



作業系統

# IOT溫溼度測試

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**01** 系統架構設計

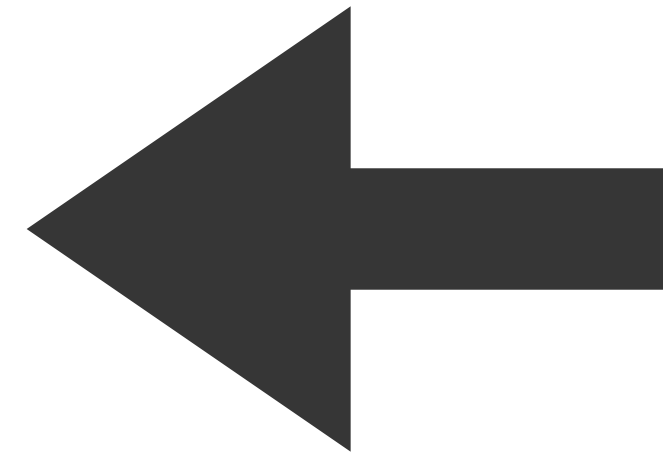
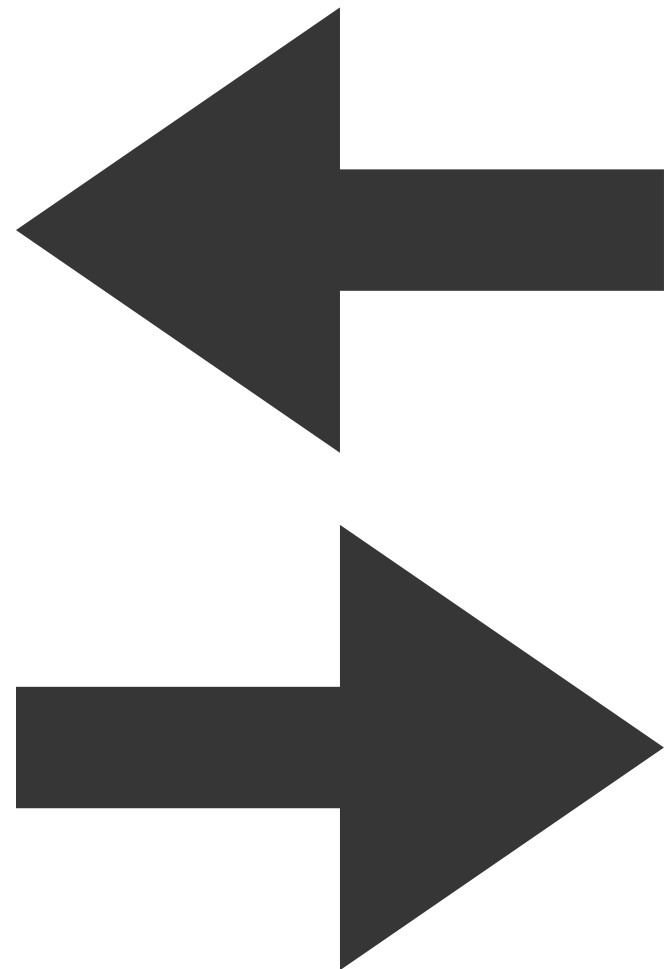
**02** 系統操作流程說明

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# 系統架構設計

回傳試算表資料

上傳溫溼度資料



請求試算表資料

# 系統操作流程說明

只需要啟動SHELL中的檔案UpdataDHTdata.sh  
會產生HTData、DHTdata.xlsx



DHTdata.  
xlsx



HTData



UpdataDHT  
data.sh

# 系統程式截圖說明

## Arduino設定:

```
#include "DHT.h"  
#include <WiFi.h>  
#include <HTTPClient.h>  
#define DHTPIN 11  
#define DHTTYPE DHT11  
DHT dht(DHTPIN, DHTTYPE);  
const char* ssid = "chts520";  
const char* password = "12345678";  
String IFTTT="https://maker.ifttt.com/trigger/DHT11/with/key/dZYY4mtmzWYKwiI9BkVZV-";
```

# 系統程式截圖說明

## Arduino傳遞資料:

```
delay(1000);  
float h = dht.readHumidity();  
float t = dht.readTemperature();  
  
Serial.print("Humidity: ");  
Serial.print(h);  
Serial.print(" %\t");  
Serial.print("Temperature: ");  
Serial.print(t);  
Serial.println(" *C ");  
String IFTTTurl=IFTTT+"?value1="+String((float)t)+"&value2="+String((float)h);  
HTTPClient http;  
Serial.print("===HTTP Send data to IFTTT===\n");  
http.begin(IFTTTurl);
```

# 系統程式截圖說明

## Arduino傳遞是否成功:

```
Serial.print("===HTTP GET Status===\n");
int httpCode = http.GET();
    if(httpCode > 0) {
        Serial.printf("HTTP to get Feedback status: %d\n", httpCode);
        if(httpCode == HTTP_CODE_OK) {
            String payload = http.getString();
            Serial.println(payload);
        }
        else {
            Serial.printf("HTTP to get Feedback failed, error: %s\n", http.errorToString(httpCode).c_str());
        }
        Serial.println("=====");
        http.end();
    }
    delay(3600000);
}
```

# 系統程式截圖說明

## Excel轉json:

```
function doGet(e) {  
    var SpreadSheet = SpreadsheetApp.getActive();  
    var SheetName = SpreadSheet.getSheetByName('工作表1');  
    var data = SheetName.getSheetValues(1,1,SheetName.getLastRow(),SheetName.getLastColumn());  
    Logger.log(data)  
    return ContentService.createTextOutput(JSON.stringify(data)).setMimeType(ContentService.MimeType.JSON);  
}
```



# 系統程式截圖說明

shell抓雲端資料並生成新xlsx:

```
#!/bin/bash
HTData= HTData.txt
data= curl -L https://script.google.com/macros/s/AKfycbz8ZkHWngYTZ-KLWl-dK1Pk3St4NULcVN7ueogBjvIRcpLMouWdzU7AbWKypkaAhYuF_g/exec >
HTData
```

# 系統程式截圖說明

## shell抓雲端資料並生成新xlsx:

```
cat << EOF > creatExcel.py
import xlsxwriter
import ast
workbook = xlsxwriter.Workbook('DHTdata.xlsx')
worksheet = workbook.add_worksheet()
f = open('HTData','r')
allData = f.read()
allDataList = ast.literal_eval(allData)
for i in range(len(allDataList)):
    worksheet.write('A{}'.format(i+1),str(allDataList[i][0]))
    worksheet.write('B{}'.format(i+1),str(allDataList[i][1]))
    worksheet.write('C{}'.format(i+1),str(allDataList[i][2]))
    worksheet.write('D{}'.format(i+1),str(allDataList[i][3]))
f.close()
workbook.close()
EOF
python3 creatExcel.py
rm creatExcel.py
#gedit HTData.txt
```

# 系統程式截圖說明

## DHTata.text資料:

```
[["Time","Area","Temperature","Humidity"],["December 5, 2023 at 02:31PM","DHT11",25.3,76],["December 5, 2023 at 03:31PM","DHT11",25.3,75],["December 5, 2023 at 04:31PM","DHT11",25.3,75],["December 5, 2023 at 05:31PM","DHT11",24.5,76],["December 5, 2023 at 06:31PM","DHT11",24.8,73],["December 5, 2023 at 07:31PM","DHT11",24.5,73],["December 5, 2023 at 08:31PM","DHT11",24.5,73],["December 5, 2023 at 09:31PM","DHT11",24.5,73],["December 5, 2023 at 10:31PM","DHT11",24.5,72],["December 5, 2023 at 11:31PM","DHT11",24.8,71],["December 6, 2023 at 12:31AM","DHT11",24.5,70],["December 6, 2023 at 01:31AM","DHT11",24.8,72],["December 6, 2023 at 02:32AM","DHT11",25.3,73],["December 6, 2023 at 03:32AM","DHT11",24.8,72],["December 6, 2023 at 04:32AM","DHT11",24.5,72],["December 6, 2023 at 05:32AM","DHT11",24.1,73],["December 6, 2023 at 06:32AM","DHT11",23.8,73],["December 6, 2023 at 07:32AM","DHT11",23.8,73],["December 6, 2023 at 08:32AM","DHT11",23.8,73]]
```

# 系統程式截圖說明

DHTata.xlsx資料:

Time	Area	Temperature	Humidity
Decembe	DHT11	25.3	76
Decembe	DHT11	25.3	75
Decembe	DHT11	25.3	75
Decembe	DHT11	24.5	76
Decembe	DHT11	24.8	73
Decembe	DHT11	24.5	73
Decembe	DHT11	24.5	73
Decembe	DHT11	24.5	73
Decembe	DHT11	24.5	72
Decembe	DHT11	24.8	71
Decembe	DHT11	24.5	70
Decembe	DHT11	24.8	72
Decembe	DHT11	25.3	73
Decembe	DHT11	24.8	72
Decembe	DHT11	24.5	72
Decembe	DHT11	24.1	73
Decembe	DHT11	23.8	73
Decembe	DHT11	23.8	73
Decembe	DHT11	23.8	73