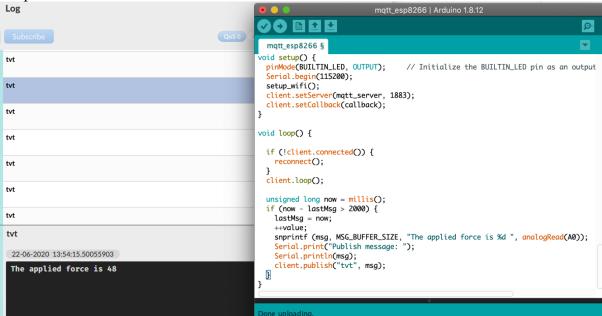Week 3 Sunday – Taibah Valley – Task 5 - Analog sensor states reading on MQTT broker
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Code

```cpp
#include <ESP8266WiFi.h>
#include <PubSubClient.h>
// Update these with values suitable for your network.
const char* ssid = "HDKF 4G";
const char* password = "**********";
const char* mqtt_server = "mqtt.eclipse.org";
WiFiClient espClient;
PubSubClient client(espClient);
unsigned long lastMsg = 0;
#define MSG_BUFFER_SIZE        (50)
char msg[MSG_BUFFER_SIZE];
int value = 0;
void setup_wifi() {
  delay(10);
  // We start by connecting to a WiFi network
  Serial.println();
  Serial.print("Connecting to ");
  Serial.println(ssid);

  WiFi.mode(WIFI_STA);
  WiFi.begin(ssid, password);
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  randomSeed(micros());
  Serial.println("");
  Serial.println("WiFi connected");
  Serial.println("IP address: ");
  Serial.println(WiFi.localIP());
}
void callback(char* topic, byte* payload, unsigned int length) {
  Serial.print("Message arrived [");
  Serial.print(topic);
  Serial.print("] ");
  for (int i = 0; i < length; i++) {
    Serial.print((char)payload[i]);
  }
  Serial.println();

  // Switch on the LED if an 1 was received as first character
  if ((char)payload[0] == '1') {
    digitalWrite(BUILTIN_LED, LOW);   // Turn the LED on (Note that LOW is
the voltage level
    // but actually the LED is on; this is because
    // it is active low on the ESP-01)
  } else {
    digitalWrite(BUILTIN_LED, HIGH);  // Turn the LED off by making the
voltage HIGH
  }

}

void reconnect() {
```

```cpp
  // Loop until we're reconnected
  while (!client.connected()) {
    Serial.print("Attempting MQTT connection...");
    // Create a random client ID
    String clientId = "ESP8266Client-";
    clientId += String(random(0xffff), HEX);
    // Attempt to connect
    if (client.connect(clientId.c_str())) {
      Serial.println("connected");
      // Once connected, publish an announcement...
      client.publish("outTopic", "hello world");
      // ... and resubscribe
      client.subscribe("inTopic");
    } else {
      Serial.print("failed, rc=");
      Serial.print(client.state());
      Serial.println(" try again in 5 seconds");
      // Wait 5 seconds before retrying
      delay(5000);
    }
  }
}


void setup() {
  pinMode(BUILTIN_LED, OUTPUT);     // Initialize the BUILTIN_LED pin as an
output
  Serial.begin(115200);
  setup_wifi();
  client.setServer(mqtt_server, 1883);
  client.setCallback(callback);
}

void loop() {

  if (!client.connected()) {
    reconnect();
  }
  client.loop();

  unsigned long now = millis();
  if (now - lastMsg > 2000) {
    lastMsg = now;
    ++value;
    snprintf (msg, MSG_BUFFER_SIZE, "The applied force is %d ",
analogRead(A0));
    Serial.print("Publish message: ");
    Serial.println(msg);
    client.publish("tvt", msg);
  }
}
```

Output


```
void setup() {
  pinMode(BUILTIN_LED, OUTPUT);        // Initialize the BUILTIN_LED pin as an output
  Serial.begin(115200);
  setup_wifi();
  client.setServer(mqtt_server, 1883);
  client.setCallback(callback);
}

void loop() {

  if (!client.connected()) {
    reconnect();
  }
  client.loop();

  unsigned long now = millis();
  if (now - lastMsg > 2000) {
    lastMsg = now;
    ++value;
    snprintf (msg, MSG_BUFFER_SIZE, "The applied force is %d ", analogRead(A0));
    Serial.print("Publish message: ");
    Serial.println(msg);
    client.publish("tvt", msg);
  }
}
```

Log

Subscribe   QoS 0

tvt

tvt

tvt

tvt

tvt

tvt

tvt

tvt

22-06-2020 13:54:15.50055903

The applied force is 48

mqtt_esp8266 | Arduino 1.8.12

mqtt_esp8266 §

Done uploading.

Electric circuitry