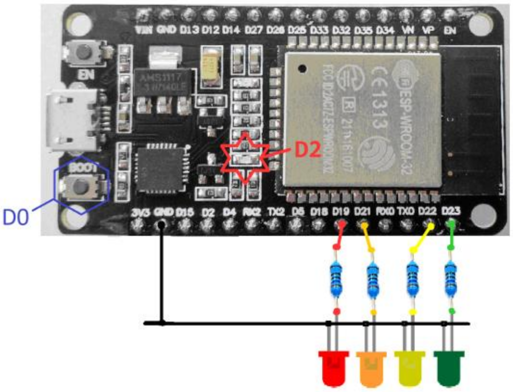
แนวทางการใช้งานอินเทอร์เน็ตของสรรพสิ่งในระบบการผลิต

IoT Approaches to Manufacturing System

ชื่อ-สกุล : นายปราชญา ธนพิบูลผล **รหัสนักศึกษา : B6323059**

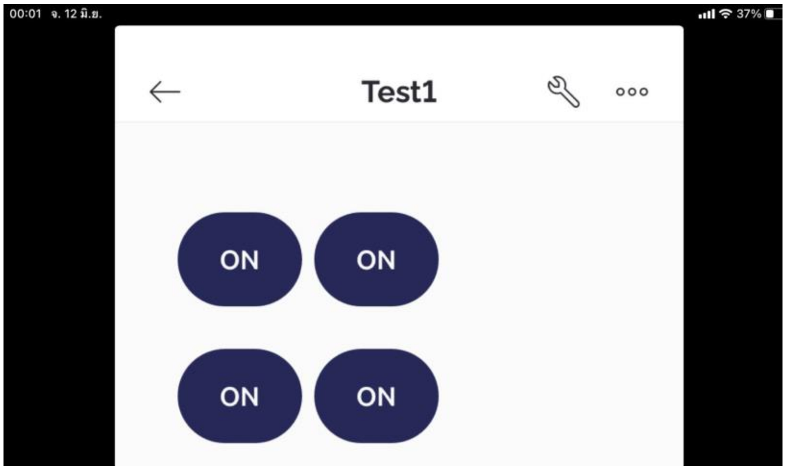
3/3. คำถามท้ายบทเพื่อทดสอบความเข้าใจ

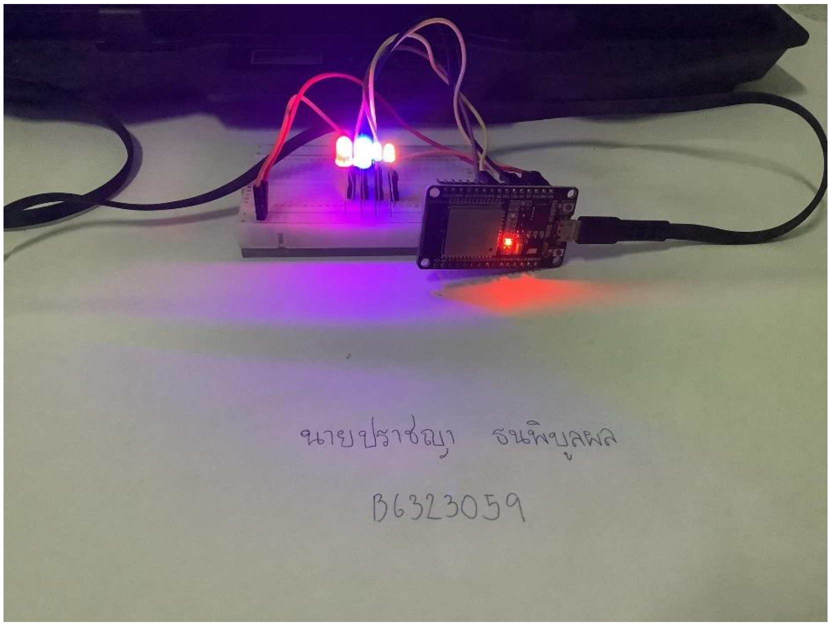
Quiz_301 – 4 External LED Control


VIN GND D13 D12 D14 D27 D26 D25 D33 D32 D35 D34 VN VP EN
D2
D0
BOOT
EN
3V3 GND D15 D2 D4 RX2 TX2 D5 D18 D19 D21 RX0 TX0 D22 D23

```
#define BLYNK_PRINT Serial

#define BLYNK_TEMPLATE_ID           "TMPL6vwqBIOjf"

#define BLYNK_TEMPLATE_NAME         "Test"

#define BLYNK_AUTH_TOKEN            "oX3Ov2I9WArgv_lURrUoFKI11QUS3B-B"




#include <WiFi.h>

#include <WiFiClient.h>

#include <BlynkSimpleEsp32.h>



char ssid[] = "It's bad day not a bad life";

char pass[] = "0641453596";
```

```
void setup()

{

  // Debug console

  Serial.begin(9600);



  Blynk.begin(BLYNK_AUTH_TOKEN, ssid, pass);

}



void loop()

{

  Blynk.run();

}
```

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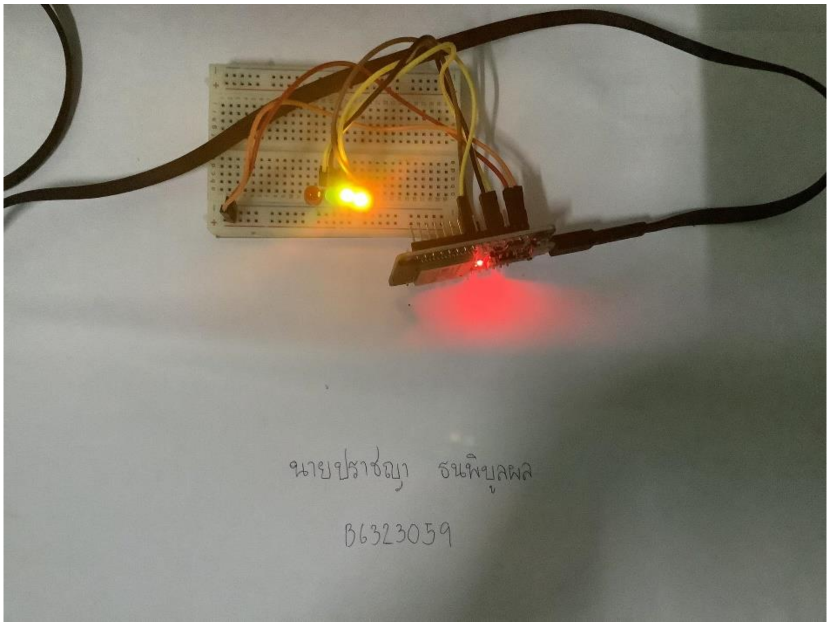
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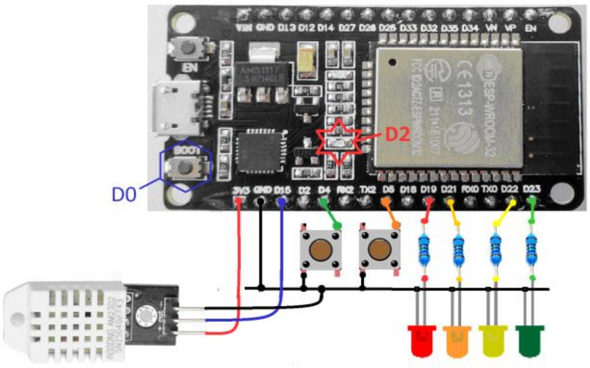
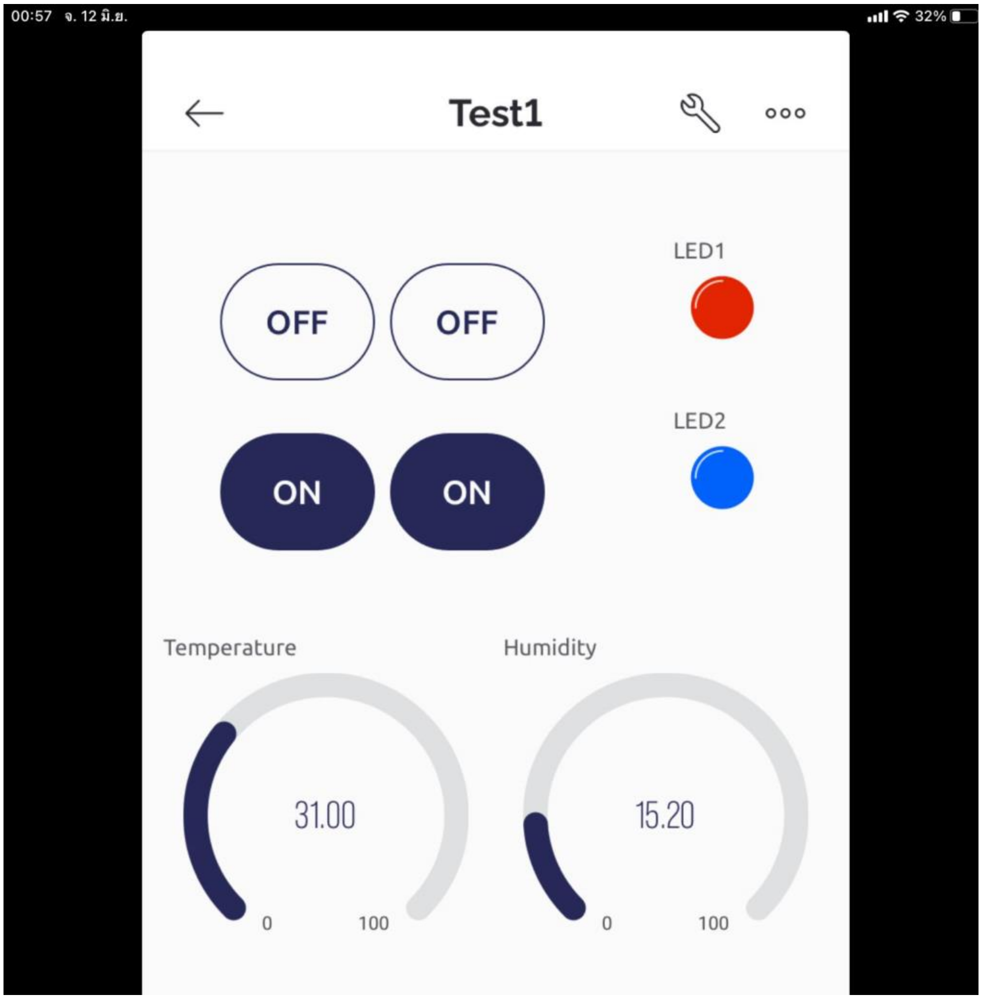
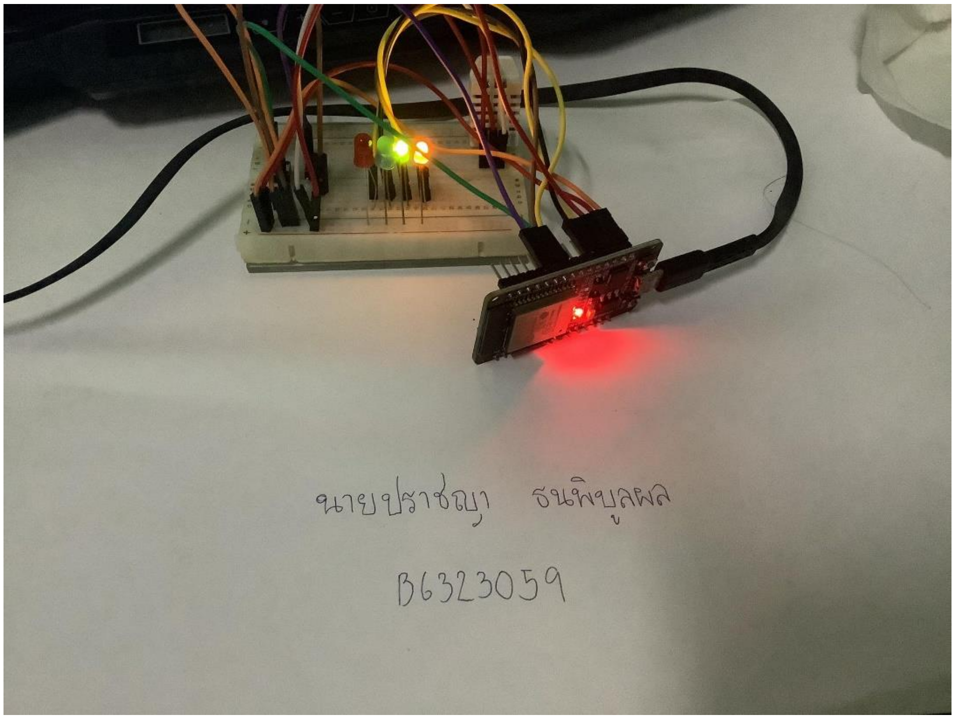
Quiz_302 – DHT22 + 4 LED + 2 Switch


VIN GND D13 D12 D14 D27 D26 D25 D33 D32 D35 D34 VN VP EN
EN
BOOT
D2
D0
3V3 GND D15 D2 D4 RX2 TX2 D5 D18 D19 D21 RX0 TX0 D22 D23

```
#define BLYNK_PRINT Serial
#define BLYNK_TEMPLATE_ID           "TMPL6vwqBIOjf"
#define BLYNK_TEMPLATE_NAME         "Test"
#define BLYNK_AUTH_TOKEN            "oX3Ov2I9WArgv_lURrUoFKI11QUS3B-B"
#include <WiFi.h>
#include <WiFiClient.h>
#include <BlynkSimpleEsp32.h>
#include "DHTesp.h"
#define DHT22_Pin 15
#define sw1 18
#define sw2 19
char ssid[] = "It's bad day not a bad life";
char pass[] = "0641453596";
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(BLYNK_AUTH_TOKEN, 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}
```


00:57 จ. 12 มิ.ย.
32%
Test1
LED1
OFF
OFF
LED2
ON
ON
Temperature
31.00
0
100
Humidity
15.20
0
100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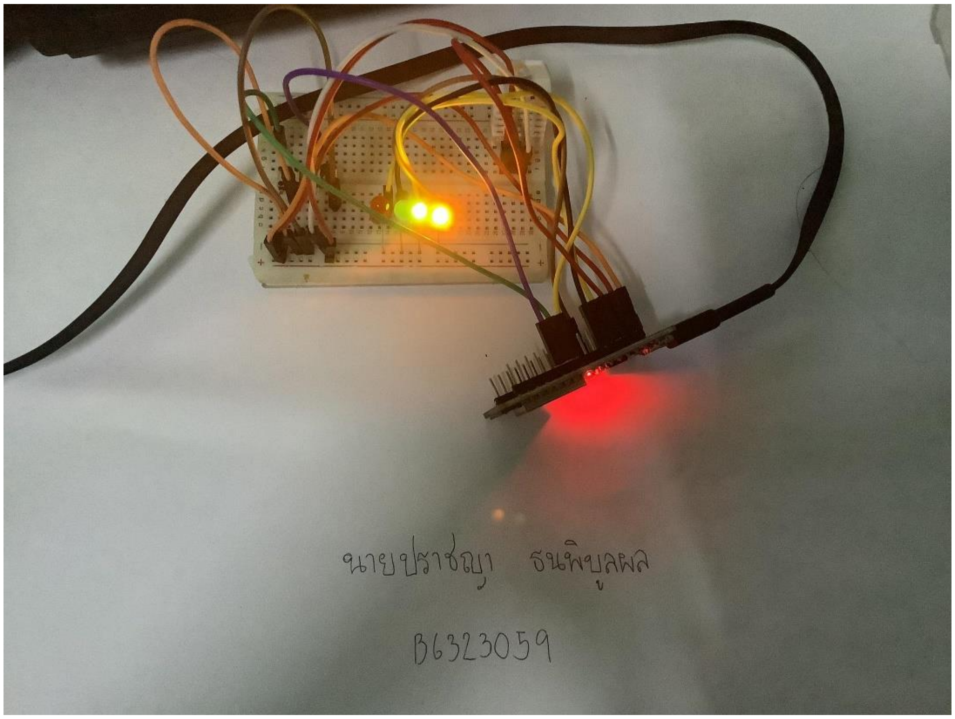
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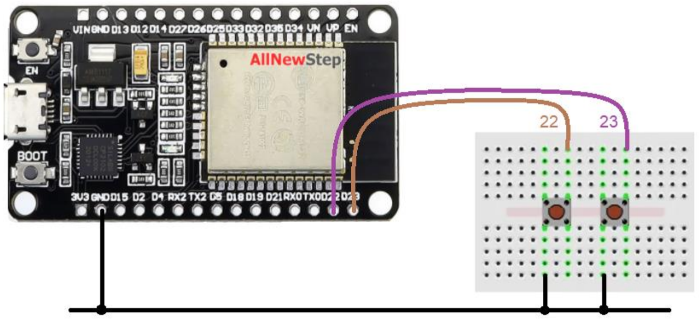
Quiz_303 – Social Alert

ทดสอบการส่งข้อมูลไป □ LINE สำหรับสวิตซ์กด 3 ตัว

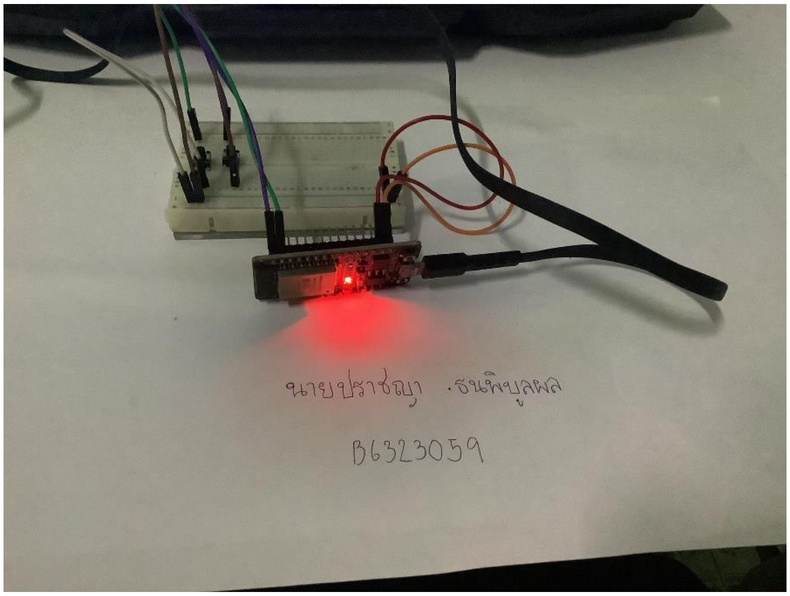
- กดปุ่ม B ที่ต่อกับ ESP32– ให้ส่งข้อความ “Door Open Alarm”
- กดปุ่ม C ที่ต่อกับ ESP32– ให้ส่งข้อความ “Intruders Alarm”

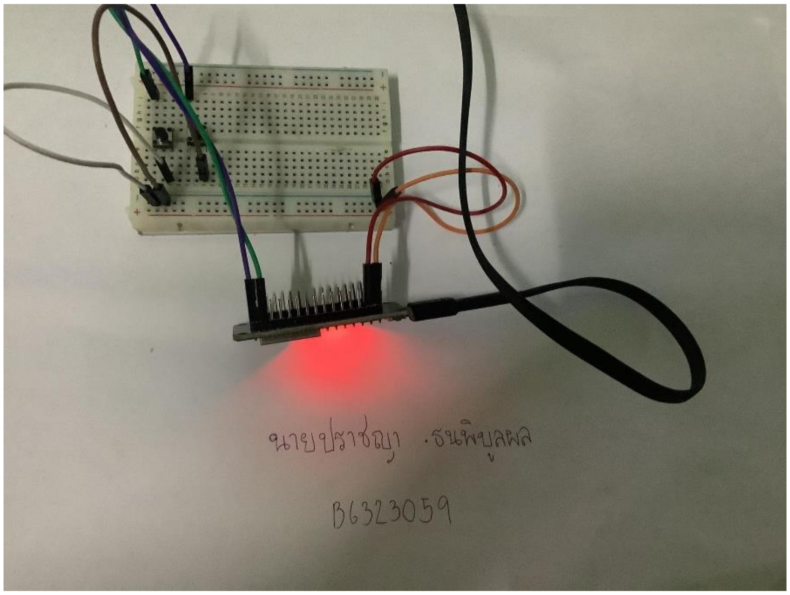


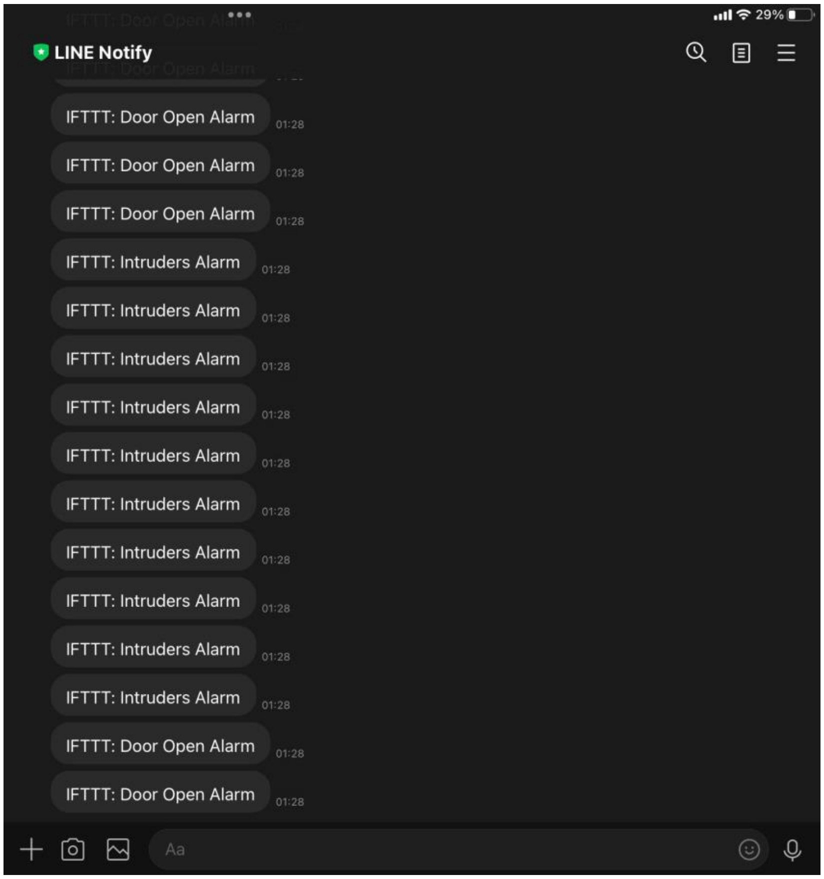
```
#include <WiFi.h>
#include <HTTPClient.h>
#define WIFI_SSID "It's bad day not a bad life"
#define WIFI_PASS "0641453596"
#define WebHooksKey "jSJmaCRRDH7ibUiNBL7rTf2ZQiPdCSaq7Xkckg0C9KJ"
#define WebHooksEventName "Social Alert"
#define testSwitchB 22
#define testSwitchC 23
void setup() {
Serial.begin(115200);
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");

}

} }
```







```
IFTTT: Door Open Alarm
IFTTT: Door Open Alarm
IFTTT: Door Open Alarm 01:28
IFTTT: Door Open Alarm 01:28
IFTTT: Door Open Alarm 01:28
IFTTT: Intruders Alarm 01:28
IFTTT: Intruders Alarm 01:28
IFTTT: Intruders Alarm 01:28
IFTTT: Intruders Alarm 01:28
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IFTTT: Intruders Alarm 01:28
IFTTT: Intruders Alarm 01:28
IFTTT: Intruders Alarm 01:28
IFTTT: Door Open Alarm 01:28
IFTTT: Door Open Alarm 01:28
```
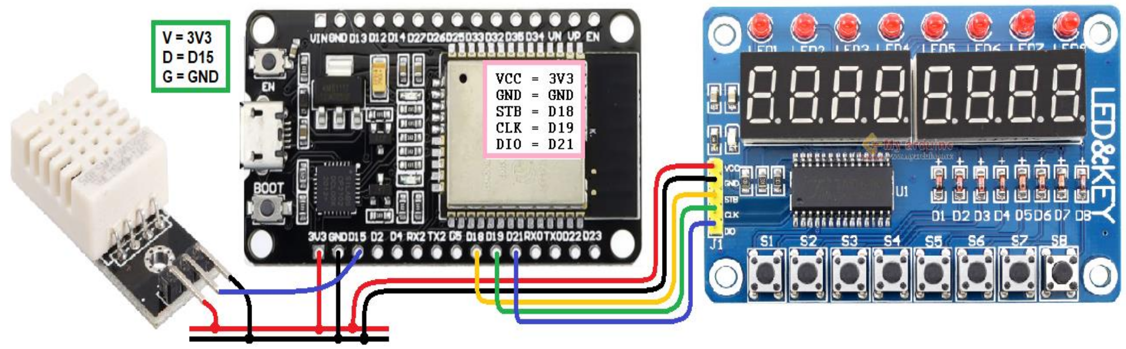

Quiz_304 – Data Logger and Social Alarm

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



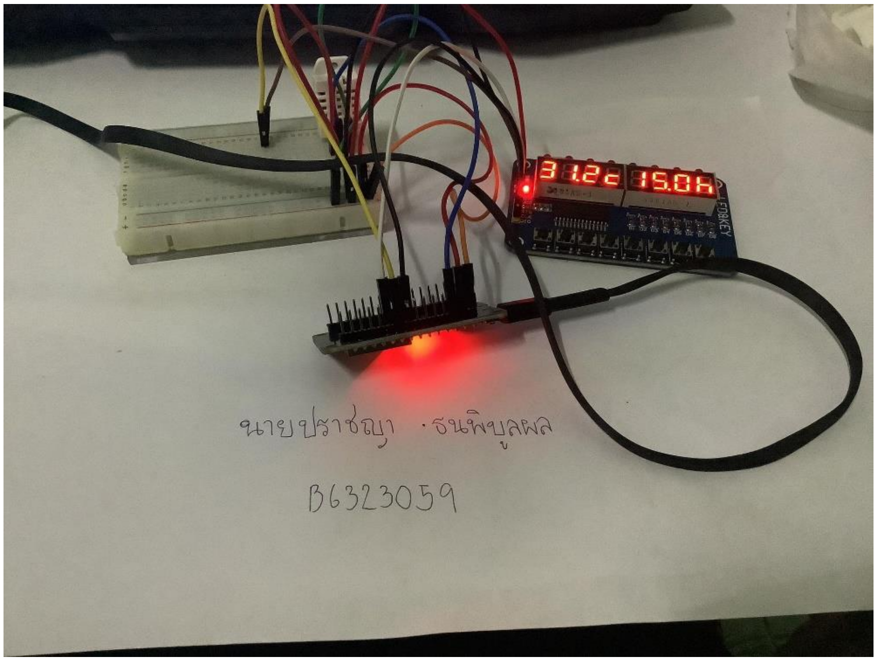
```
#include <WiFi.h>
#include <HTTPClient.h>
#include <TM1638plus.h>
#define DHT22_Pin 15
#include "DHTesp.h"
DHTesp dht;
#define WIFI_SSID "It's bad day not a bad life"
#define WIFI_PASS "0641453596"
#define WebHooksKey "jSJmaCRRDH7ibUiNBL7rTf2ZQiPdCSaq7Xkckg0C9KJ"
#define WebHooksEventName "Sheet"
#define WebHooksEventName_line "Data Logger and Social Alarm"
#define My_NAME "B6323059 Pratchaya Tanapiboonphol"
#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);
}
}
```


31.2c 15.0h
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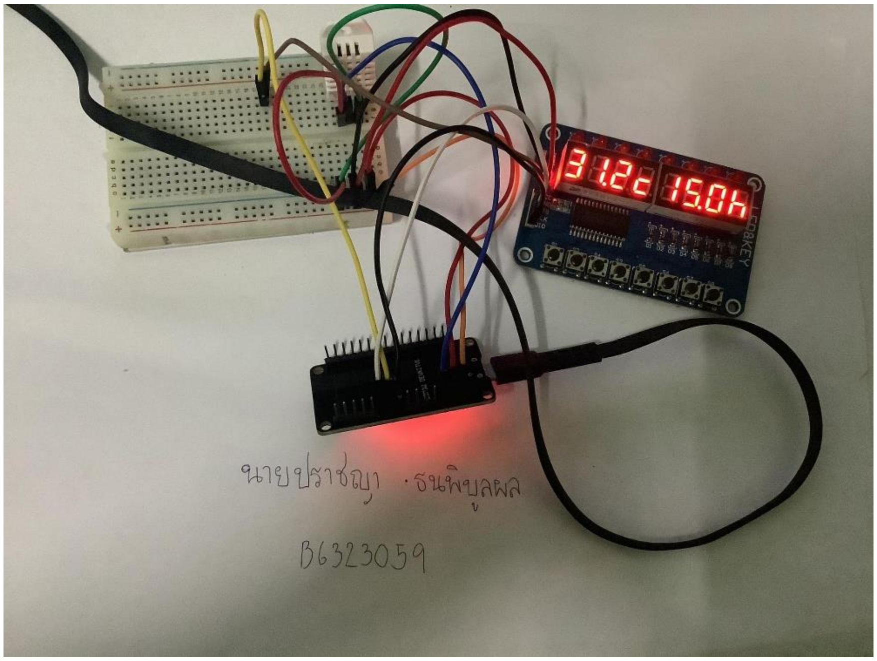
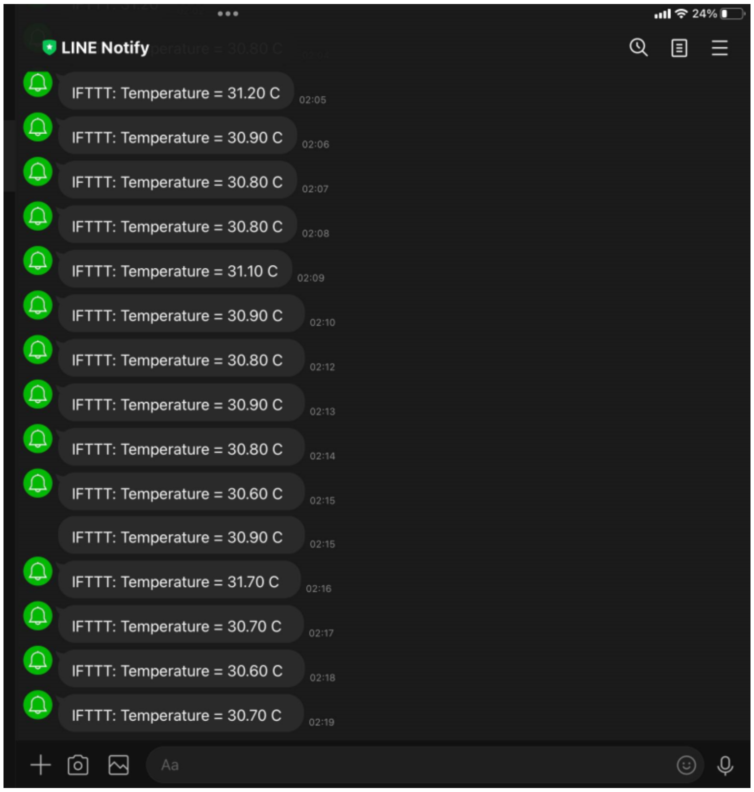

31.2c 15.0h
นายปราชญา ธนพิบูลผล
B6323059



IFTTT: Temperature = 31.20 C 02:05

IFTTT: Temperature = 30.90 C 02:06

IFTTT: Temperature = 30.80 C 02:07

IFTTT: Temperature = 30.80 C 02:08

IFTTT: Temperature = 31.10 C 02:09

IFTTT: Temperature = 30.90 C 02:10

IFTTT: Temperature = 30.80 C 02:12

IFTTT: Temperature = 30.90 C 02:13

IFTTT: Temperature = 30.80 C 02:14

IFTTT: Temperature = 30.60 C 02:15

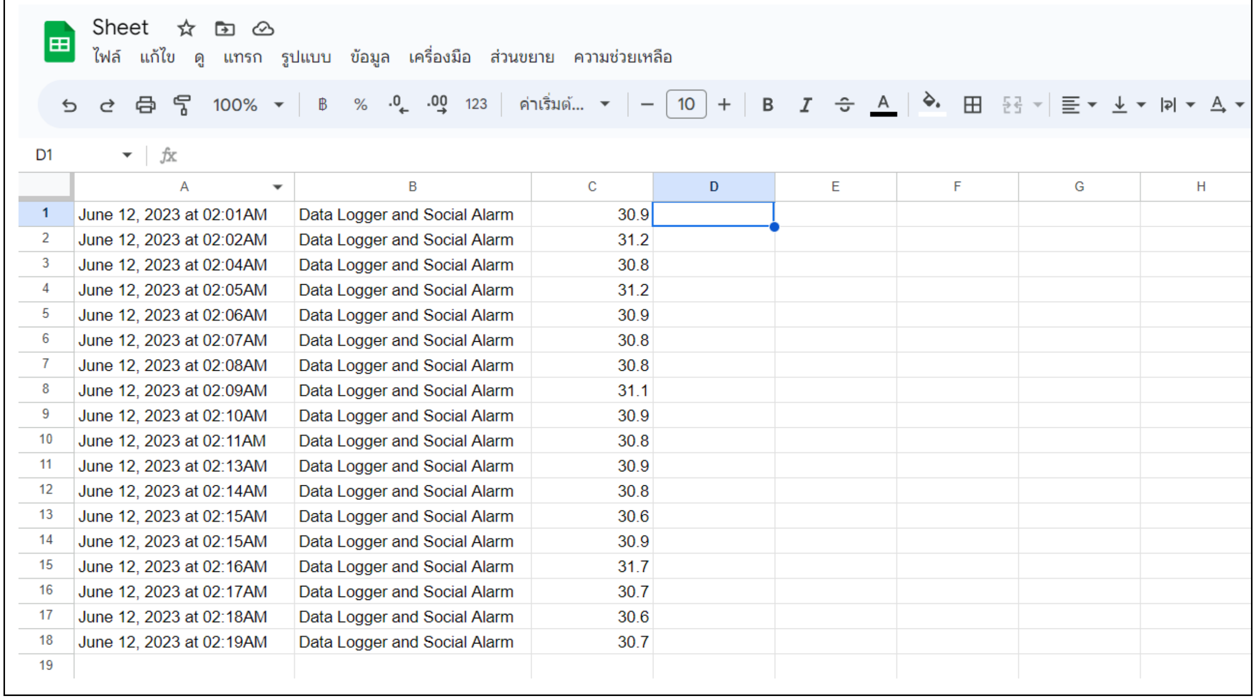
IFTTT: Temperature = 30.90 C 02:15

IFTTT: Temperature = 31.70 C 02:16

IFTTT: Temperature = 30.70 C 02:17

IFTTT: Temperature = 30.60 C 02:18

IFTTT: Temperature = 30.70 C 02:19


Sheet
ไฟล์ แก้ไข ดู แทรก รูปแบบ ข้อมูล เครื่องมือ ส่วนขยาย ความช่วยเหลือ
100%
฿ % .0 .00 123
ค่าเริ่มต์...
10
B I
D1
fx

	A	B	C	D	E	F	G	H
1	June 12, 2023 at 02:01AM	Data Logger and Social Alarm	30.9					
2	June 12, 2023 at 02:02AM	Data Logger and Social Alarm	31.2					
3	June 12, 2023 at 02:04AM	Data Logger and Social Alarm	30.8					
4	June 12, 2023 at 02:05AM	Data Logger and Social Alarm	31.2					
5	June 12, 2023 at 02:06AM	Data Logger and Social Alarm	30.9					
6	June 12, 2023 at 02:07AM	Data Logger and Social Alarm	30.8					
7	June 12, 2023 at 02:08AM	Data Logger and Social Alarm	30.8					
8	June 12, 2023 at 02:09AM	Data Logger and Social Alarm	31.1					
9	June 12, 2023 at 02:10AM	Data Logger and Social Alarm	30.9					
10	June 12, 2023 at 02:11AM	Data Logger and Social Alarm	30.8					
11	June 12, 2023 at 02:13AM	Data Logger and Social Alarm	30.9					
12	June 12, 2023 at 02:14AM	Data Logger and Social Alarm	30.8					
13	June 12, 2023 at 02:15AM	Data Logger and Social Alarm	30.6					
14	June 12, 2023 at 02:15AM	Data Logger and Social Alarm	30.9					
15	June 12, 2023 at 02:16AM	Data Logger and Social Alarm	31.7					
16	June 12, 2023 at 02:17AM	Data Logger and Social Alarm	30.7					
17	June 12, 2023 at 02:18AM	Data Logger and Social Alarm	30.6					
18	June 12, 2023 at 02:19AM	Data Logger and Social Alarm	30.7					
19								