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| **Date** | **16/11/2022** |
| **Team ID** | **PNT2022TMID06065** |
| **Project Name** | Real-Time Water Quality Monitoring And Control  System |

**CODING:**

#include <ESP8266WiFi.h> #include <PubSubClient.h> WiFiClient wifiClient;

//Enter your network credentials below in ssid and password const char\* ssid = " ";

const char\* password = " ";

//Provide your IBM IOT Platform credentials #define ORG ""

#define DEVICE\_TYPE "" #define DEVICE\_ID "" #define TOKEN ""

char server[] = ORG ".messaging.internetofthings.ibmcloud.com";

char publishTopic[] = "iot-2/evt/Data/fmt/json";

char topic[] = "iot-2/cmd/home/fmt/String"; // cmd REPRESENT command type AND COMMAND IS TEST OF FORMAT STRING

char authMethod[] = "use-token-auth"; char token[] = TOKEN;

char clientId[] = "d:" ORG ":" DEVICE\_TYPE ":" DEVICE\_ID;

void callback(char\* topic, byte\* payload, unsigned int payloadLength); PubSubClient client(server, 1883, callback, wifiClient);

int publishInterval = 5000; // 30 seconds long lastPublishMillis;

String data;

void setup()

{

Serial.begin(9600); pinMode(D0, OUTPUT); wifiConnect(); mqttConnect();

}

void loop() {

if (millis() - lastPublishMillis > publishInterval)

{

publishData(); lastPublishMillis = millis();

if (!client.loop()) { mqttConnect();

}

}

void wifiConnect() {

Serial.print("Connecting to "); Serial.print(ssid); WiFi.begin(ssid, password);

while (WiFi.status() != WL\_CONNECTED) { delay(500);

Serial.print(".");

}

Serial.print("nWiFi connected, IP address: "); Serial.println(WiFi.localIP());

}

void mqttConnect() {

if (!client.connected()) {

Serial.print("Reconnecting MQTT client to "); Serial.println(server); while (!client.connect(clientId, authMethod, token)) { Serial.print(".");

delay(500);

}

initManagedDevice(); Serial.println();

}

void initManagedDevice() { if (client.subscribe(topic)) {

// Serial.println(client.subscribe(topic)); Serial.println("subscribe to cmd OK");

} else {

Serial.println("subscribe to cmd FAILED");

}

}

void callback(char\* topic, byte\* payload, unsigned int payloadLength) {

Serial.print("callback invoked for topic: "); Serial.println(topic);

for (int i = 0; i < payloadLength; i++) {

//Serial.print((char)payload[i]); data += (char)payload[i];

}

Serial.println("Data: " + data ); if (data == "lon") { digitalWrite(D0, HIGH);

}

else if (data == "loff") { digitalWrite(D0, LOW);

}

data = "";

}

void publishData()

{

int a = 10; Serial.print("Sample Value: "); Serial.println(a);

String payload = "{\"d\":{\"data\":"; payload += a;

payload += "}}";

Serial.print("\n"); Serial.print("Sending payload: "); Serial.println(payload);

if (client.publish(publishTopic, (char\*) payload.c\_str())) { Serial.println("Publish OK");

} else {

Serial.println("Publish FAILED");

}

}