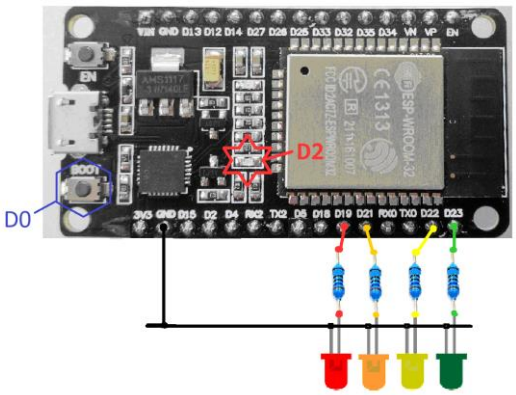
แนวทางการใช้งานอินเทอร์เน็ตของสรรพสิ่งในระบบการผลิต
IoT Approaches to Manufacturing System

ชื่อ-สกุล : นางสาวณัฐชยา ผ่องกุศล B6226718

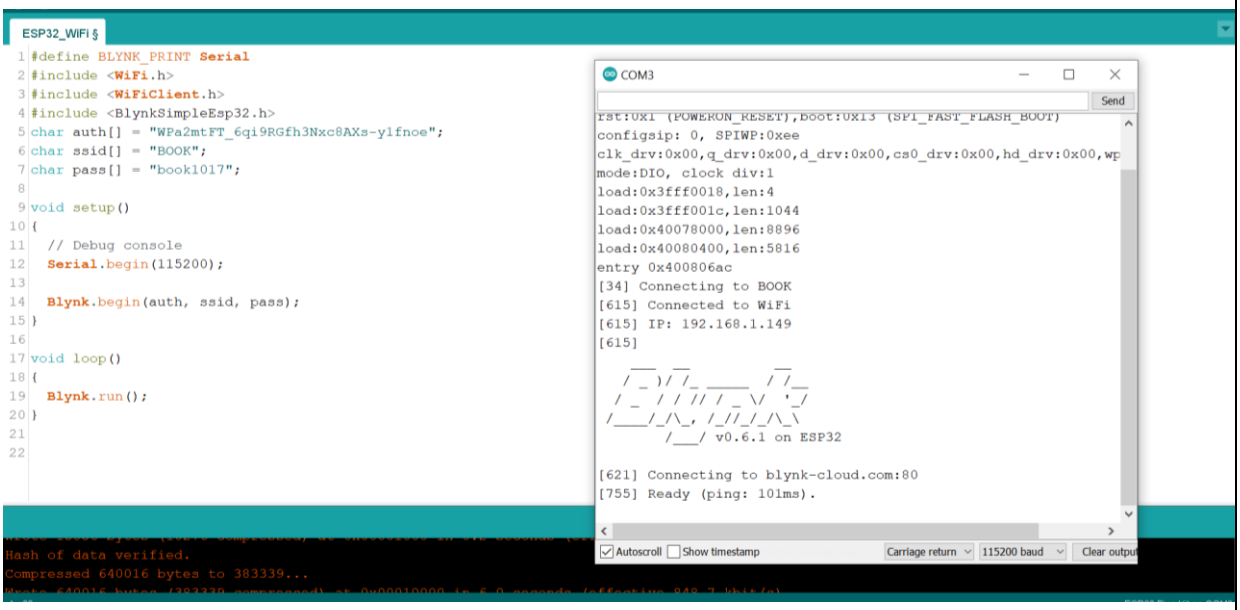
3/3. คำถามท้ายบทเพื่อทดสอบความเข้าใจ

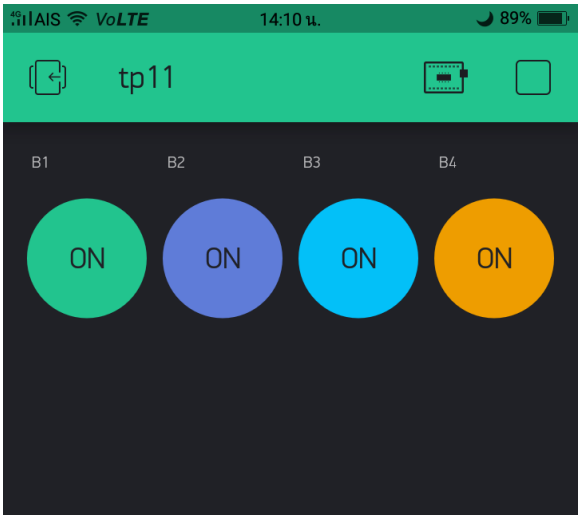
Quiz_301 – 4 External LED Control

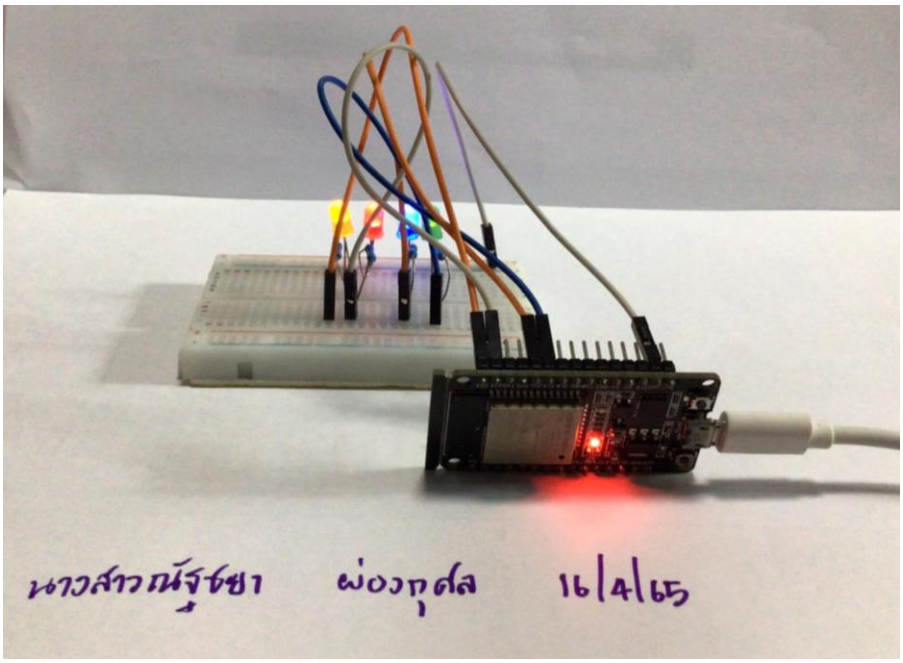


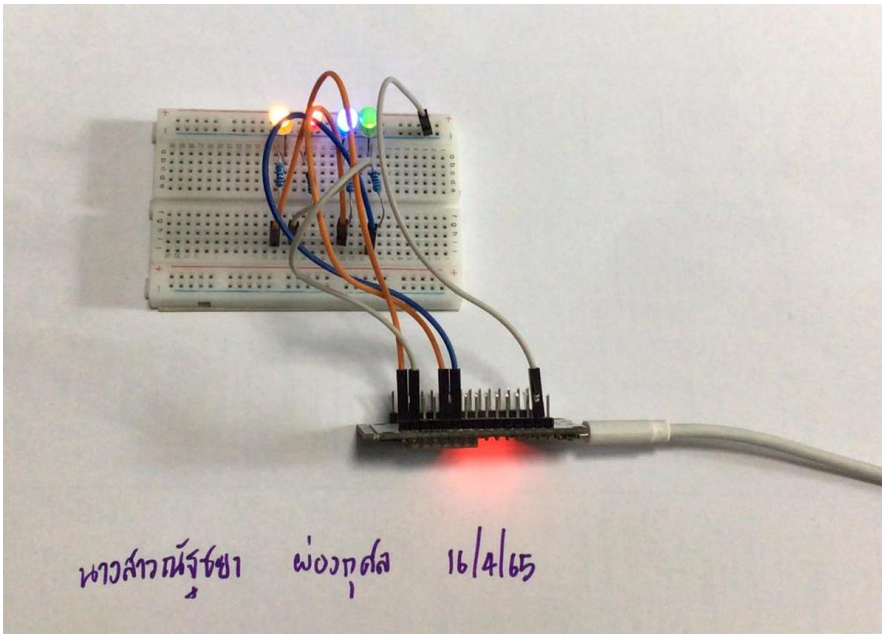

```
#define BLYNK_PRINT Serial
#include <WiFi.h>
#include <WiFiClient.h>
#include <BlynkSimpleEsp32.h>
char auth[] = "WPa2mtFT_6qi9RGfh3Nxc8AXs-y1fnoe";
char ssid[] = "BOOK";
char pass[] = "book1017";

void setup()
{
  // Debug console
  Serial.begin(115200);

  Blynk.begin(auth, ssid, pass);
}
```

```
void loop()
{
  Blynk.run();
}
```

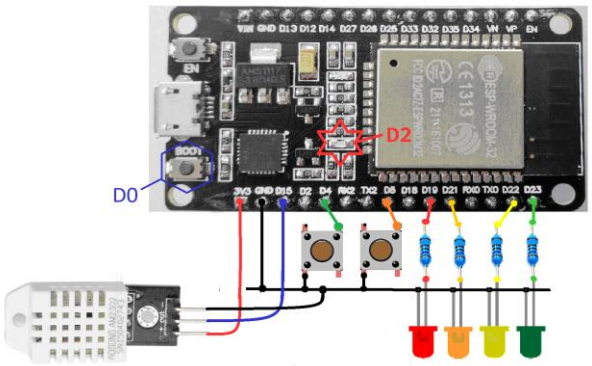





นางสาวณัฐชยา ผ่องกุศล 16/4/65

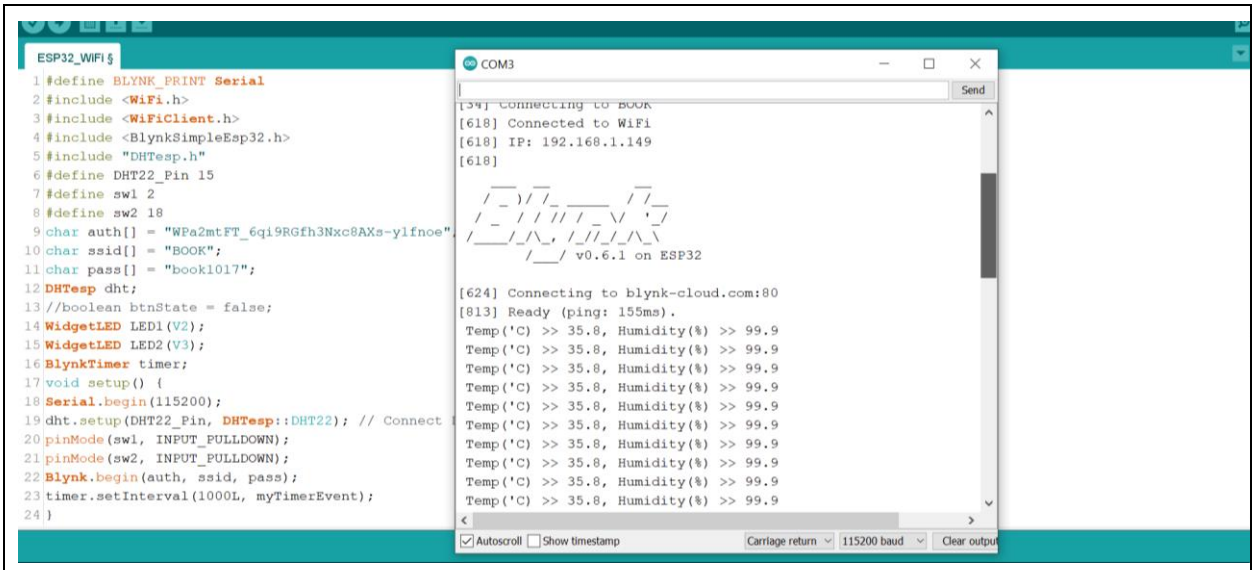

นางสาวณัฐชยา ผ่องกุศล 16/4/65

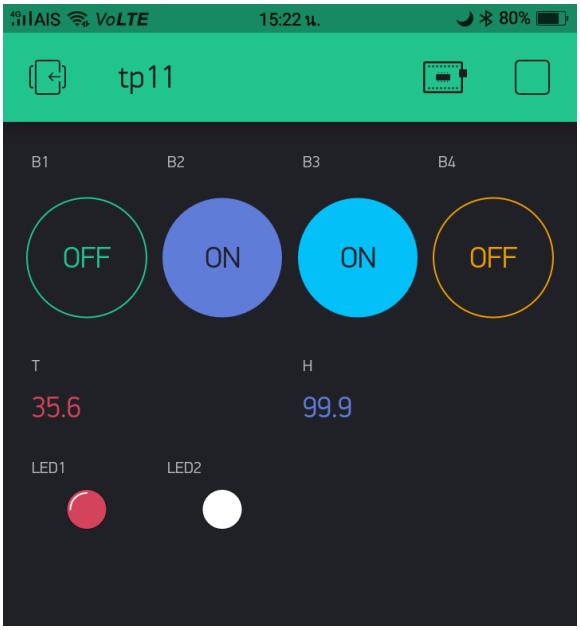
Quiz_302 – DHT22 + 4 LED + 2 Switch

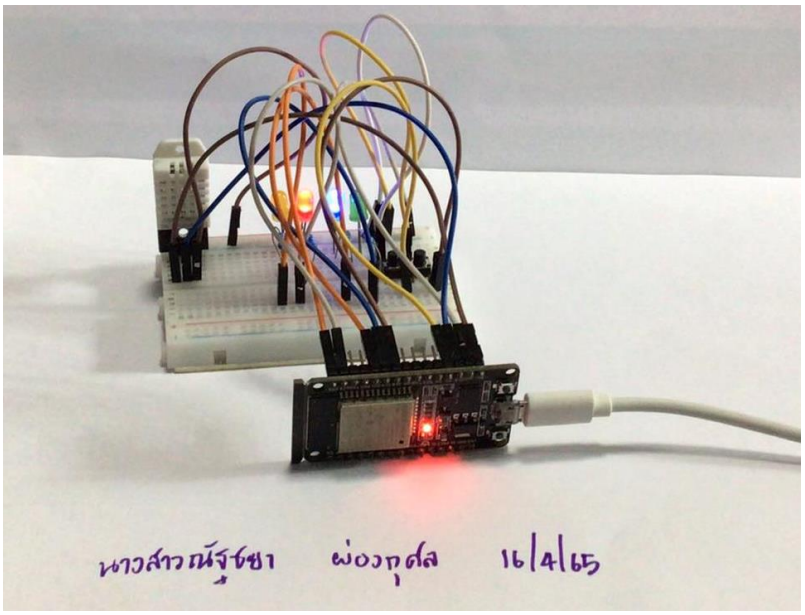


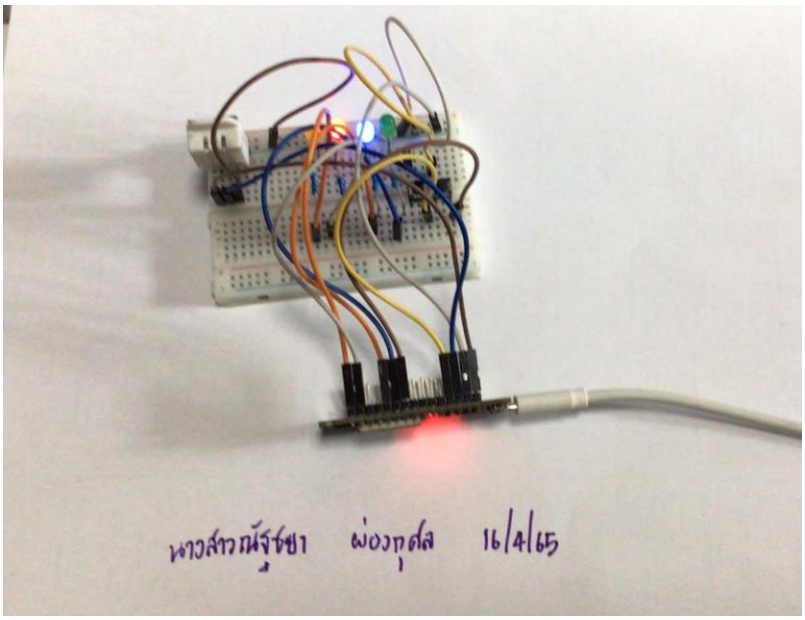

```
#define BLYNK_PRINT Serial
#include <WiFi.h>
#include <WiFiClient.h>
#include <BlynkSimpleEsp32.h>
#include "DHTesp.h"
#define DHT22_Pin 15
#define sw1 2
#define sw2 18
char auth[] = "WPa2mtFT_6qi9RGfh3Nxc8AXs-y1fnoe";
char ssid[] = "BOOK";
char pass[] = "book1017";
DHTesp dht;
//boolean btnState = false;
WidgetLED LED1(V2);
WidgetLED LED2(V3);
BlynkTimer timer;
void setup() {
Serial.begin(115200);
dht.setup(DHT22_Pin, DHTesp::DHT22); // Connect DHT sensor to GPIO 15
pinMode(sw1, INPUT_PULLDOWN);
```

```
pinMode(sw2, INPUT_PULLDOWN);
Blynk.begin(auth, ssid, pass);
timer.setInterval(1000L, myTimerEvent);
}
void myTimerEvent() {
float humidity = dht.getHumidity();
float temperature = dht.getTemperature();
Blynk.virtualWrite(V0, temperature);
Blynk.virtualWrite(V1, humidity);
if (digitalRead(sw1)) LED1.on();
else LED1.off();
if (digitalRead(sw2)) LED2.on();
else LED2.off();
Serial.print(" Temp('C) >> "); Serial.print(temperature, 1);
Serial.print(", Humidity(%) >> "); Serial.println(humidity, 1);
}
void loop()
{ Blynk.run();
timer.run(); // running timer every 250ms
}
```


ESP32_WiFi §
#define BLYNK_PRINT Serial
#include <WiFi.h>
#include <WiFiClient.h>
#include <BlynkSimpleEsp32.h>
#include "DHTesp.h"
#define DHT22_Pin 15
#define sw1 2
#define sw2 18
char auth[] = "WPa2mtFT_6qi9RGfh3Nxc8AXs-ylfnoe";
char ssid[] = "BOOK";
char pass[] = "book1017";
DHTesp dht;
//boolean btnState = false;
WidgetLED LED1(V2);
WidgetLED LED2(V3);
BlynkTimer timer;
void setup() {
Serial.begin(115200);
dht.setup(DHT22_Pin, DHTesp::DHT22); // Connect
pinMode(sw1, INPUT_PULLDOWN);
pinMode(sw2, INPUT_PULLDOWN);
Blynk.begin(auth, ssid, pass);
timer.setInterval(1000L, myTimerEvent);
}
COM3
Send
[618] Connected to WiFi
[618] IP: 192.168.1.149
[618]
v0.6.1 on ESP32
[624] Connecting to blynk-cloud.com:80
[813] Ready (ping: 155ms).
Temp('C) >> 35.8, Humidity(%) >> 99.9
Autoscroll
Show timestamp
Carriage return
115200 baud
Clear output


AIS VoLTE
15:22 น.
80%
tp11
B1
B2
B3
B4
OFF
ON
ON
OFF
T
35.6
H
99.9
LED1
LED2

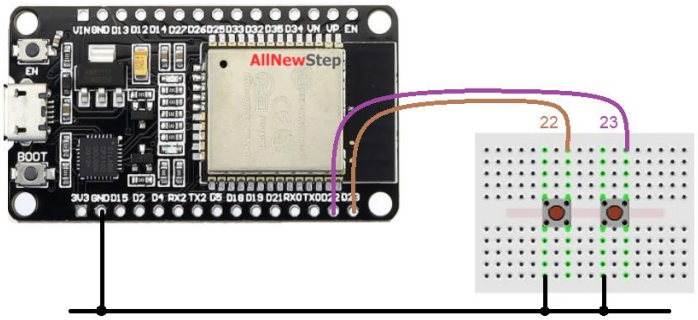

นางสาวณัฐชยา ผ่องกุศล 16/4/65


นางสาวณัฐชยา ผ่องกุศล 16/4/65

Quiz_303 – Social Alert

ทดสอบการส่งข้อมูลไป ☐ LINE สำหรับสวิตช์กด 3 ตัว

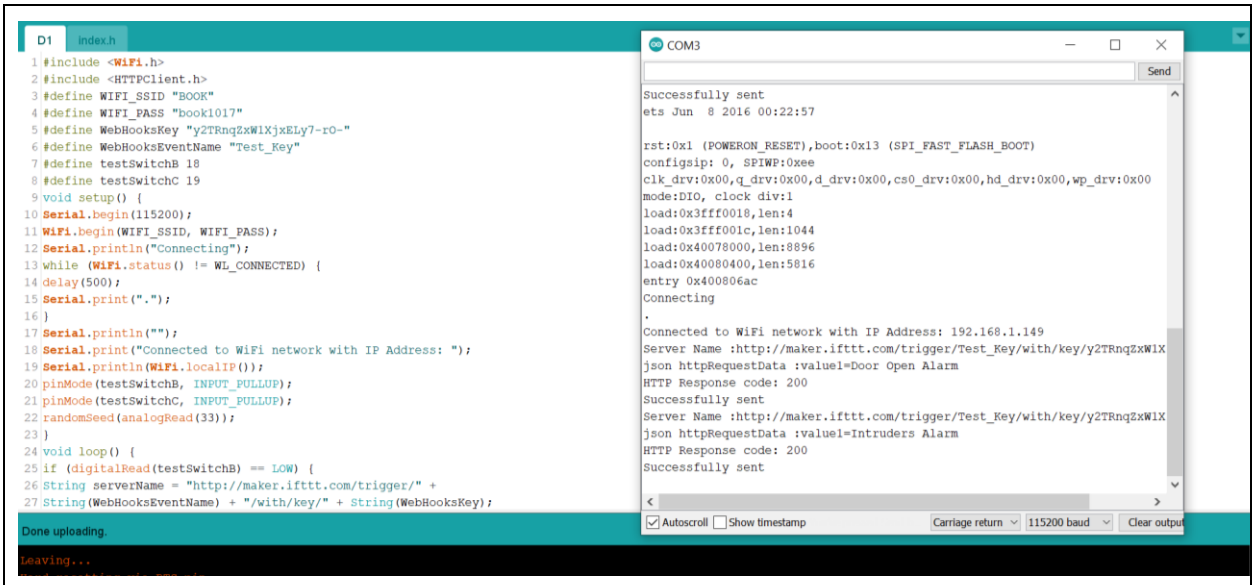
- กดปุ่ม B ที่ต่อกับ ESP32– ให้ส่งข้อความ “Door Open Alarm”
- กดปุ่ม C ที่ต่อกับ ESP32– ให้ส่งข้อความ “Intruders Alarm”

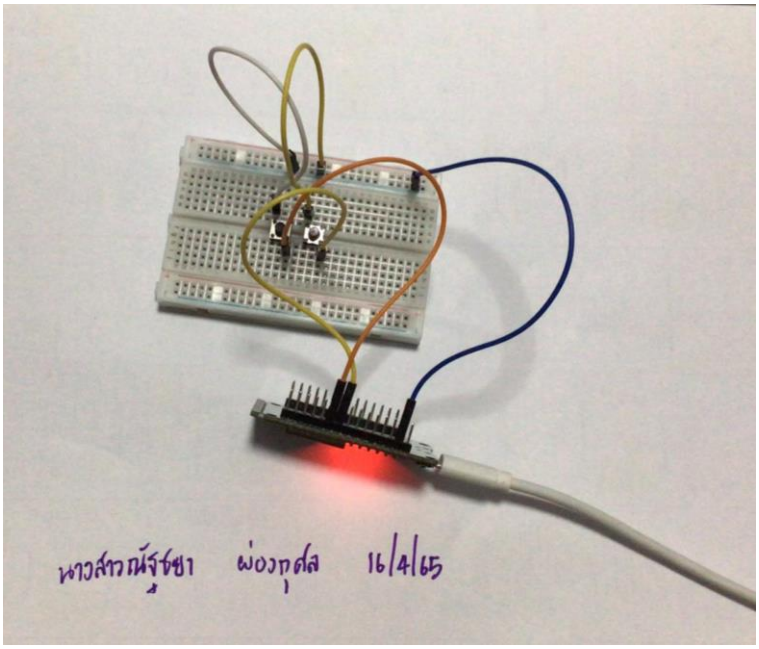


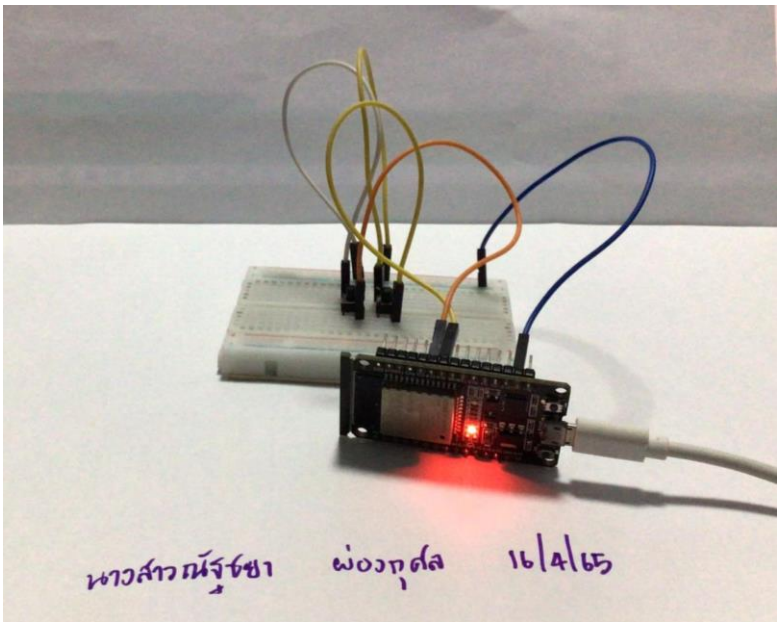

```
#include <WiFi.h>
#include <HTTPClient.h>
#define WIFI_SSID "BOOK"
#define WIFI_PASS "book1017"
#define WebHooksKey "y2TRnqZxW1XjxELy7-rO-"
#define WebHooksEventName "Test_Key"
#define testSwitchB 18
#define testSwitchC 19
void setup() {
Serial.begin(115200);
WiFi.begin(WIFI_SSID, WIFI_PASS);
Serial.println("Connecting");
while (WiFi.status() != WL_CONNECTED) {
delay(500);
Serial.print(".");
}
Serial.println("");
Serial.print("Connected to WiFi network with IP Address: ");
Serial.println(WiFi.localIP());
```

```
pinMode(testSwitchB, INPUT_PULLUP);
pinMode(testSwitchC, INPUT_PULLUP);
randomSeed(analogRead(33));
}
void loop() {
if (digitalRead(testSwitchB) == LOW) {
String serverName = "http://maker.ifttt.com/trigger/" +
String(WebHooksEventName) + "/with/key/" + String(WebHooksKey);
String httpRequestData = "value1=" + String("Door Open Alarm");
Serial.println("Server Name :" + serverName);
Serial.println("json httpRequestData :" + httpRequestData);
if (WiFi.status() == WL_CONNECTED) {
HTTPClient http;
http.begin(serverName);
http.addHeader("Content-Type", "application/x-www-form-urlencoded");
int httpResponseCode = http.POST(httpRequestData);
Serial.print("HTTP Response code: ");
Serial.println(httpResponseCode);
http.end();
if (httpResponseCode == 200)
Serial.println("Successfully sent");
else
Serial.println("Failed!");
}
else {
Serial.println("WiFi Disconnected");
}
}
```

```
if (digitalRead(testSwitchC) == LOW) {
String serverName = "http://maker.ifttt.com/trigger/" +
String(WebHooksEventName) + "/with/key/" + String(WebHooksKey);
String httpRequestData = "value1=" + String("Intruders Alarm");
Serial.println("Server Name :" + serverName);
Serial.println("json httpRequestData :" + httpRequestData);
if (WiFi.status() == WL_CONNECTED) {
HTTPClient http;
http.begin(serverName);
http.addHeader("Content-Type", "application/x-www-form-urlencoded");
int httpResponseCode = http.POST(httpRequestData);
Serial.print("HTTP Response code: ");
Serial.println(httpResponseCode);
http.end();
if (httpResponseCode == 200)
Serial.println("Successfully sent");
else
Serial.println("Failed!");
}
else {
Serial.println("WiFi Disconnected");
}
} }
```


D1
index.h
#include <WiFi.h>
#include <HTTPClient.h>
#define WIFI_SSID "BOOK"
#define WIFI_PASS "book1017"
#define WebHooksKey "y2TRnqZxW1XjxELy7-rO-"
#define WebHooksEventName "Test_Key"
#define testSwitchB 18
#define testSwitchC 19
void setup() {
Serial.begin(115200);
WiFi.begin(WIFI_SSID, WIFI_PASS);
Serial.println("Connecting");
while (WiFi.status() != WL_CONNECTED) {
delay(500);
Serial.print(".");
}
Serial.println("");
Serial.print("Connected to WiFi network with IP Address: ");
Serial.println(WiFi.localIP());
pinMode(testSwitchB, INPUT_PULLUP);
pinMode(testSwitchC, INPUT_PULLUP);
randomSeed(analogRead(33));
}
void loop() {
if (digitalRead(testSwitchB) == LOW) {
String serverName = "http://maker.ifttt.com/trigger/" +
String(WebHooksEventName) + "/with/key/" + String(WebHooksKey);
Done uploading.
Leaving...
COM3
Send
Successfully sent
ets Jun 8 2016 00:22:57
rst:0x1 (POWERON_RESET),boot:0x13 (SPI_FAST_FLASH_BOOT)
configsip: 0, SPIWP:0xee
clk_drv:0x00,q_drv:0x00,d_drv:0x00,cs0_drv:0x00,hd_drv:0x00,wp_drv:0x00
mode:DIO, clock div:1
load:0x3fff0018,len:4
load:0x3fff001c,len:1044
load:0x40078000,len:8896
load:0x40080400,len:5816
entry 0x400806ac
Connecting
.
Connected to WiFi network with IP Address: 192.168.1.149
Server Name :http://maker.ifttt.com/trigger/Test_Key/with/key/y2TRnqZxW1X
json httpRequestData :value1=Door Open Alarm
HTTP Response code: 200
Successfully sent
Server Name :http://maker.ifttt.com/trigger/Test_Key/with/key/y2TRnqZxW1X
json httpRequestData :value1=Intruders Alarm
HTTP Response code: 200
Successfully sent
Autoscroll
Show timestamp
Carriage return
115200 baud
Clear output

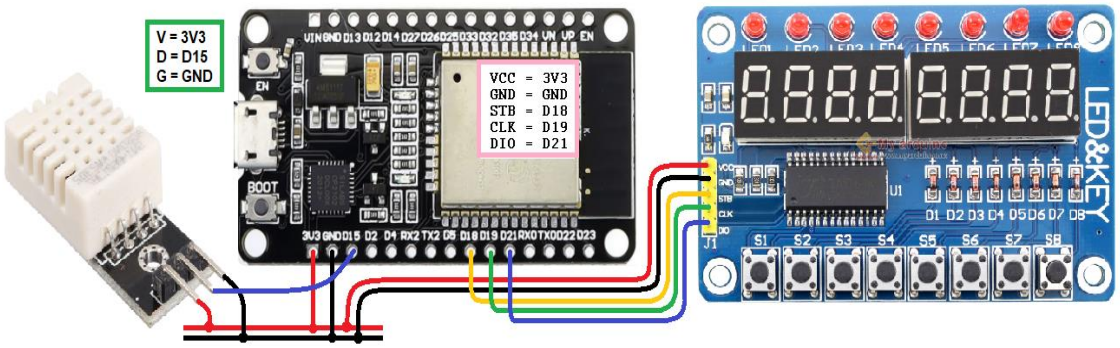

นางสาวณัฐชยา ผ่องบุตร 16/4/65


นางสาวณัฐชยา ผ่องกุศล 16/4/65

AIS VoLTE 20:52 น. 58%
LINE Notify
station_test: TEMPP > 25 and TEMPP = 32.099998 C
17:51 น.
station_test: TEMPP > 25 and TEMPP = 32.099998 C
17:51 น.
วันนี้
เชื่อมต่อกับ IFTTT แล้ว โปรดเชิญบัญชีนี้เข้ากลุ่ม LINE ที่กำหนดให้ส่งข้อความแจ้งเตือน
20:04 น.
อ่านแล้ว 20:31 น.
F
IFTTT: Value 1: 123 Value 2: Value 3:
20:50 น.
IFTTT: Value 1: Overheat Alarm Value 2: Value 3:
20:50 น.
IFTTT: Value 1: Door Open Alarm Value 2: Value 3:
20:53 น.
IFTTT: Value 1: Intruders Alarm Value 2: Value 3:
20:53 น.

Quiz_304 – Data Logger and Social Alarm

- ส่งข้อมูลอุณหภูมิไปยัง Google Spreadsheet (ทำแล้วในข้อ QB4)
- หากอุณหภูมิที่อ่านได้เกิน 28'C ให้แจ้งเตือนผ่าน ____ และบอกด้วยว่าอุณหภูมิเท่าใด
  ☐ SMS, ☐ FB Page, ☐ FB Massager, ☐ Twitter, ☑ LINE
- แสดงอุณหภูมิที่ 7_Segment Display TM1638 Board



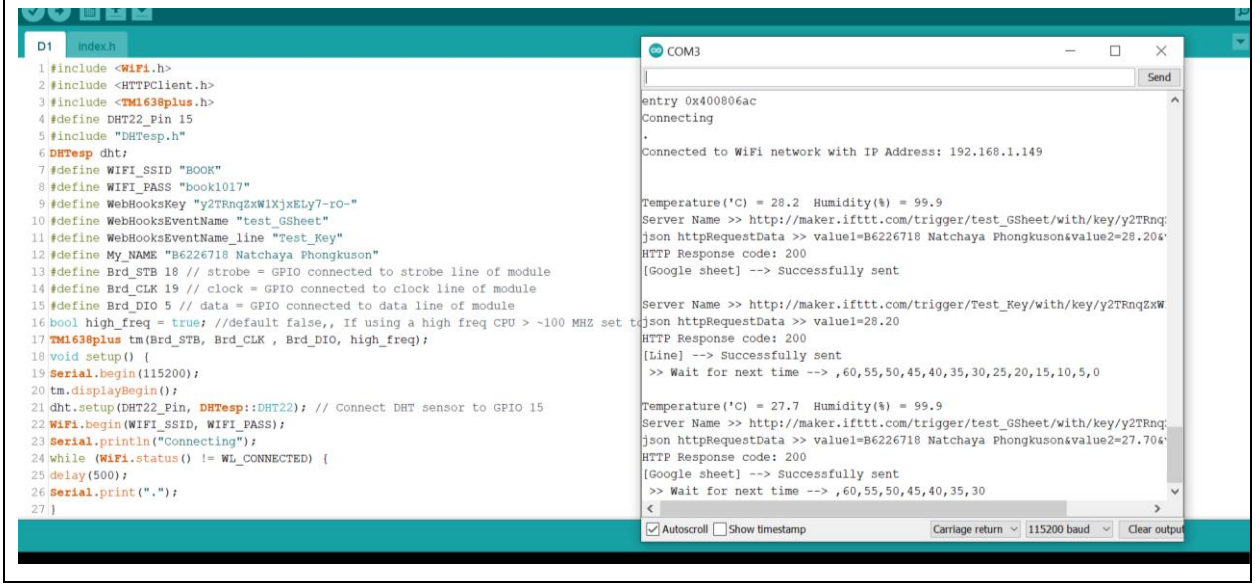

```
#include <WiFi.h>
#include <HTTPClient.h>
#include <TM1638plus.h>
#define DHT22_Pin 15
#include "DHTesp.h"
DHTesp dht;
#define WIFI_SSID "BOOK"
#define WIFI_PASS "book1017"
#define WebHooksKey "y2TRnqZxW1XjxELy7-rO-"
#define WebHooksEventName "test_GSheet"
#define WebHooksEventName_line "Test_Key"
#define My_NAME "B6226718 Natchaya Phongkuson"
#define Brd_STB 18 // strobe = GPIO connected to strobe line of module
#define Brd_CLK 19 // clock = GPIO connected to clock line of module
#define Brd_DIO 5 // data = GPIO connected to data line of module
bool high_freq = true; //default false,, If using a high freq CPU > ~100 MHZ set to true.
TM1638plus tm(Brd_STB, Brd_CLK , Brd_DIO, high_freq);
```

```
void setup() {
Serial.begin(115200);
tm.displayBegin();
dht.setup(DHT22_Pin, DHTesp::DHT22); // Connect DHT sensor to GPIO 15
WiFi.begin(WIFI_SSID, WIFI_PASS);
Serial.println("Connecting");
while (WiFi.status() != WL_CONNECTED) {
delay(500);
Serial.print(".");
}
Serial.println("");
Serial.print("Connected to WiFi network with IP Address: ");
Serial.println(WiFi.localIP());
}
void loop() {
float humidity = dht.getHumidity();
float temperature = dht.getTemperature();

Serial.println();
Serial.print("\nTemperature('C) = ");
Serial.print(temperature, 1);
Serial.print("\tHumidity(%) = ");
Serial.print(humidity, 1);
String serverName = "http://maker.ifttt.com/trigger/" +
String(WebHooksEventName) + "/with/key/" + String(WebHooksKey);
String httpRequestData = "value1=" + String(My_NAME) + "&value2=" +
String(temperature) + "&value3=" +
String(humidity);
```

```
Serial.println();
Serial.println("Server Name >> " + serverName);
Serial.println("json httpRequestData >> " + httpRequestData);
if (WiFi.status() == WL_CONNECTED) {
HTTPClient http;
http.begin(serverName);
http.addHeader("Content-Type", "application/x-www-form-urlencoded");
int httpResponseCode = http.POST(httpRequestData);
Serial.print("HTTP Response code: ");
Serial.println(httpResponseCode);
http.end();
if (httpResponseCode == 200)
Serial.println("[Google sheet] --> Successfully sent");
else
Serial.println("[Google sheet] --> Failed!");
}
else {
Serial.println("WiFi Disconnected");
}
/// if temp > 28 C send notifications >> line
if (temperature > 28) {
String serverName = "http://maker.ifttt.com/trigger/" +
String(WebHooksEventName_line) + "/with/key/" + String(WebHooksKey);
String httpRequestData = "value1=" + String(temperature);
Serial.println();
Serial.println("Server Name >> " + serverName);
Serial.println("json httpRequestData >> " + httpRequestData);
if (WiFi.status() == WL_CONNECTED) {
```

```
HTTPClient http;
http.begin(serverName);
http.addHeader("Content-Type", "application/x-www-form-urlencoded");
int httpResponseCode = http.POST(httpRequestData);
Serial.print("HTTP Response code: ");
Serial.println(httpResponseCode);
http.end();
if (httpResponseCode == 200)
Serial.println("[Line] --> Successfully sent");
else
Serial.println("[Line] --> Failed!");
}
else {
Serial.println("WiFi Disconnected");
}
}
/*Display */
int t = int(temperature * 100);
int Tempp2 = (int)temperature/10; int Tempp1 = (int)temperature%10; int Tempp0 = (int)(temperature*10)%10;
int Humi2 = (int)humidity/10; int Humi1 = (int)humidity%10; int Humi0 = (int)(humidity*10)%10;
tm.displayHex(0, Tempp2);
tm.displayASCIIwDot(1, Tempp1 + '0'); // turn on dot
tm.displayHex(2, Tempp0);
tm.display7Seg(3, B01011000); // Code=tgfedcba
tm.displayHex(4, Humi2);
tm.displayASCIIwDot(5, Humi1 + '0'); // turn on dot
tm.displayHex(6, Humi0);
```

```
tm.display7Seg(7, B01110100); // Code=tgfedcba
delay(2000);

int WaitTime = 60;
Serial.print(" >> Wait for next time --> ");
for (int i = WaitTime; i >= 0; i -= 5) {
Serial.print(",");
Serial.print(i);
delay(5000);
}
}
```

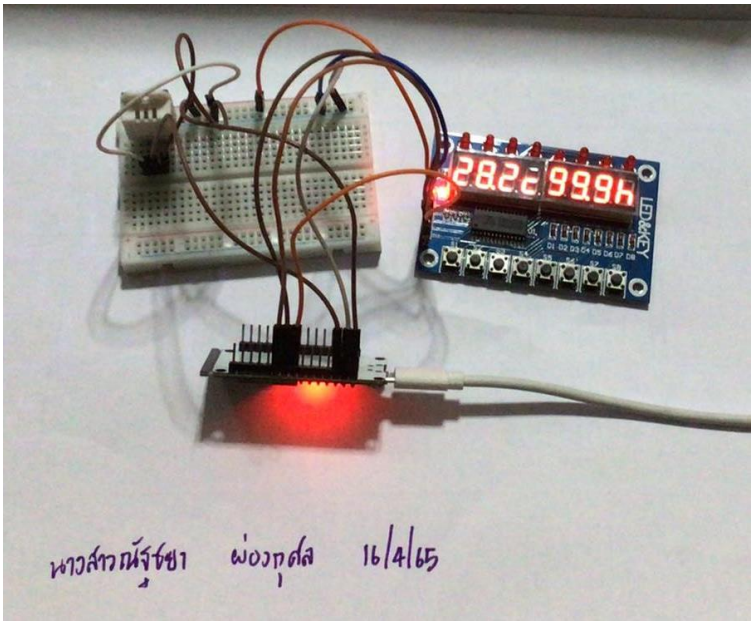


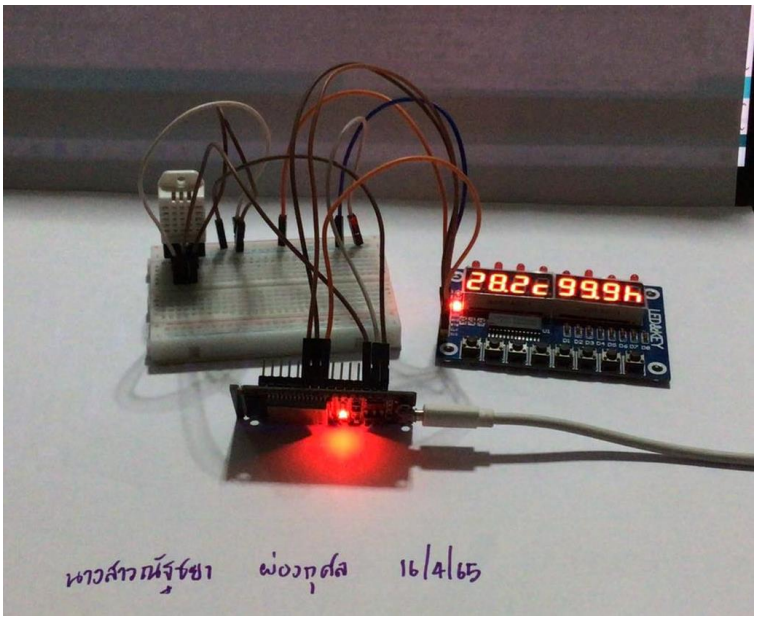
IFTTT_Maker_Webhooks_Events

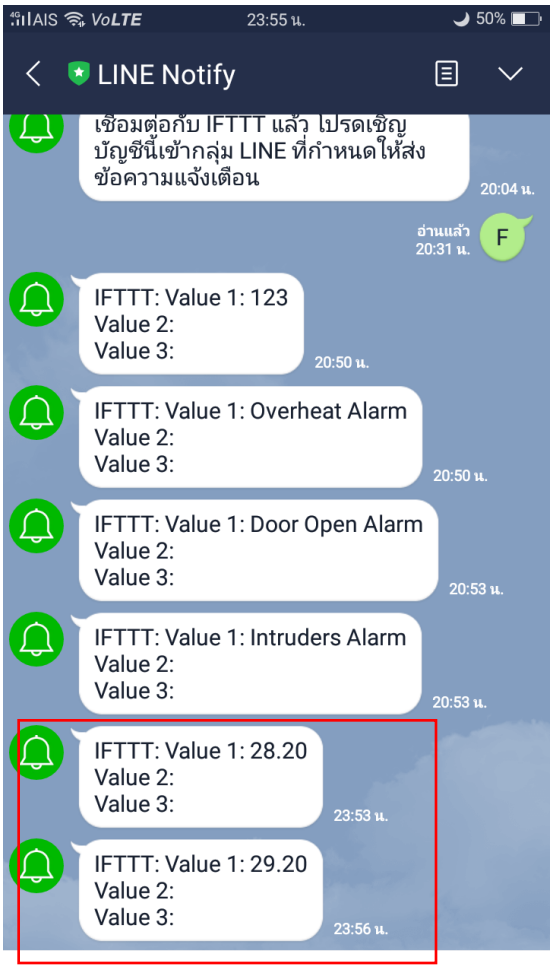
ไฟล์ แก้ไข ดู แทรก รูปแบบ ข้อมูล เครื่องมือ ส่วนขยาย ความช่วยเหลือ แก้ไขล่าสุดเมื่อครู่ที่ผ่านมาโดย ณัฐชยา ผ่องกุศล

A1: April 16, 2022 at 11:18PM

	A	B	C	D	E
1	April 16, 2022 at	test_GSheet	1	2	3
2	April 16, 2022 at	test_GSheet	B6226718 Natch	25.4	99.9
3	April 16, 2022 at	test_GSheet	B6226718 Natch	24.8	99.9
4	April 16, 2022 at	test_GSheet	B6226718 Natch	23.9	99.9
5	April 16, 2022 at	test_GSheet	B6226718 Natch	23.9	99.9
6	April 16, 2022 at	test_GSheet	B6226718 Natch	25.5	99.9
7	April 16, 2022 at	test_GSheet	B6226718 Natch	25.6	99.9
8	April 16, 2022 at	test_GSheet	B6226718 Natch	26.1	99.9
9	April 16, 2022 at	test_GSheet	B6226718 Natch	28	99.9
10	April 16, 2022 at	test_GSheet	B6226718 Natch	27	99.9
11	April 16, 2022 at	test_GSheet	B6226718 Natch	27.1	99.9
12	April 16, 2022 at	test_GSheet	B6226718 Natch	28.2	99.9
13	April 16, 2022 at	test_GSheet	B6226718 Natch	27.7	99.9
14	April 16, 2022 at	test_GSheet	B6226718 Natch	29.2	99.9
15	April 16, 2022 at	test_GSheet	B6226718 Natch	27.3	99.9
16	April 16, 2022 at	test_GSheet	B6226718 Natch	26.7	99.9
17					




นางสาวณัฐชยา ผ่องกุศล 16/4/65


AIS VoLTE 23:55 น. 50%
LINE Notify
เชื่อมต่อกับ IFTTT แล้ว โปรดเชิญบัญชีนี้เข้ากลุ่ม LINE ที่กำหนดให้ส่งข้อความแจ้งเตือน
20:04 น.
อ่านแล้ว 20:31 น.
F
IFTTT: Value 1: 123
Value 2:
Value 3:
20:50 น.
IFTTT: Value 1: Overheat Alarm
Value 2:
Value 3:
20:50 น.
IFTTT: Value 1: Door Open Alarm
Value 2:
Value 3:
20:53 น.
IFTTT: Value 1: Intruders Alarm
Value 2:
Value 3:
20:53 น.
IFTTT: Value 1: 28.20
Value 2:
Value 3:
23:53 น.
IFTTT: Value 1: 29.20
Value 2:
Value 3:
23:56 น.