TEAMID:PNT2022TMID12767

PROJECTTITLE: Industry-SpecificIntelligentFireManagementSystem

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CODE:

```
#include<WiFi.h>includ
e<PubSubClient.h>WiFi
Client
wifiClient;Stringdata3;
#defineORG"sg5c1o"
#define DEVICE_TYPE
"assignment4"#defineDEVICE_ID"4"
#defineTOKEN"90785634"
#definespeed 0.034
#defineled14
char server[]= ORG
".messaging.internetofthings.ibmcloud.com";charpublishTo
pic[]="iot-2/evt/event2/fmt/json";
char topic[]="iot-
2/cmd/home/fmt/String";charauthMet
hod[]="use-token-auth";
chartoken[]=TOKEN;
charclientId[]="d:"ORG":"DEVICE_TYPE ":"DEVICE_ID;
PubSubClient client(server,1883,
wifiClient);const inttrigpin=5;
const int
echopin=18;String
command;Stringdat
a="";
longduration;
floatdist;voi
d setup()
{
```

```
Serial.begin(115200);pi
nMode(led,OUTPUT);
```

```
pinMode(trigpin,OUTPUT);
pinMode(echopin,INPUT);
wifiConnect();mqttConnec
t();
}
voidloop(){
bool isNearby = dist
<100;digitalWrite(led,isN
earby);publishData();
delay(500);if(!cl
ient.loop()){mqt
tConnect();
}
}
voidwifiConnect(){
Serial.print("Connecting to
");Serial.print("Wifi");WiFi.begin("Wokwi-
GUEST","",6);while(WiFi.status()!=
WL_CONNECTED){delay(500);
Serial.print(".");
}
Serial.print("WiFiconnected,IPaddress:");Serial.println(WiFi.localIP());
}
void
mqttConnect(){if(!client.
connected()){
Serial.print("Reconnecting MQTT client to
");Serial.println(server);while(!client.connect(clientId,authMeth
od, token)){Serial.print(".");
delay(500);
}
initManagedDevice();
Serial.println();
}
}
```

```
voidinitManagedDevice()
{if(client.subscribe(topic)
){
//Serial.println(client.subscribe(topic));
Serial.println("IBMsubscribetocmdOK");
}else{
Serial.println("subscribetocmdFAILED");
}
}
voidpublishData()
{
digitalWrite(trigpin,LOW);digital
Write(trigpin,HIGH);delayMicros
econds(10);digitalWrite(trigpin,L
OW);duration=pulseIn(echopin,H
IGH);dist=duration*speed/2;if(di
st<100){
String payload ="{\"Alert!!
Alert!!Distance\":";payload+=dist;
payload+="}";

Serial.print("\n");Serial.print("S
endingpayload:");Serial.println(
payload);
if(client.publish(publishTopic,(char*)payload.c_str())){
Serial.println("PublishOK");
}

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

```
Serial.print("\n");Serial.print("S
endingpayload:");Serial.println(
payload);
if(client.publish(publishTopic,(char*)payload.c_str())){
Serial.println("PublishOK");
}else{
Serial.println("PublishFAILED");
}
}
}
```

CIRCUIT: