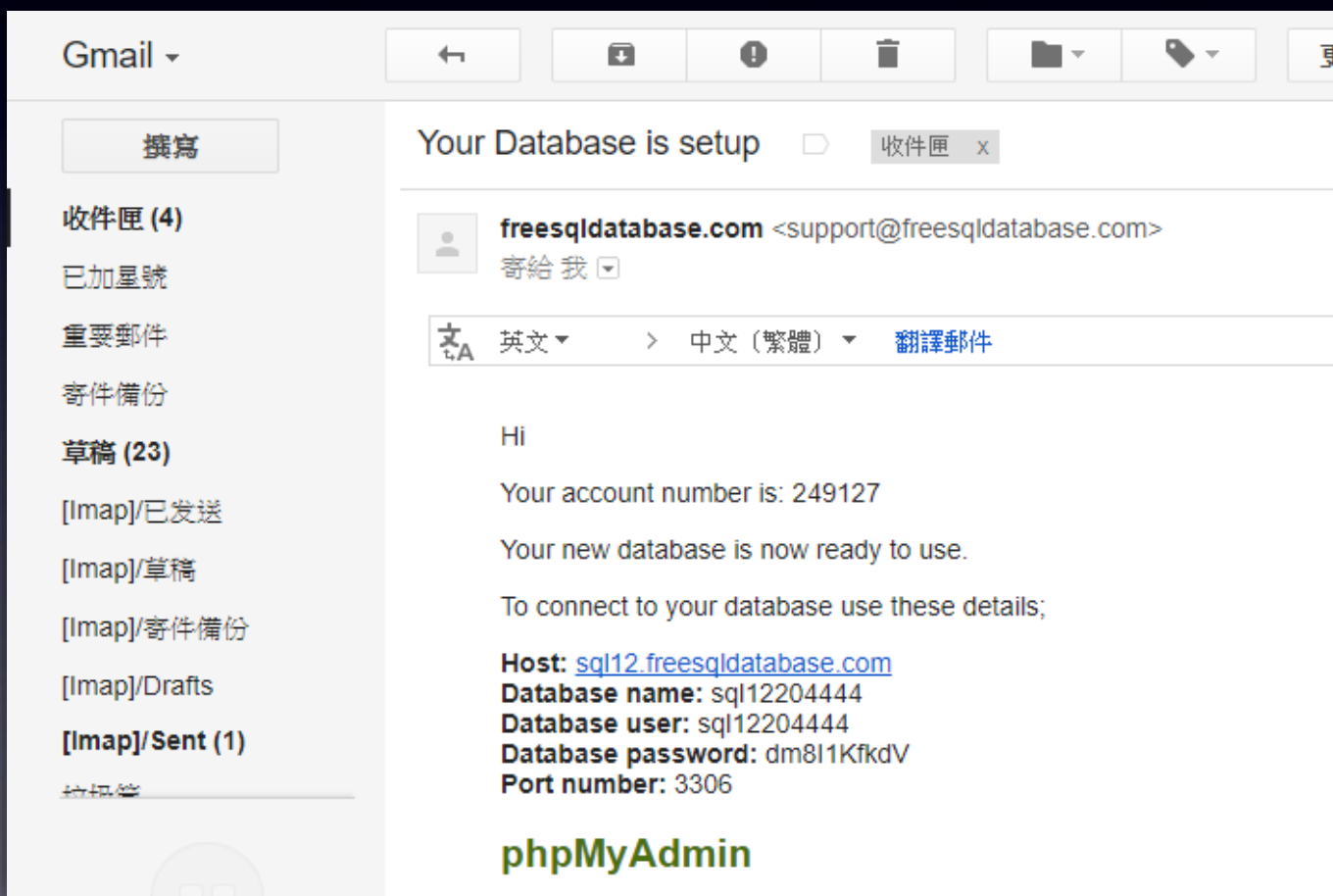
[Lost Password](#)

[Log In](#)

[Lost Password](#)

申請免費資料庫服務

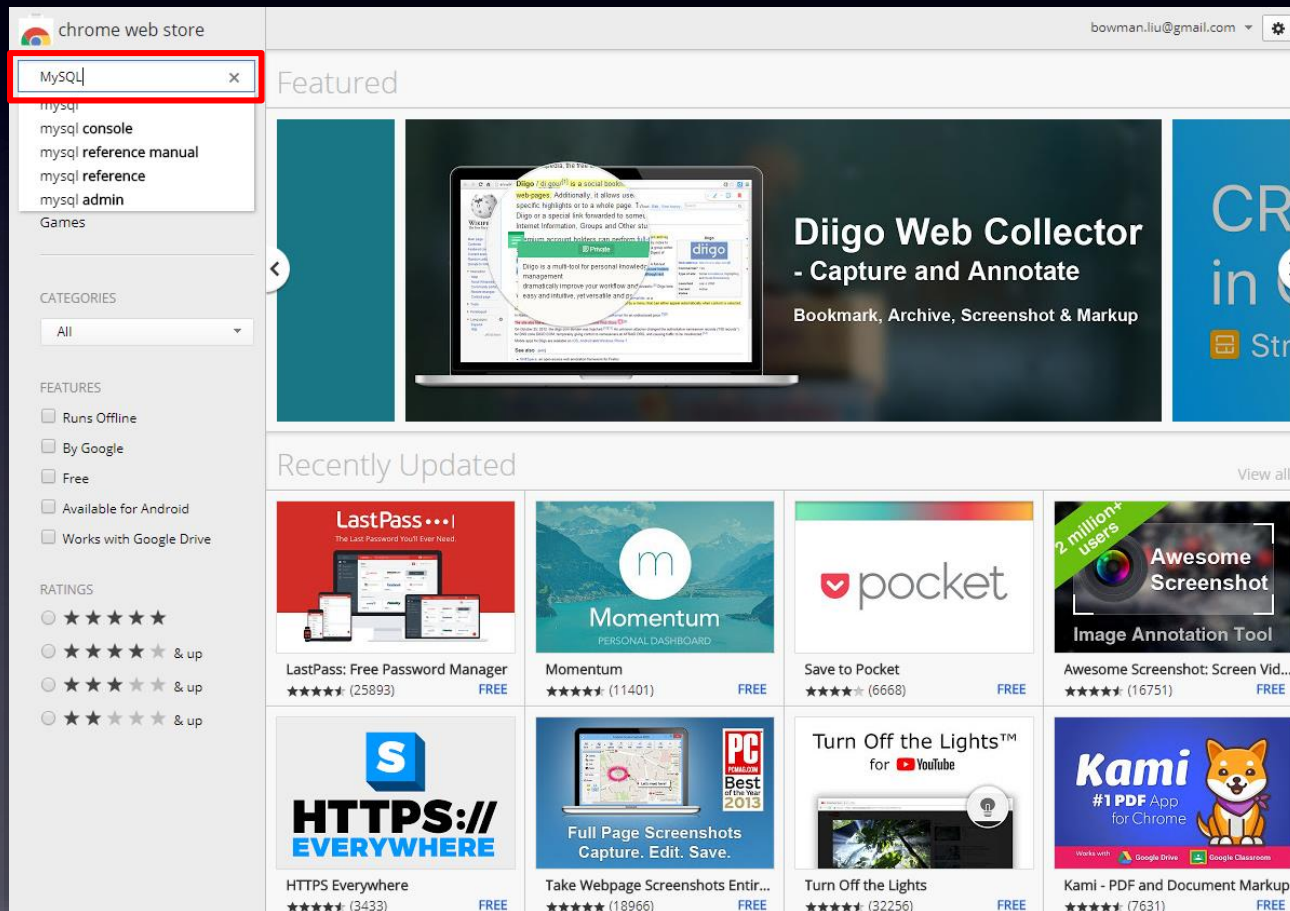
- 填寫的信箱將會收到一封Email，會包含資料庫主機位置、資料庫名稱、登入資料庫用戶名稱及密碼



安裝資料庫連線軟體

安裝資料庫連線軟體

- 打開Chrome的線上應用程式商店，在搜尋處輸入MySQL並搜尋



安裝資料庫連線軟體

- 安裝Chrome MySQL Admin

The screenshot shows the Chrome Web Store interface with a search for 'mysql'. The left sidebar contains navigation links for Home, Extensions, Themes, and Apps, along with feature filters like 'Runs Offline', 'By Google', 'Free', 'Available for Android', and 'Works with Google Drive'. The main content area is divided into 'Extensions' and 'Apps' sections. The 'Extensions' section lists three items: 'MySQL-Reference-Manual-Version-Checker', 'Hack Tab Web Security Tests', and 'Mo Code Generator'. The 'Apps' section lists three items: 'MySQL Console', 'Chrome MySQL Admin', and 'Hosting'. The 'Chrome MySQL Admin' item is highlighted with a red border and a green 'ADDED' badge. It is offered by 'https://www.eisbahn.jp/chrome_mysql_admin' and has a 5-star rating from 121 reviews. The 'Hosting' item is also visible at the bottom of the list.

chrome web store

mysql

Extensions

MySQL-Reference-Manual-Version-Checker
moznion
Warn if referring version of MySQL reference manual is out of range

Hack Tab Web Security Tests
protect.logic
Test web apps for XSS, SQL Injection, File Inclusion, support login and CSRF. Developers, QA, Pen Testers

Mo Code Generator
jeffzff
Generate Java, MyBatis and MySQL code from table define object.

Apps

MySQL Console
offered by www.eisbahn.jp/yoichiro
This application provides you 'MySQL Console' shell windows.

Chrome MySQL Admin
offered by https://www.eisbahn.jp/chrome_mysql_admin
This application provides you 'MySQL GUI Admin console' windows.

Hosting
offered by planteenhost.com
Web Hosting! A powerful cloud infrastructure that's easy to use and always within reach. Checkout our WordPress world-class hosting.

安裝資料庫連線軟體

- 安裝成功後到應用程式列表，點選MyAdmin



線上應用程式商店



LINE



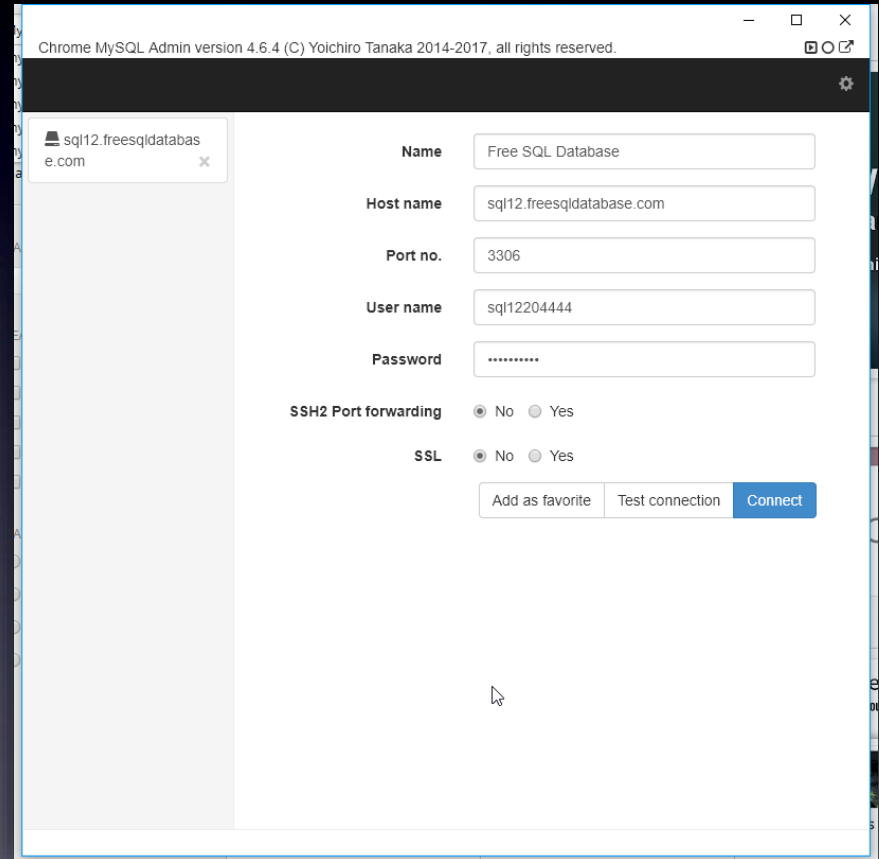
MyAdmin



Postman

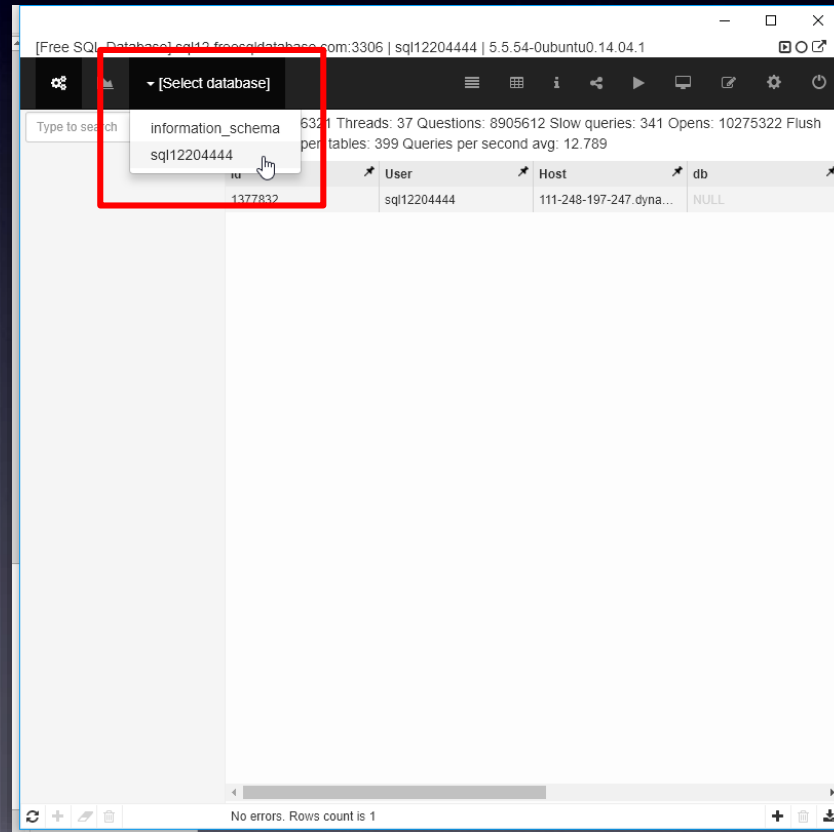
安裝資料庫連線軟體

- Name: 給資料庫連線一個名稱
- Host name: 填上Email寄送的主機位置
- Port no: 3306
- User name: 填上Email寄送的登入名稱
- Password: 填上Email送來的登入的密碼
- 按下Connect即可連線



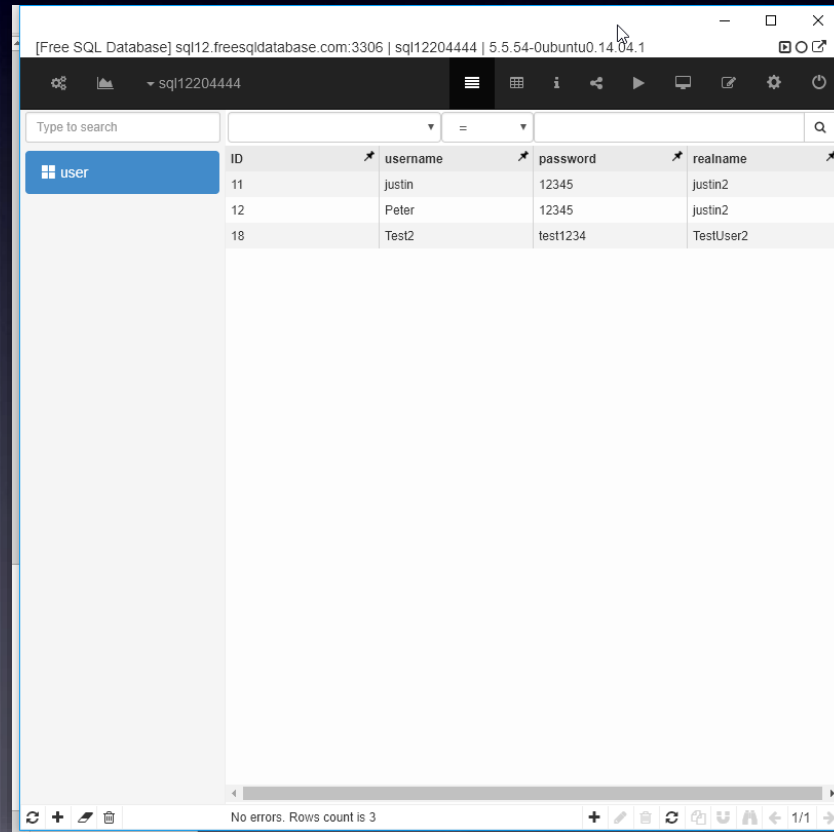
安裝資料庫連線軟體

- 上方點下後選擇資料庫



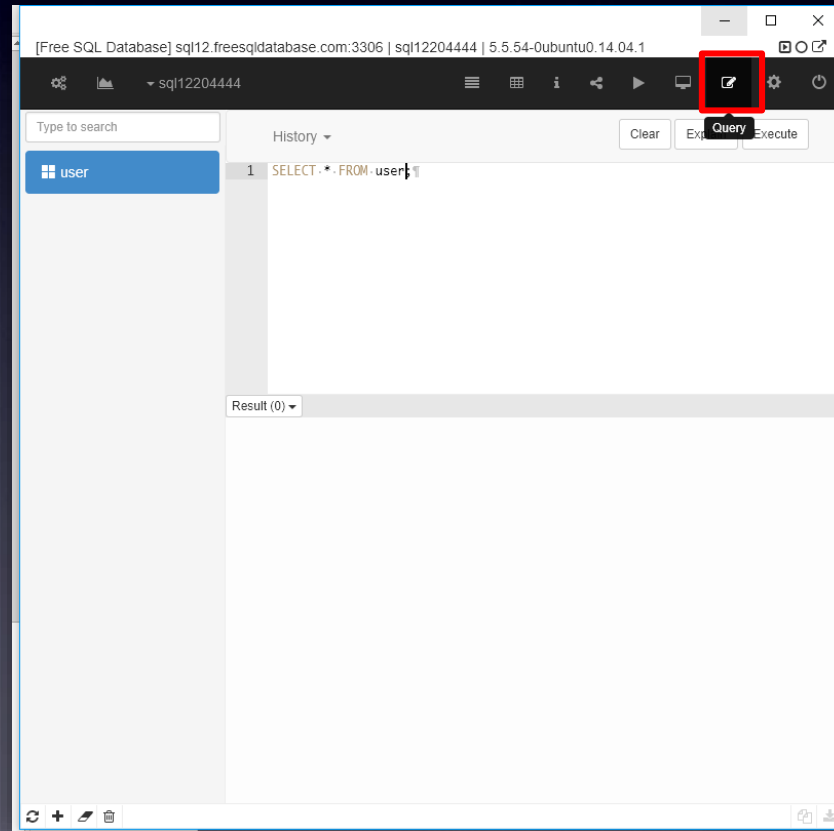
安裝資料庫連線軟體

- 選擇資料庫後，左方是資料庫中含有資料表的名稱
- 右方是選擇的資料表儲存的紀錄



安裝資料庫連線軟體

- 選擇Query功能，可以進入到輸入SQL語法的模式
- 輸入SQL結束按下Execute即可執行



基本SQL語法

基本SQL語法

- 建立資料表

- CREATE TABLE <table> (name1 type, name2 type, ...)

```
CREATE TABLE IF NOT EXISTS `runoob_tbl`(  
  `runoob_id` INT UNSIGNED AUTO_INCREMENT,  
  `runoob_title` VARCHAR(100) NOT NULL,  
  `runoob_author` VARCHAR(40) NOT NULL,  
  `submission_date` DATE,  
  PRIMARY KEY ( `runoob_id` )  
)ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

- MySQL支援數據類型

- <http://www.runoob.com/mysql/mysql-data-types.html>

基本SQL語法

- 建立資料(Insert)

- INSERT INTO <table> (field1, field2, ...) VALUES (value1, value2, ...)

```
INSERT INTO runoob_tbl  
(runoob_title, runoob_author, submission_date)  
VALUES  
("学习 PHP", "菜鸟教程", NOW());
```

- 更新資料(Update)

- UPDATE <table> SET field1=<新值>, field2=<新值>, ...
WHERE 條件

```
UPDATE runoob_tbl SET runoob_title='学习 C++' WHERE runoob_id=3;
```

基本SQL語法

- 搜尋資料 (Select)

- SELECT field1, field2 FROM <table> WHERE 條件
- SELECT * FROM <table> WHERE 條件

```
select * from runoob_tbl;
```

- 刪除資料 (Delete)

- DELETE FROM <table> WHERE 條件

```
DELETE FROM runoob_tbl WHERE runoob_id=3;
```

基本SQL語法

- WHERE條件說明

- <http://www.runoob.com/mysql/mysql-where-clause.html>

- 其他SQL語法進階

- <http://www.runoob.com/mysql/mysql-tutorial.html>

NODE.JS API進行資料庫存取

NODE.JS API進行資料庫存取

- 目標是在Node.js API Server建立五個API

- 1. /createUser 建立新的使用者

- 參數username、password、realname

- 回傳資料 {
 "status": "OK",
 "description": "..."
}

- 2. /updateUser 更新特定用戶的realname

- 參數username、realname

- 回傳資料 {
 "status": "OK",
 "description": "..."
}

NODE.JS API進行資料庫存取

- 目標是在Node.js API Server建立五個API

- 3. /deleteUser 刪除特定用戶

- 參數username

- 回傳資料

```
{  
  "status": "OK",  
  "description": "..."  
}
```

- 4. /login 使用者登入

- 參數username、password

- 回傳資料

```
{  
  "status": "OK",  
  "description": "...",  
  "data": {  
    "username": "...",  
    "password": "...",  
    "realname": "..."  
  }  
}
```


NODE.JS API進行資料庫存取

- 目標是在Node.js API Server建立五個API
 - 5. /userList 回傳全部用戶列表
 - 無參數
 - 回傳資料 {

```
    "status": "OK",
    "description": "...",
    "data": [
      {
        "username": "...",
        "password": "...",
        "realname": "..."
      },
      {
        "username": "...",
        "password": "...",
        "realname": "..."
      }
    ]
  }
```

NODE.JS API進行資料庫存取

- 首先在目前專案下安裝MySQL Node.js的套件
- 官方網站
 - <https://github.com/mysqljs/mysql>
- 安裝指令
 - `npm install --save mysql`

NODE.JS API進行資料庫存取

- 重點提示：資料庫連線與釋放連線

呼叫connect進行連線

```
var connection = mysql.createConnection(connInfo);  
connection.connect();  
...  
...  
connection.end();
```

不使用時要記得呼叫end

NODE.JS API進行資料庫存取

- 重點提示：基本語法執行

SQL語法填在這裡

SQL語法執行結果

```
connection.query(sql, function (error, results) {  
.....  
});
```

任何錯誤都會從這參數
回傳

Homework

作業

作業說明

- 本次範例的API中，/updateUser, /deleteUser需要更大的安全性，請讓這兩個API多帶入password的參數
- /updateUser或/deleteUser接收到request後，要先驗證用戶的帳號密碼是否打得正確，才可以進行更新或是刪除的動作

Q & A