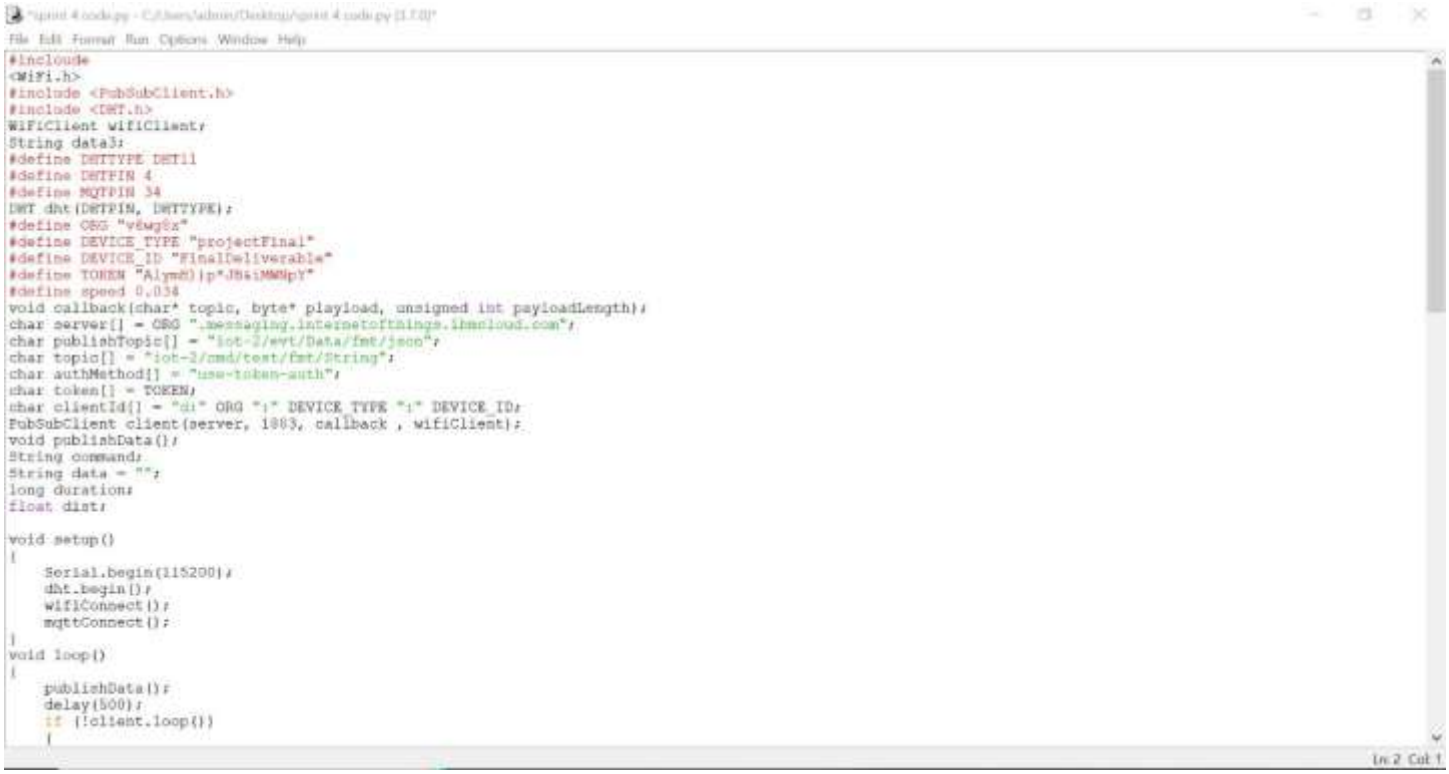
PROJECT DEVELOPMENT PHASE

SPRINT-4

Team ID	PNT2022TMID15984
Project Name	Hazardous Area Monitoring for Industrial Plant powered by IOT
Team Members	Anuvarshini SS Bhuvaneshwari S Fiona M Geethika KN

Code:



```
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#includde
<WiFi.h>
#include <PubSubClient.h>
#include <DHT.h>
WiFiClient wifiClient;
String data3;
#define DHTTYPE DHT11
#define DHTPIN 4
#define MQTPIN 34
DHT dht(DHTPIN, DHTTYPE);
#define ORG "v6wg8x"
#define DEVICE_TYPE "projectFinal"
#define DEVICE_ID "FinalDeliverable"
#define TOKEN "Alym8)p*JB&iMWNpY"
#define speed 0.034
void callback(char* topic, byte* payload, 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())
    {
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```
        mqttConnect();
    }

}

void wifiConnect()
{
    Serial.print("Connecting to "); Serial.print("Wifi");
    WiFi.begin("JerroldWi-Fi","75179901");
    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++) {
    data3 += (char)payload[i];
}
    Serial.println("data:" + data3);
    if (data3 == "lighton") {
        Serial.println(data3);
}
    data3 = "";
}
```