

motoBlockly & ESP8266

MQTT手把手範例說明

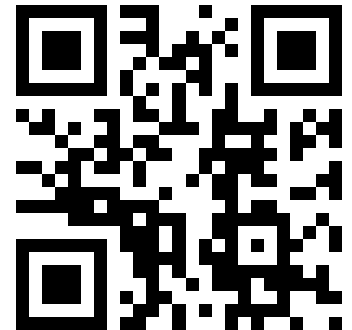
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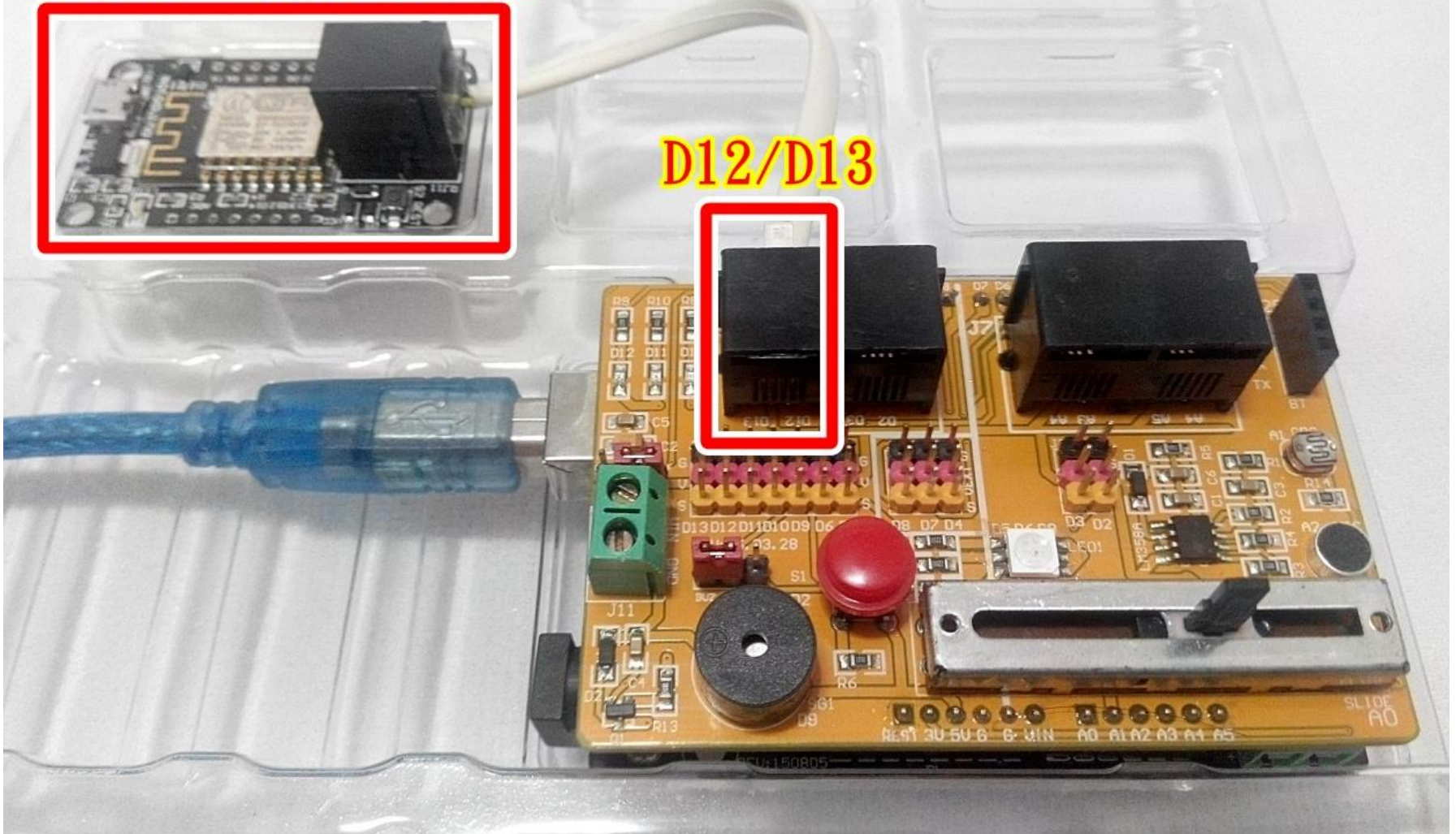
www.motduino.com

5/1/2019



硬體安裝

WiFi Terminal



A. 設定 SSID 與 Password 讓 ESP8266 模組可連上 WiFi

The screenshot shows the Motoduino IDE interface. On the left, a sidebar lists various components, with '網路設備模組' (Network Device Module) highlighted in red. The main workspace contains several code blocks. A red arrow points from the 'ESP8266 設定' block to the '設定' block. The '設定' block is configured with the following settings:

- 設定串列埠: serial
- 傳輸率: 9600 bps
- ESP8266 設定: Ver 0.40
- WiFi 模式: STATION
- 串列輸出腳位: 13
- 串列輸入腳位: 12
- SSID(分享器名稱): "Your_SSID"
- Password(密碼): "Your_Password"

Red text overlay: 請輸入ESP8266欲連線的無線AP或網路分享器的SSID與密碼

B. 連線至MQTT Server (Broker)

繁體中文



- 積木(ver1.11)
- 時間
- 腳位輸入/輸出
- 記憶體(EEPROM)
- 串列埠
- 伺服馬達
- RGB LED
- 蜂鳴器
- 顯示器
- 紅外線遙控器
- 時鐘模組(DS3231)
- 感測器
- 網路設備模組
 - Arduino+ESP8266模組
- 雲端服務平台
 - Thingspeak雲端
 - IFTTT 雲端服務
 - MQTT物聯網**
 - 中華電信IoT智慧聯網大平台
 - Rest API服務
 - NTP網路時間

Arduino 積木範例

Arduino Uno/Motoduino COM0 自動偵測COM

MQTT 物聯網服務

MQTT Server(伺服器) "iot.eclipse.org"

Client(客戶) ID ""

MQTT broker and subscribe 設定

MQTT 物聯網服務

MQTT Server(伺服器) "www.motoblockly.com"

Client(客戶) ID ""

名稱(Username) ""

密碼>Password) ""

MQTT服務功能需求(必須放置程式迴圈內)

callback訊息接收副程式(必須放置程式迴圈外)

設定

設定串列埠 serial 傳輸率 9600 bps

ESP8266 設定 Ver 0.40

WiFi 模式 STATION

串列輸出腳位 13

串列輸入腳位 12

SSID(分享器名稱) "Your_SSID"

Password(密碼) "Your_Password"

MQTT 物聯網服務

MQTT Server(伺服器) "iot.eclipse.org"

Client(客戶) ID "Your_UniqueID"

請輸入ESP8266欲連線的MQTT Server(範例為 iot.eclipse.org) 及設定自己獨一無二的Client ID

C. 訂閱 (Subscribe) MQTT 主題 (Topic)

The screenshot displays the Motoduino IDE interface. On the left sidebar, the 'MQTT 物聯網' (MQTT IoT) category is highlighted with a red box. The main workspace shows a block titled 'MQTT 物聯網服務' (MQTT IoT Service) with the following configuration:

- MQTT Server(伺服器): "www.motoblockly.com"
- Client(客戶) ID: ""
- 名稱(Username): ""
- 密碼(Password): ""

Below this, there is a 'MQTT 物聯網服務' block with the following configuration:

- MQTT Server(伺服器): "iot.eclipse.org"
- Client(客戶) ID: "Your_UniqueID"
- MQTT 物聯網服務 Subscribe Topic(訂閱主題): "Your_LEDTopic"

A red arrow points from a 'MQTT 物聯網服務 Subscribe Topic' block in the workspace to the 'MQTT 物聯網服務' block, indicating the subscription process. The workspace also shows other MQTT-related blocks like 'MQTT 服務功能需求' and '取得Topic(主題)'.

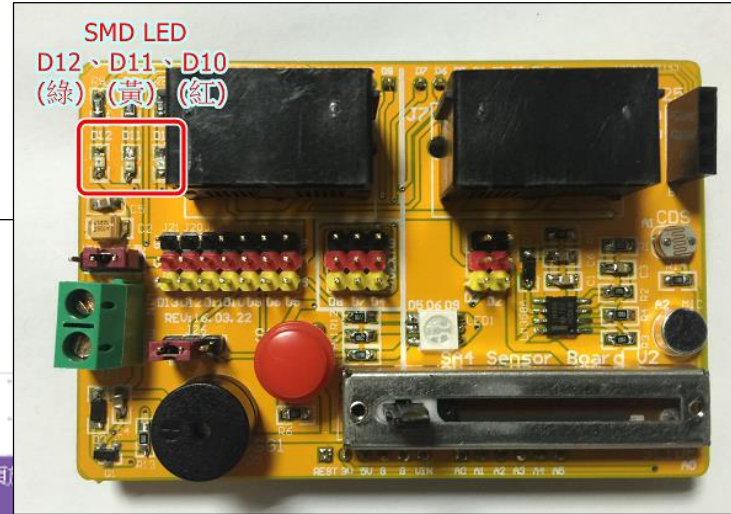
向MQTT Server訂閱自己想要被Server提醒的主題(Topic)

D. 建立當接收到訂閱的MQTT主題時的Callback副程式

The screenshot displays the Motoduino IDE interface. On the left, the component palette is visible, with the 'MQTT 物聯網' category highlighted in red. The central workspace contains several MQTT-related blocks, including 'MQTT 物聯網服務' (MQTT IoT Service) blocks for connecting to a server, setting client ID, username, and password, and a 'callback訊息接收副程式' (callback message receiving sub-program) block. A red box highlights the 'callback訊息接收副程式' block, and two red arrows point from it to the 'MQTT 物聯網服務' block in the settings panel on the right. The settings panel shows the configuration for the MQTT service, including the server address ('iot.eclipse.org'), client ID ('Your_UniqueID'), and the subscribed topic ('Your_LEDTopic').

接收到訂閱主題時的
Callback副程式

E. 完成當接收到MQTT主題時的應對動作



The screenshot shows the MotoBlockly IDE interface. On the left, the '積木' (Blocks) menu is open, with '邏輯' (Logic) highlighted. A red arrow points from the '邏輯' block to the custom MQTT callback block in the workspace. The custom block is titled 'callback訊息接收副程式(必須)' and contains the following logic:

- MQTT 事件觸發
- 如果 長度 取得Topic(主題) "Your_LEDTopic" 資料 > 0
- 執行 如果 取得Topic(主題) "Your_LEDTopic" 資料 = "LED_ON"
- 執行 設定數位腳位 10 為 高
- 否則如果 取得Topic(主題) "Your_LEDTopic" 資料 = "LED_OFF"
- 執行 設定數位腳位 10 為 低

當接收到LEDTopic主題的內容為LED_ON，LED亮，
當接收到LEDTopic主題的內容為LED_OFF，LED暗。

F.MQTT完整motoBlockly範例

設定

- 設定串列埠 serial 傳輸率 9600 bps
- ESP8266 設定 Ver 0.40
- WiFi 模式 STATION
- 串列輸出腳位 13
- 串列輸入腳位 12
- SSID(分享器名稱) "Your_SSID"
- Password(密碼) "Your_Password"
- MQTT 物聯網服務
- MQTT Server(伺服器) "iot.eclipse.org"
- Client(客戶) ID "Your_UniqueID"
- MQTT 物聯網服務 Subscribe Topic(訂閱主題) "Your_LEDTopic"

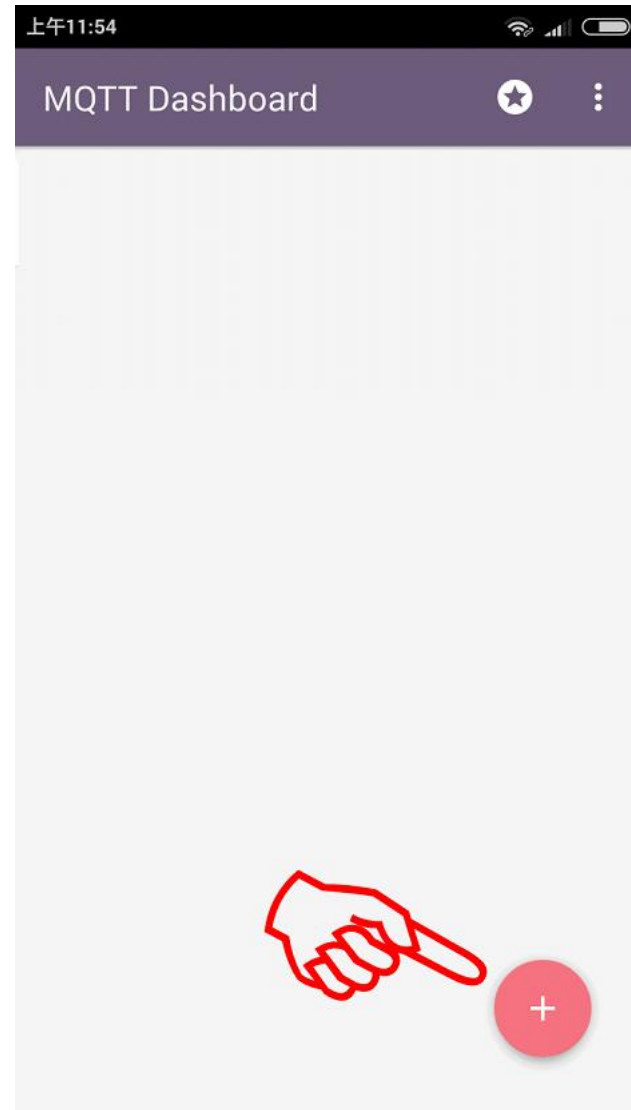
迴圈

MQTT 服務功能需求(必須放置程式迴圈內)

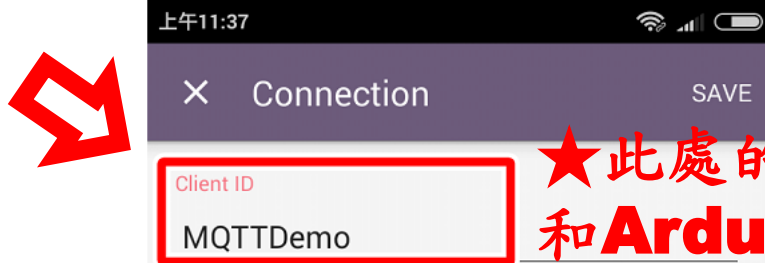
callback 訊息接收副程式(必須放置程式迴圈外)

- 如果 長度 取得Topic(主題) "Your_LEDTopic" 資料 > 0
- 執行 如果 取得Topic(主題) "Your_LEDTopic" 資料 = "LED_ON"
- 執行 設定數位腳位 10 為 高
- 否則如果 取得Topic(主題) "Your_LEDTopic" 資料 = "LED_OFF"
- 執行 設定數位腳位 10 為 低

MQTT APP - 基礎設定篇 I



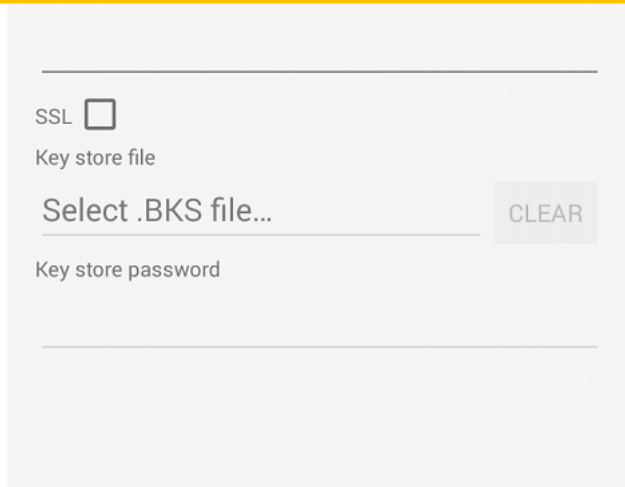
MQTT APP – 基礎設定篇 II



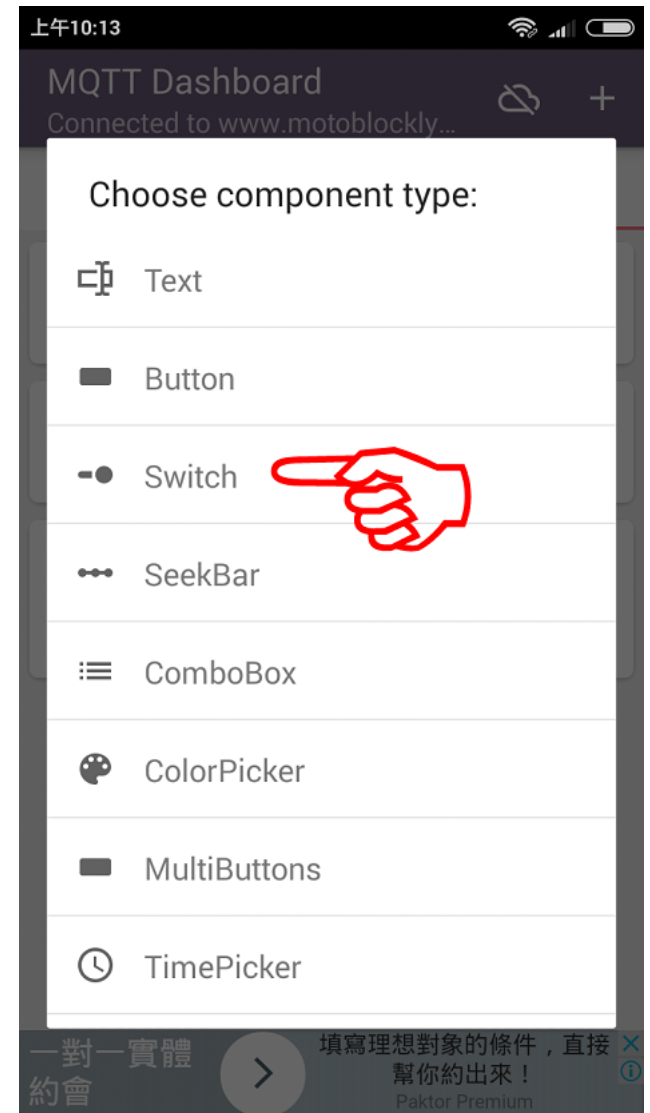
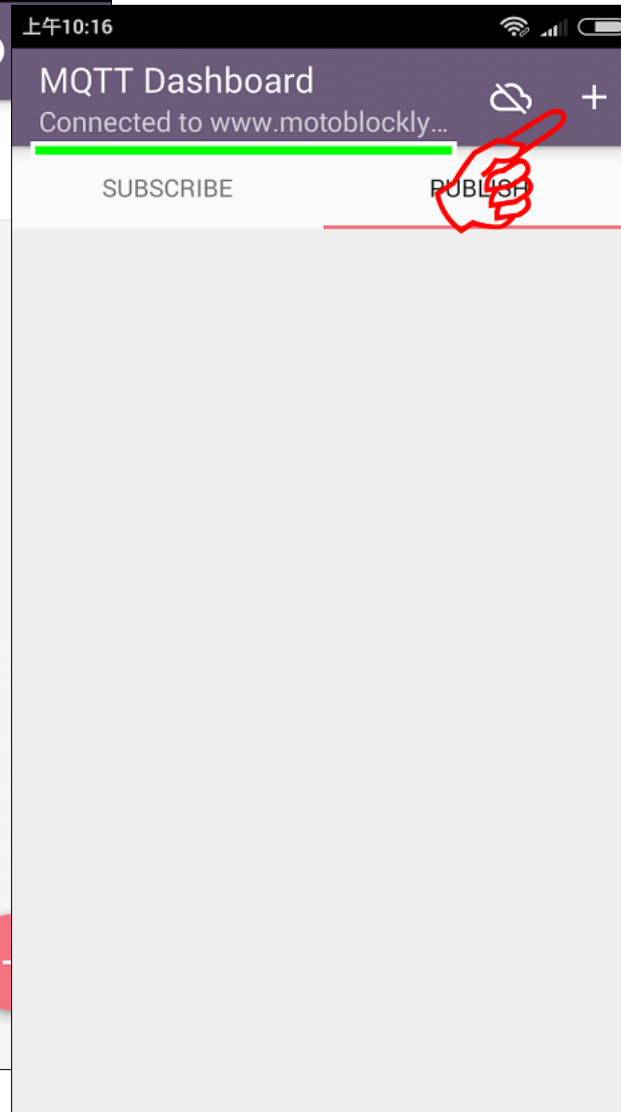
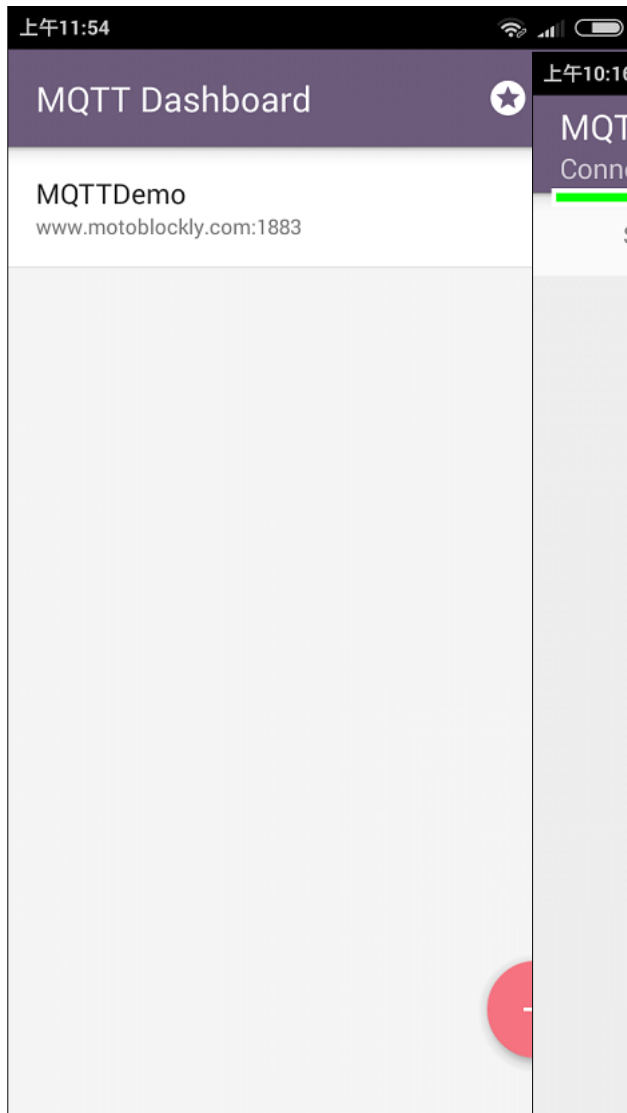
★此處的**Client ID**「絕對」不可和**Arduino**設定的**Client ID**相同★



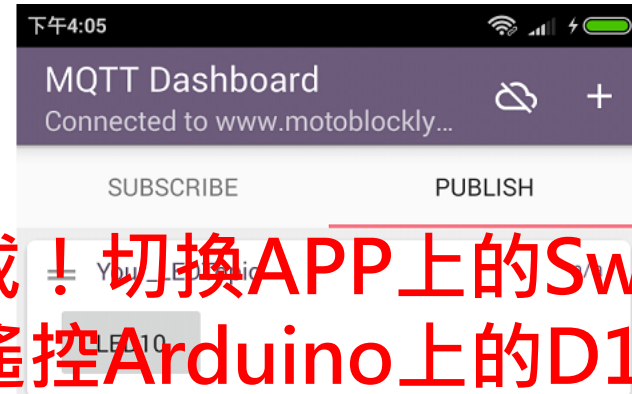
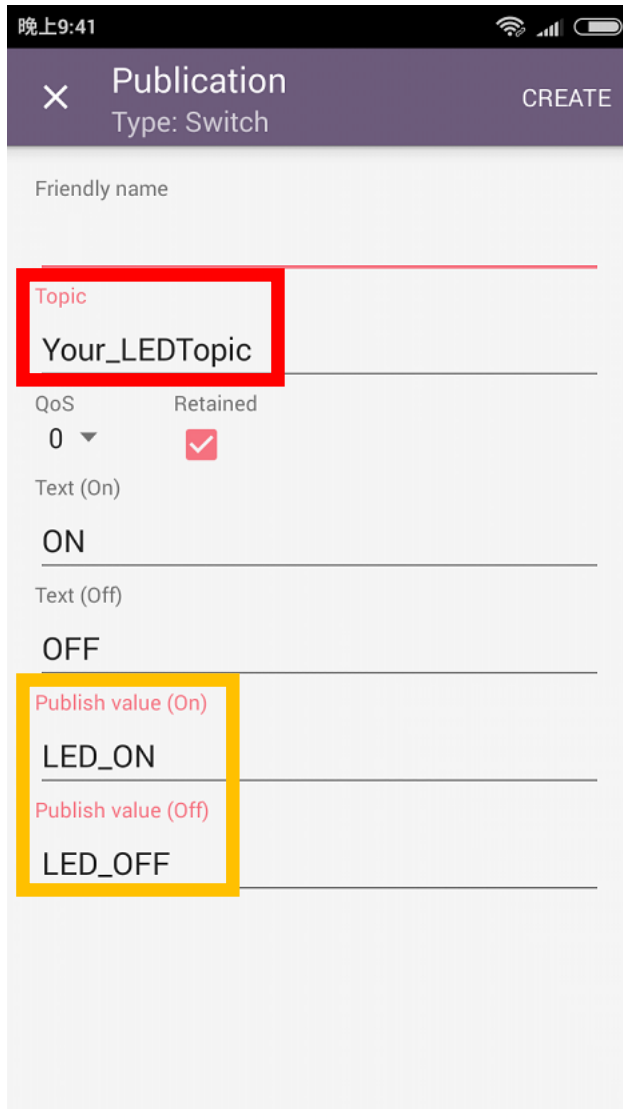
輸入**APP**欲連結的**MQTT Server**位址，此位址需與**Arduino**設定的**MQTT Server**位址相同 (範例為 **iot.eclipse.org**)



MQTT APP 對應設定篇 I



MQTT APP 對應設定篇 II



完成！ 切換APP上的Switch便可遙控Arduino上的D10 LED

