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| Date | 16 November 2022 |
| Team ID | PNT2022TMID15090 |
| Project Name | Hazardous Area Monitoring for Industrial Plant  Powered by IoT |

SPRINT 2

#include <WiFi.h>

#include <PubSubClient.h>

#include <DHT.h>

WiFiClientwifiClient;

String data3;

#define DHTTYPE DHT11

#define DHTPIN 9

DHT dht(DHTPIN, DHTTYPE);

#define ORG "v6wg8x"

#define DEVICE\_TYPE "nodeMcu"

#define DEVICE\_ID "NodeMCU"

#define TOKEN "123456789"

#define speed 0.034

voidcallback(char\* topic, byte\* playload, unsigned intpayloadLength);

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

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

char topic[] = "iot-2/cmd/test/fmt/String";

charauthMethod[] = "use-token-auth";

char token[] = TOKEN;

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

PubSubClientclient(server, 1883, callback , wifiClient);

voidpublishData();

String command;

String data = "";

long duration;

floatdist;

void setup()

{

Serial.begin(115200);

dht.begin();

wifiConnect();

mqttConnect();

}

void loop() {

publishData();

delay(500);

if (!client.loop()) {

mqttConnect();

}

}

voidwifiConnect() {

Serial.print("Connecting to "); Serial.print("Wifi");

WiFi.begin("SSID","Passord");

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

delay(500);

Serial.print(".");

}

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

}

voidmqttConnect() {

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();

}

}

voidinitManagedDevice() {

if (client.subscribe(topic)) {

Serial.println("IBM subscribe to cmd OK");

} else {

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

}

}

voidpublishData()

{

intsensorValue = analogRead(34); //MQT 135 connected to GPIO 34 (Analog ADC1\_CH6)

Serial.print("AirQua=");

Serial.print(sensorValue, DEC);

Serial.println(" PPM");

float humid = dht.readHumidity();

float temp = dht.readTemperature(true);

floatairQty = sensorValue/4095;

String payload = "{\"Temperature\":";

payload += temp;

payload += "}";

if (client.publish(publishTopic, (char\*) payload.c\_str())) {

Serial.println("Publish OK");

}

payload = "{\"Air Quality\":";

payload += airQty;

payload += "%}";

if (client.publish(publishTopic, (char\*) payload.c\_str())) {

Serial.println("Publish OK");

}

}

voidcallback(char\* subscribeTopic, byte\* payload, unsigned intpayloadLength) {

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

Serial.println(subscribeTopic);

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

dist += (char)payload[i];

}

Serial.println("data:" + data3);

if (data3 == "lighton") {

Serial.println(data3);

}

data3 = "";

}