TEAM ID : PNT2022TMID12767

PROJECT TITLE : Industry-Specific Intelligent Fire Management System

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CODE:

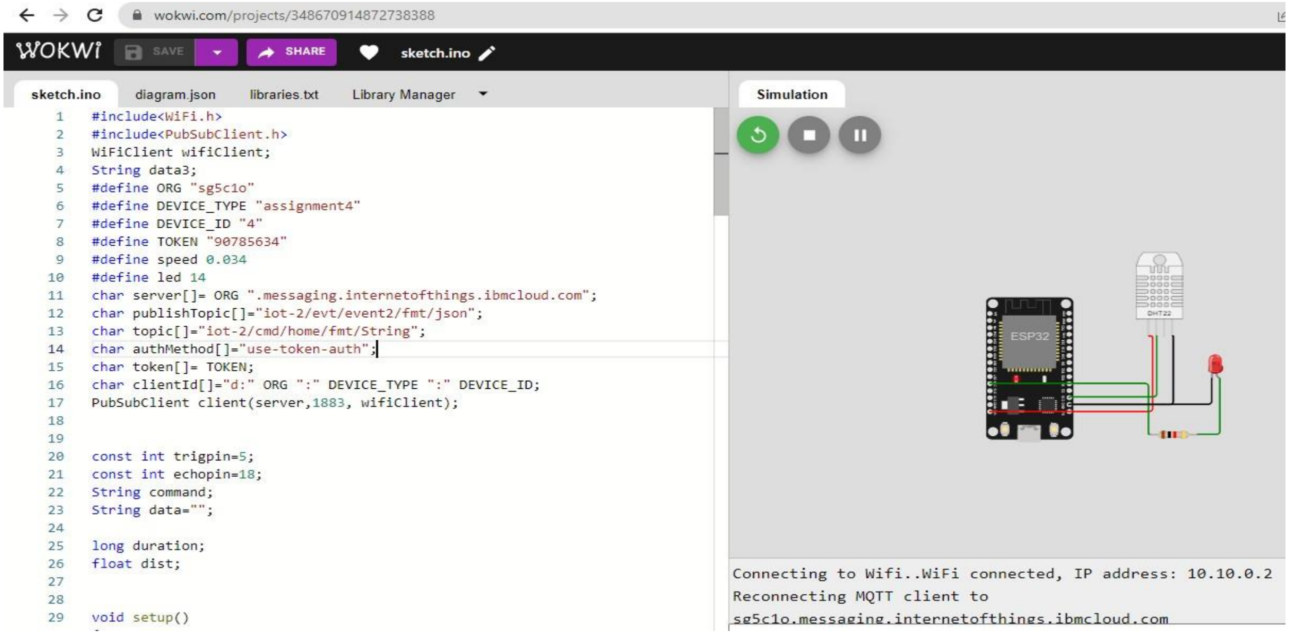
```
#include<WiFi.h>
include<PubSubClient.h>
WiFiClient wifiClient;
String data3;
#define ORG "sg5c1o"
#define DEVICE_TYPE "assignment4"
#define DEVICE_ID "4"
#define TOKEN "90785634"
#define speed 0.034
#define led 14
char server[]= ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[]="iot-2/evt/event2/fmt/json";
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()
{
Serial.begin(115200);
pinMode(led,OUTPUT);
pinMode(trigpin,OUTPUT);
pinMode(echopin,INPUT);
wifiConnect();
mqttConnect();
}
void loop(){
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 initManagedDevice(){
if(client.subscribe(topic)){
// Serial.println(client.subscribe(topic));
Serial.println("IBM subscribe to cmd OK");
}else{
Serial.println("subscribe to cmd FAILED");
}
}
void publishData()
{
digitalWrite(trigpin,LOW);
digitalWrite(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(publishTopic,(char*) payload.c_str())){
Serial.println("Publish OK");
}

}
if(dist>100){
String payload ="{\"Distance\":";
payload += dist;
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");
}
}
}
```

CIRCUIT:



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const int trigpin=5;
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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
```