

# 資料庫操作

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# 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](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 homepage of FreeSQLdatabase. At the top, there's a navigation bar with links: Home, MySQL, Free Website Hosting, MSSQL, Contact, and Support. A green starburst banner in the top right corner announces a "10% off upgrades and renewals for limited time only!". Below the navigation bar, a paragraph describes the service as a web-based SQL database functionality for free, with an extended service available through upgrade or instant registration. A list of benefits for members includes instant account activation, remote connections, excellent uptime statistics, and easy account control. Another paragraph states the service is for developers at all levels, providing a secure and reliable service. A third paragraph mentions offering MySQL with plans to launch further database platforms. A table compares the MySQL Full and MySQL Free plans. The MySQL Full plan is priced at \$21.15 / £13.49 / 16,82C per year and includes 5 databases, 100MB space, phpMyAdmin, a 30-day money back guarantee, multiple server locations, and 24-hour support. The MySQL Free plan is free and includes 1 database, 5MB space, phpMyAdmin, and 24-hour support. Both plans have a "Sign up" button. To the right of the table, there's a "Log In" section with fields for Email Address and Password, a "Remember Me" checkbox, and a "Log In" button. Below the login section 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 posts: "phpMyAdmin now available", "We are now open to new users", and "We will soon be accepting new accounts". At the bottom is a "Categories" section.

**FreeSQLdatabase**

10% off upgrades and renewals for limited time only!

Home MySQL Free Website Hosting MSSQL Contact Support

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.

Our members benefit from

- Instant account activation
- Remote connections allowed
- Excellent uptime statistics
- Easy to use account control panel

Free sql database is for developers at all levels, providing a secure and reliable service for developing or running production websites and services.

Currently we offer MySQL with planes to launch further database platforms with multiple platforms including the latest releases.

	MySQL Full	MySQL Free
	<a href="#">Sign up</a>	<a href="#">Sign up</a>
Price per Year	\$21.15 / £13.49 / 16,82C	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	✓	✓
	MySQL Full	MySQL Free
	<a href="#">Sign up</a>	<a href="#">Sign up</a>

**Log In**

Email Address

Password

☐ Remember Me

[Log In](#)

[Lost Password](#)

**Other Services**

- Free Website Hosting
- MySQL Database Hosting
- Website Hosting
- MSSQL Database Hosting
- Email Hosting
- Domain Name Registration

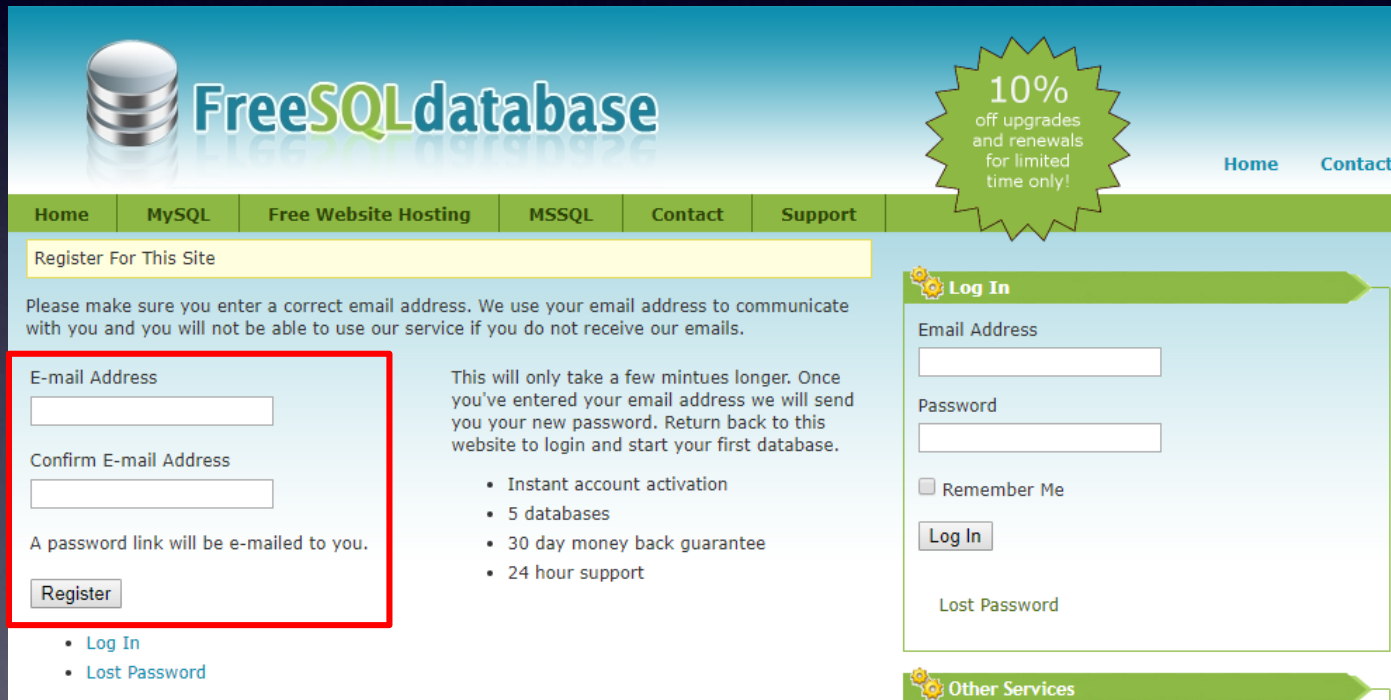
**Recent Posts**

- phpMyAdmin now available
- We are now open to new users
- We will soon be accepting new accounts
- Notice
- Popularity has exceeded our expectations

**Categories**

# 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 logo and navigation links. A green starburst in the top right corner offers a 10% discount on upgrades and renewals. The main content area is divided into a registration form on the left and a login section on the right. The registration form includes fields for E-mail Address and Confirm E-mail Address, a password link, and a Register button. A list of benefits is provided in the center. The login section has fields for Email Address and Password, a Remember Me checkbox, and a Log In button. A Lost Password link is also present. The bottom of the page features a green bar with a link to Other Services.

**FreeSQLdatabase**

10% off upgrades and renewals for limited time only!

[Home](#) [Contact](#)

[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 mintues 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

**Log In**

Email Address

Password

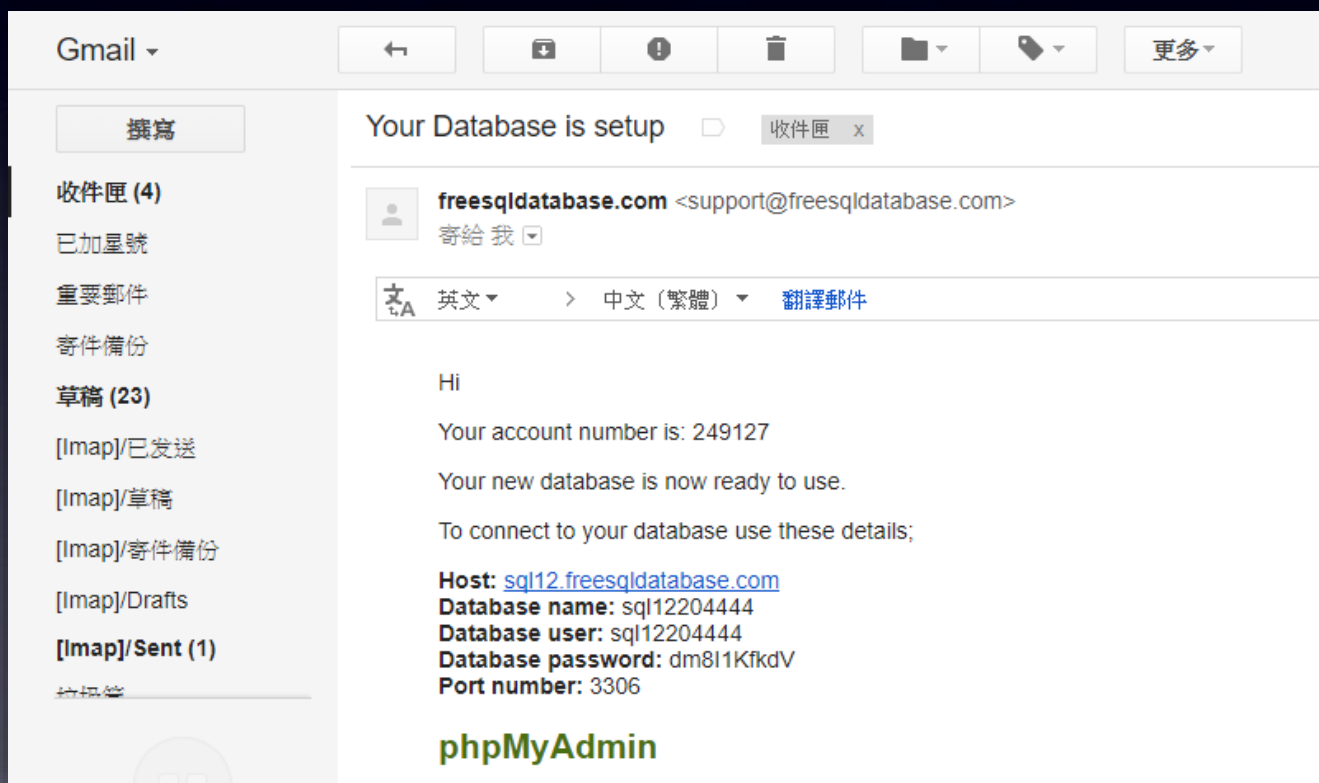
☐ Remember Me

[Lost Password](#)

**Other Services**

# 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

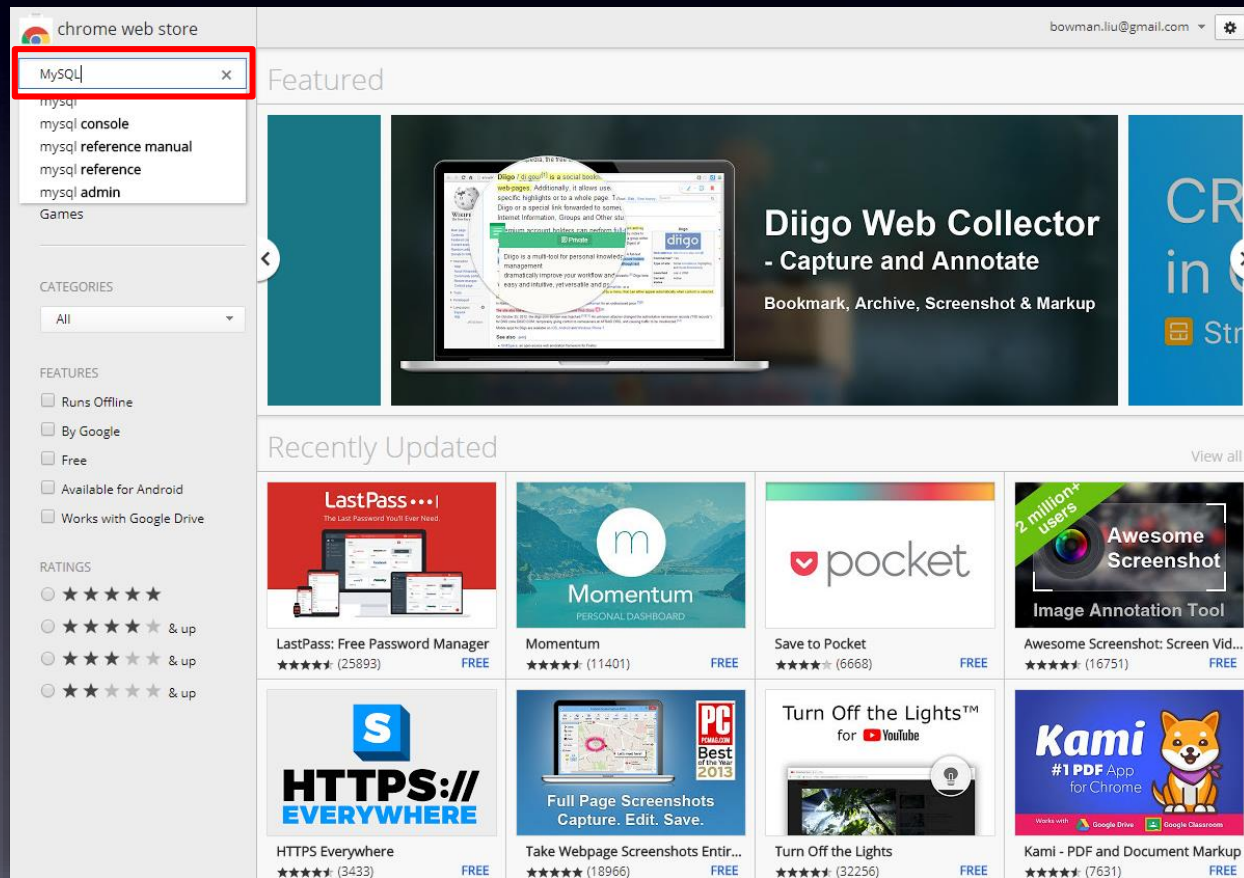




安裝資料庫連線軟體

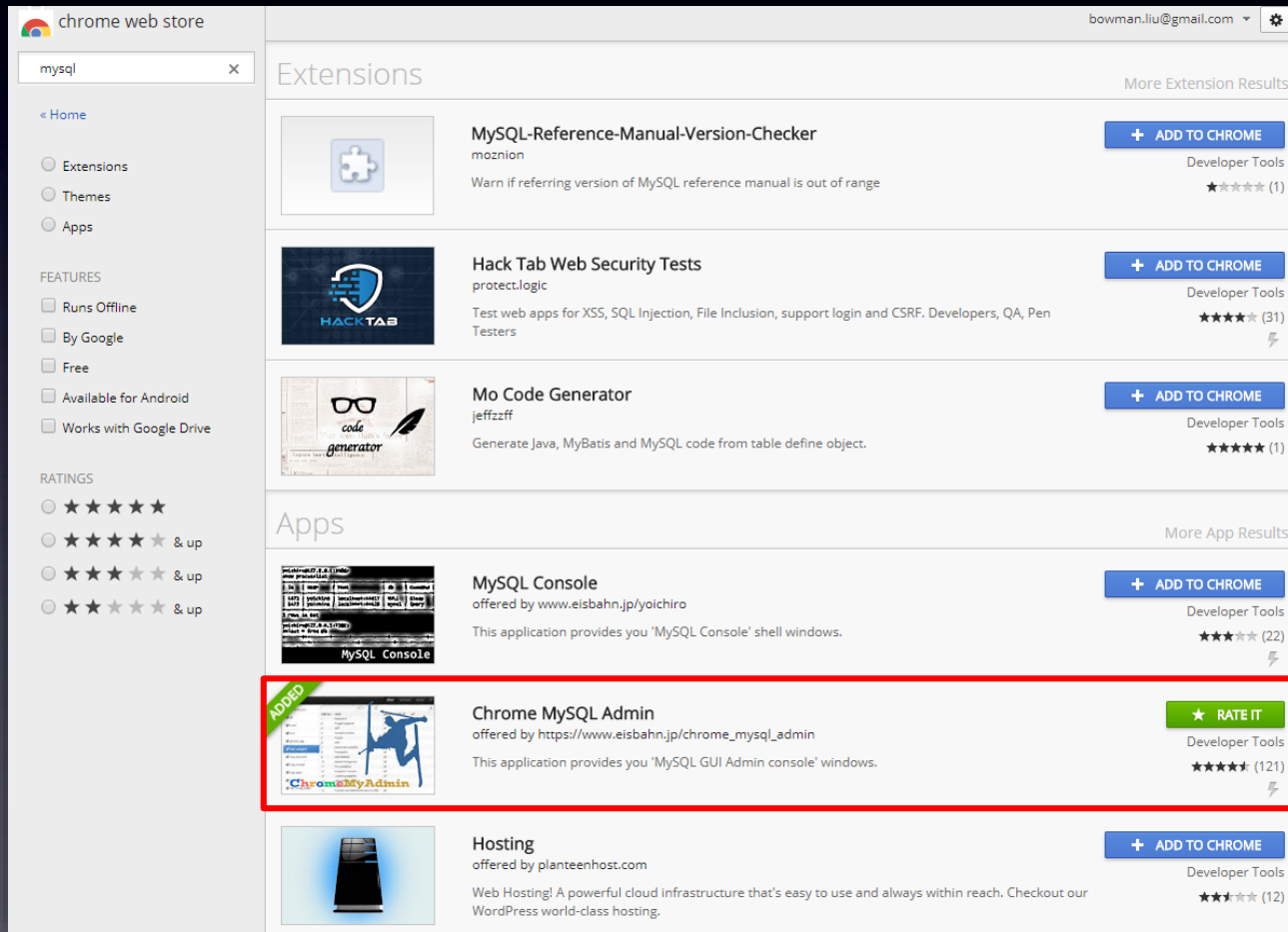
# 安裝資料庫連線軟體

- 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



# 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



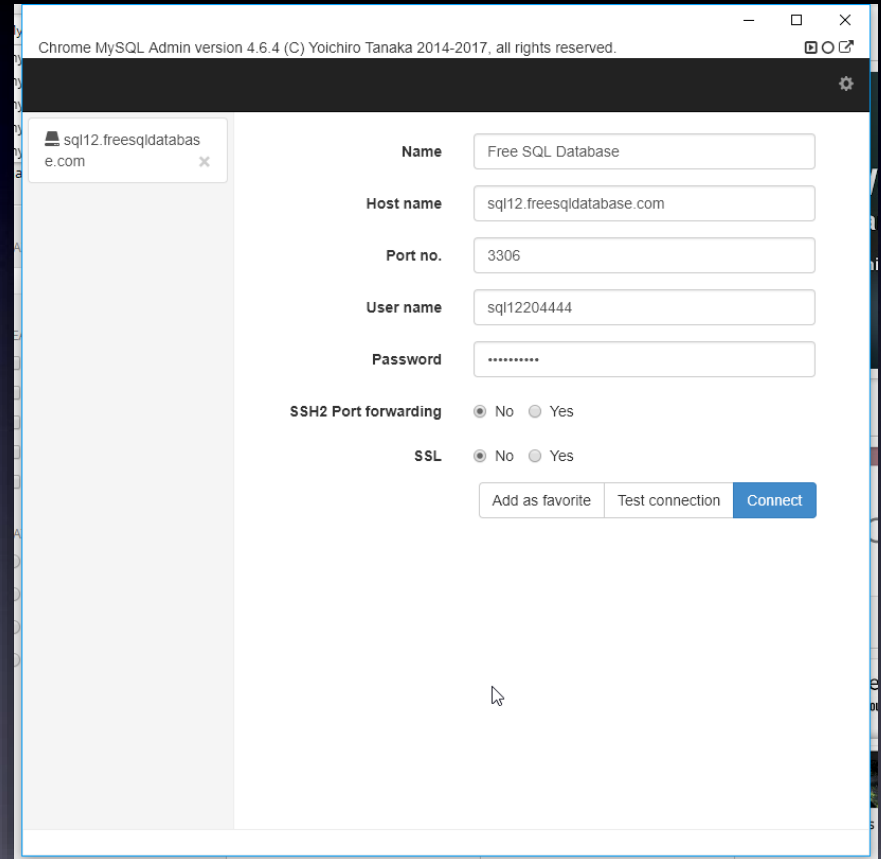
MyAdmin



Postman

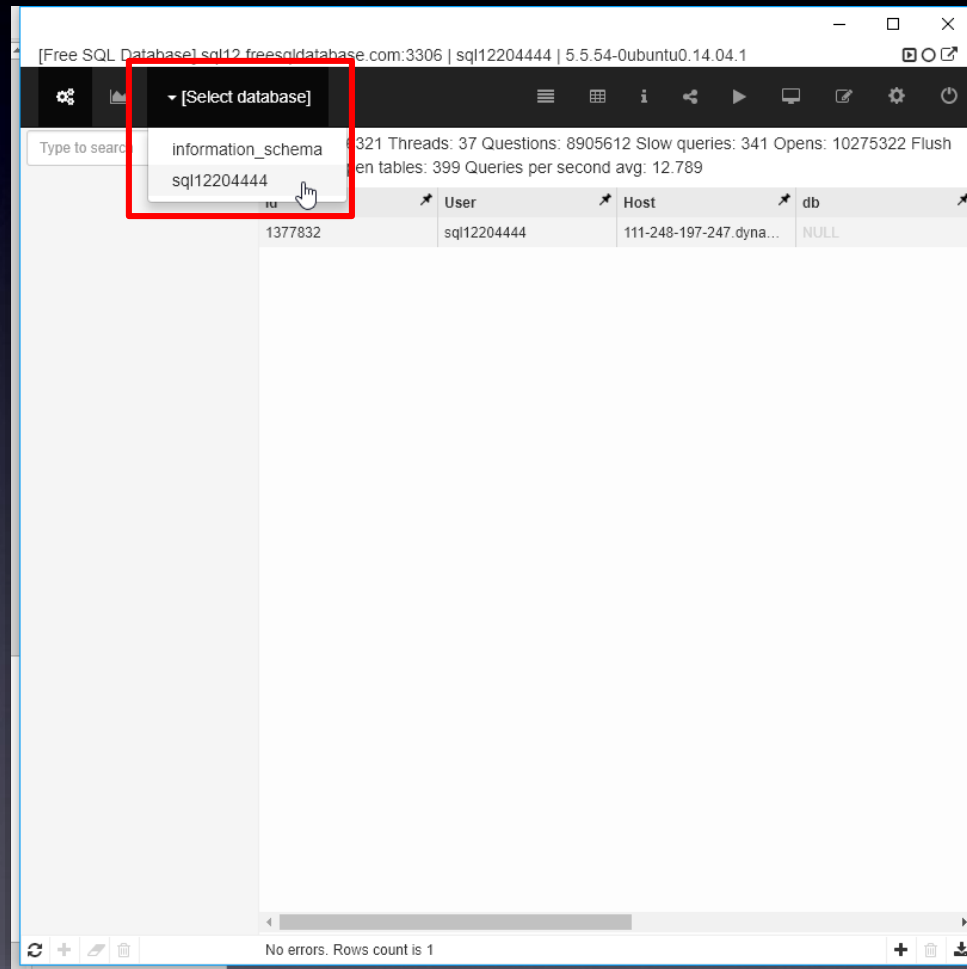
# 安裝資料庫連線軟體

- 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



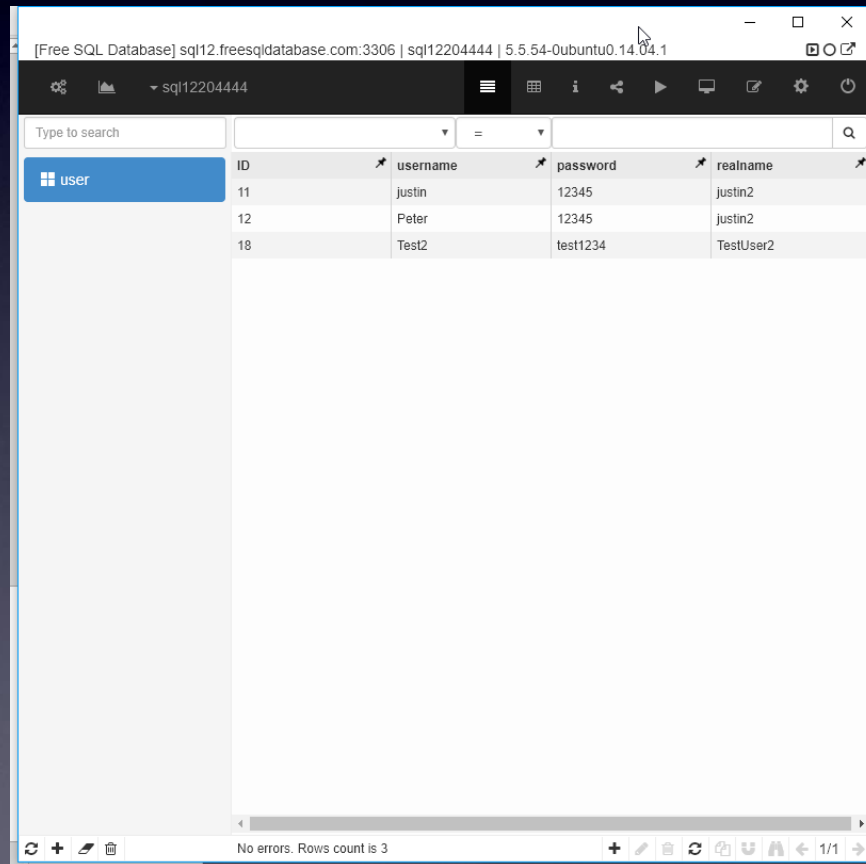
# 安裝資料庫連線軟體

- 上方點下後選擇資料庫



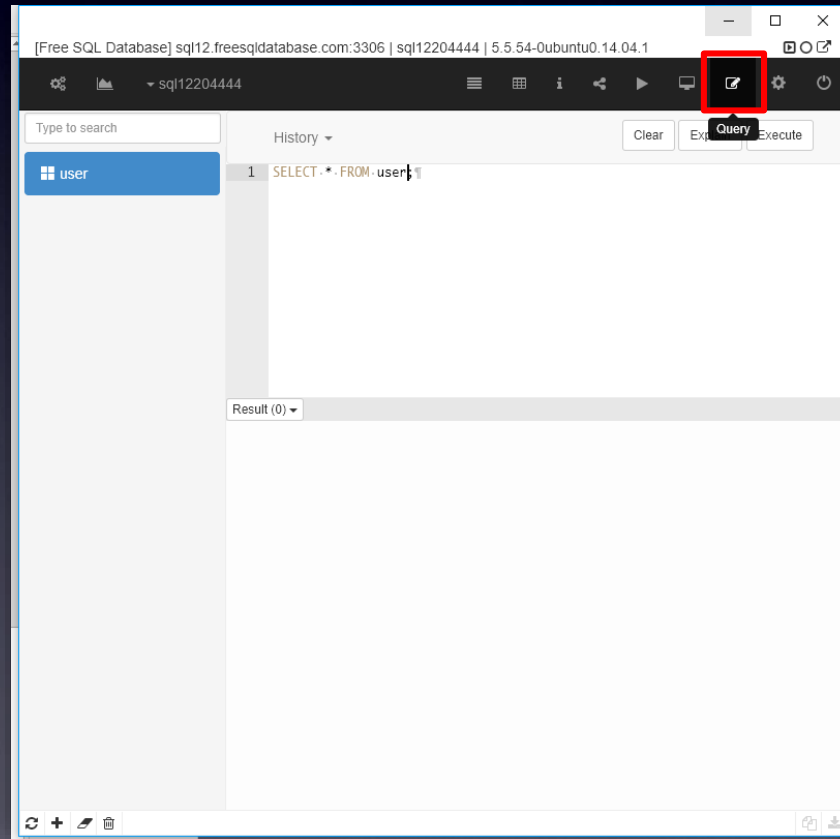
# 安裝資料庫連線軟體

- 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