PROJECT DEVELOPMENT PHASE

SPRINT-4

Team ID	PNT2022TMID44638
Project Name	Hazardous Area Monitoring for Industrial Plant powered by IOT
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Code:

```
#include <DHT.h>
WiFiClient
wifiClient; String
data3;
#define DHTTYPE
DHT11 #define
DHTPIN 4
#define MQTPIN 34
DHT dht(DHTPIN, DHTTYPE);
#define ORG "illeiar"
#define DEVICE_TYPE
"NodeMCU" #define
DEVICE_ID "NodeMCU"
#define TOKEN "12345678" #define speed 0.034 void
callback(char* topic, byte* playload, unsigned int
payloadLength); char server[] = ORG
".messaging.internetofthings.ibmcloud.com"; char publishTopic[]
= "iot-2/evt/Data/fmt/json"; char topic[] = "iot-
2/cmd/test/fmt/String"; char authMethod[] = "use-token-auth";
char token[] = TOKEN; char clientId[] = "d:" ORG ":"
DEVICE_TYPE ":" DEVICE_ID; PubSubClient client(server,
1883, callback , wifiClient);

void publishData();
String command;
```

```
String data = "";
long duration;
float dist;
void setup()
{
Serial.begin(115200);
dht.begin();
wifiConnect();
mqttConnect();
}
void loop() {
publishData();
delay(500); if
(!client.loop()) {
mqttConnect();
}
}
void wifiConnect() {
Serial.print("Connecting to ");
Serial.print("Wifi"); WiFi.begin("JerroldWi-
Fi","75779901"); while (WiFi.status() !=
WL_CONNECTED) { delay(500);
Serial.print(".");
}
Serial.print("WiFi 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("IBM subscribe to cmd
OK");
} else {
Serial.println("subscribe to cmd FAILED");
}
}
void publishData()
{
int sensorValue = analogRead(MQTPIN); //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); String
payload = "{\"Humidity\":"; payload += humid;
payload += "}"; if (client.publish(publishTopic,
(char*) payload.c_str())) { Serial.println("Publish
OK");
}
payload = "{\"Temperature\":";
payload += temp; payload +=
"}"; if
(client.publish(publishTopic, (char*)
payload.c_str())) { Serial.println("Publish OK");
}
payload = "{\"AirQuality\":"; payload +=
String(sensorValue); payload += "}"; if
(client.publish(publishTopic, (char*)
payload.c_str())) { Serial.println("Publish OK");
}
```

```
}
```

```
}
```

```
void callback(char* subscribeTopic, byte* payload, unsigned int
payloadLength) { Serial.print("callback invoked for topic:");
Serial.println(subscribeTopic); for (int
i = 0; i < payloadLength; i++) { dist
+= (char)payload[i];
}
Serial.println("data:" + data3);
if (data3 == "lighton") {
Serial.println(data3);
}
data3 = "";
}
```