TEAM ID : PNT2022TMID12767

PROJECT TITLE : Industry-Specific Intelligent Fire Management System

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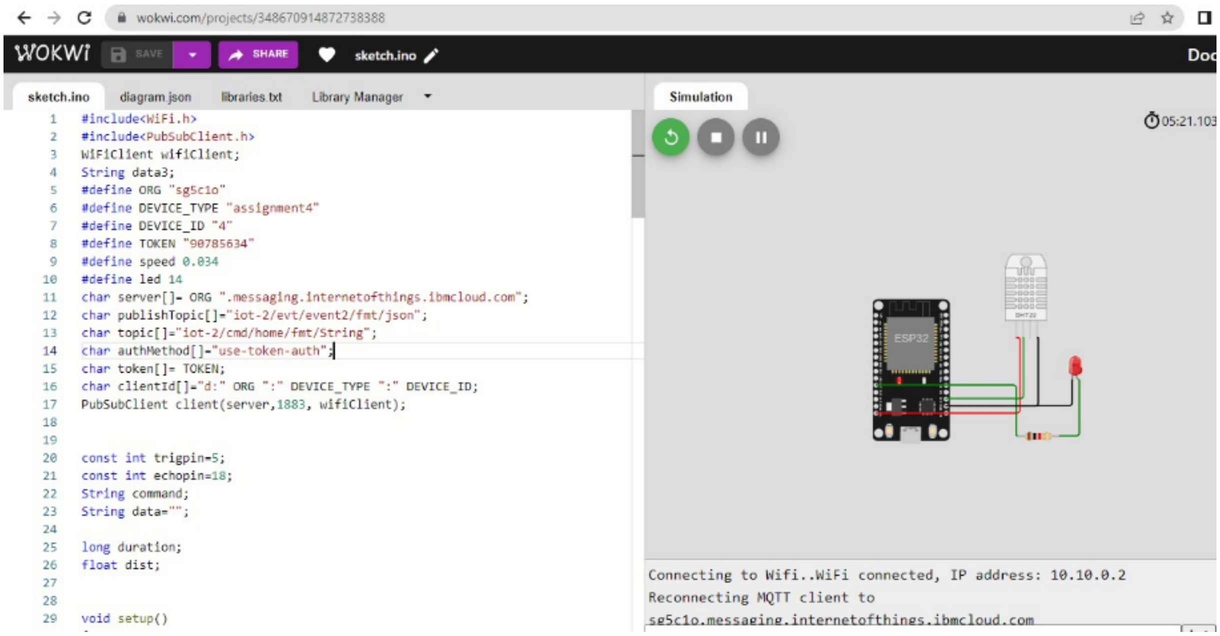
CODE :

```
#include<WiFi.h>
include<PubSubClient.h>
WiFiClient wifiClient;
Stringdata3;
#defineORG"sg5c1o"
#define DEVICE_TYPE "assignment4"
#defineDEVICE_ID"4"
#defineTOKEN"90785634"
#definespeed 0.034
#defineled14
char server[]= ORG ".messaging.internet of things.ibmcloud.com";
charpublishTopic[]="iot-2/evt/event2/fmt/json";
char topic[]="iot-2/cmd/home/fmt/String";
char auth Method[]="use-token-auth";
char token[]=TOKEN;
charclientId[]="d:"ORG":"DEVICE_TYPE ":"DEVICE_ID;
PubSubClient client(server,1883, wifi Client);const int trigpin=5;
const int echopin=18;
String command;
String data="";

long duration;

float dist;

void setup()

{

Serial.begin(115200);

pinMode(led,OUTPUT);

pinMode(trigpin,OUTPUT);

pinMode(echopin,INPUT);

wifiConnect();

mqttConnect();

}

voidloop(){

bool isNearby = dist <100;

digitalWrite(led,isNearby);

publishData();

delay(500);

if(!client.loop()){

mqttConnect();

}

}

void wifiConnect(){

Serial.print("Connecting to ");

Serial.print("Wifi");
```

```
WiFi.begin("Wokwi-GUEST","",6);

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 in it Managed Device(){if(client.subscribe(topic)){

//Serial.println(client.subscribe(topic));

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

}else{
```

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

}

}

void publish Data()

{

digital Write(trigpin,LOW);

digital Write(trigpin,HIGH);

delayMicroseconds(10);

digitalWrite(trigpin,LOW);

duration=pulseIn(echopin,HIGH);

dist=duration*speed/2;if(dist<100){

String payload ="{\"Alert!! Alert!!Distance\":";

payload+=dist;

payload+="}";

Serial.print("\n");

Serial.print("Sending payload:");

Serial.println(payload);

if(client.publish(publish Topic,(char*)payload.c_str())){

Serial.println("PublishOK");

}

}

if(dist>100){

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

payload+=dist;
payload+="}";
Serial.print("\n");
Serial.print("Sending payload:");
Serial.println(payload);
if(client.publish(publish Topic,(char*)payload.c_str())){
Serial.println("Publish OK");
}else{
Serial.println("Publish FAILED");
}
}
}
```

CIRCUIT:



```
#include<WiFi.h>
#include<PubSubClient.h>
WiFiClient wifiClient;
String data3;
#define ORG "sg5c1o"
#define DEVICE_TYPE "assignment4"
#define DEVICE_ID "4"
#define TOKEN "90785634"
#define speed 0.034
#define led 14
char server[]= ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[]="iot-2/evt/event2/fmt/json";
char topic[]="iot-2/cmd/home/fmt/String";
char authMethod[]="use-token-auth";
char token[]= TOKEN;
char clientId[]="d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
PubSubClient client(server,1883, wifiClient);


const int trigpin=5;
const int echopin=18;
String command;
String data="";

long duration;
float dist;


void setup()
```

```
Connecting to Wifi..WiFi connected, IP address: 10.10.0.2
Reconnecting MQTT client to
sg5c1o.messaging.internetofthings.ibmcloud.com
```