

SPRINT 2

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| Date | 06 November 2022 |
| Team ID | PNT2022TMID30020 |
| Project Name | Project - Signs with Smart Connectivity for Better Road Safety |

SCRIPT:

```
#include <ESP8266WiFi.h>
#include "DHT.h"
#include <ArduinoJson.h>
#include <PubSubClient.h>

// Watson IoT connection details
#define MQTT_HOST "lvlyy2.messaging.internetofthings.ibmcloud.com" //Organization
ID.messaging.internetofthings.ibmcloud.com
//change 3xr4l4
#define MQTT_PORT 1883
#define MQTT_DEVICEID "d:lvlyy2:ESP8266:Device1" //d:Organization ID:Device
Type:Device ID
//change 3xr4l4
#define MQTT_USER "use-token-auth"
#define MQTT_TOKEN "Od?)1b3DfEl6B6ALA6" // change your auth_id :
#define MQTT_TOPIC "iot-2/evt/status/fmt/json"
#define MQTT_TOPIC_DISPLAY "iot-2/cmd/display/fmt/json"

// Add GPIO pins used to connect devices

#define DHT_PIN 2 // GPIO pin the data line of the DHT sensor is connected to

// Specify DHT11 (Blue) or DHT22 (White) sensor
#define DHTTYPE DHT11

// Add WiFi connection information
char ssid[] = "MAKE LABS INDIA"; // your network SSID (name)
char pass[] = "MaruthI7"; // your network password
float h = 0.0;
float t = 0.0;

void callback(char* topic, byte* payload, unsigned int length) {
    // handle message arrived
```

```
Serial.print("Message arrived [");  
Serial.print(topic);  
Serial.print("] : ");
```

```
payload[length] = 0; // ensure valid content is zero terminated so can treat as c-string  
Serial.println((char *)payload);  
}
```

```
void setup() {  
  // Start serial console  
  Serial.begin(9600);  
  Serial.setTimeout(2000);  
  while (!Serial) { }  
  Serial.println();  
  Serial.println("ESP8266 IBM Cloud Application");  
  
  // Start WiFi connection  
  WiFi.mode(WIFI_STA);  
  WiFi.begin(ssid, pass);  
  while (WiFi.status() != WL_CONNECTED)  
  {  
    delay(500);  
    Serial.print(".");  
  }  
  Serial.println(" ");  
  Serial.println("WiFi Connected");  
  Serial.println(WiFi.localIP());  
  
  // Start connected devices  
  dht.begin();  
  
  // Connect to MQTT - IBM Watson IoT Platform  
  if (mqtt.connect(MQTT_DEVICEID, MQTT_USER, MQTT_TOKEN)) {  
    Serial.println("MQTT Connected");  
    mqtt.subscribe(MQTT_TOPIC_DISPLAY);  
  
  }  
  void loop() {  
    mqtt.loop();  
    while (!mqtt.connected()) {  
      Serial.print("Attempting MQTT connection...");  
      // Attempt to connect  
      if (mqtt.connect(MQTT_DEVICEID, MQTT_USER, MQTT_TOKEN)) {  
        Serial.println("MQTT Connected");  
      }  
    }  
  }  
}
```

```

    mqtt.subscribe(MQTT_TOPIC_DISPLAY);
    mqtt.loop();
} else {
    Serial.println("MQTT Failed to connect!");
    delay(5000);
}
}
h = dht.readHumidity();
t = dht.readTemperature(); // uncomment this line for centigrade
// t = dht.readTemperature(true); // uncomment this line for Fahrenheit
Serial.print("SCHOOL IN 2KM DETECTED");
    Serial.print("\n");
    Serial.print("ALERT !!! ALERT !!! GO SLOW..");
    if(h>80)
    {
        Serial.print("ALERT! THERE IS A HEAVY RAIN, GO SLOW");
    }
    delay(2000);
    Serial.print("SPEED LIMIT SHOULD BE LESS THAN 40KM");
    Serial.print("\n");
    Serial.print("ALERT!!! ALERT!! GO SLOW..");
    delay(2000);
    Serial.print("HOSPITAL IN 50KM DETECTED");
    Serial.print("\n");
    Serial.print("ALERT !!! ALERT !!! GO SLOW..");
    Serial.print("\n");
    Serial.print("TAKE DIVERSION ROAD WORK IN PROGRESS");

    if (!mqtt.publish(MQTT_TOPIC, msg)) {
        Serial.println("MQTT Publish failed");
    }
}

// Pause - but keep polling MQTT for incoming messages
for (int i = 0; i < 10; i++) {
    mqtt.loop();
    delay(1000);
}
}

```