ASSIGNMENT IV
UltrasonicSensor

TEAM ID:
PNT2022TMID54090

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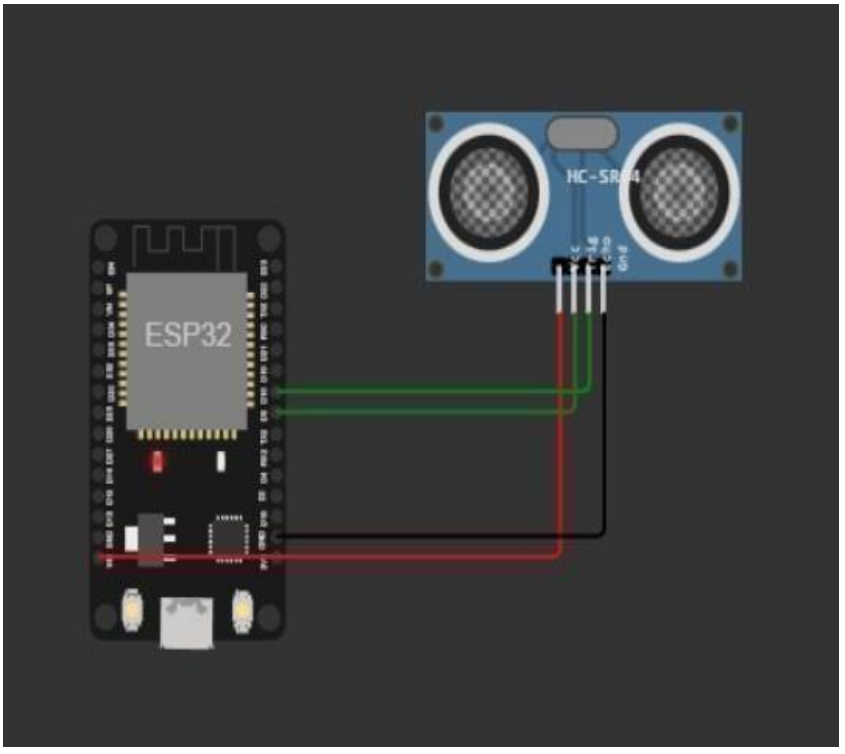
CODE:

```
#include
<WiFi.h>#include<PubSubC
lient.h>WiFiClient;

#defineORG"nhpwjc"
#define DEVICE_TYPE
"NodeMCU"#defineDEVICE_ID"USEY
OURID"#defineTOKEN"USEYOURTOKE
N"
#definespeed0.034
  charserver[]=ORG
".messaging.internetofthings.ibmcloud.com";
charpublishTopic[] = "iot-2/evt/Data/fmt/json"; char
topic[] ="iot-
2/cmd/home/fmt/String";charauthMethod[]="usetoken-
auth";chartoken[]=TOKEN;charclientId[]="d:"ORG":"DEVICE_TY
PE ":" DEVICE_ID; PubSubClient
client(server,1883,wifiClient);voidpublishData(); const
inttrigpin=5;
constintechopin=18;S
tring
command;Stringdata="
";
 longdurati
on;float
dist;voidse
tup()
{
  Serial.begin(115200);pinMode(trigpin,O
  UTPUT);
```

```
  pinMode(echopin,   INPUT);wifiConnect();mqttConnect();
}   void   loop()   {

  publishData();delay(500);i

  f(!client.loop()){
mqttConnect();}}

voidwifiConnect(){
  Serial.print("Connecting to ");
  Serial.print("Wifi");WiFi.begin("Wokwi-
  GUEST","",6);while(WiFi.status()!=WL_CONNECTED){delay(50
  0);
  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,authMethod,token)){Serial.print(".");delay(5
    00);
    }initManagedDevice();
  Serial.println();}}

voidinitManagedDevice(){if(cli
  ent.subscribe(topic)){
    //  Serial.println(client.subscribe(topic));  Serial.println("subscribe  to
    cmdOK");
  }else{
    Serial.println("subscribe to cmd FAILED"); }
}voidpublishData()
{
  digitalWrite(trigpin,LOW);
  digitalWrite(trigpin,HIGH);
```

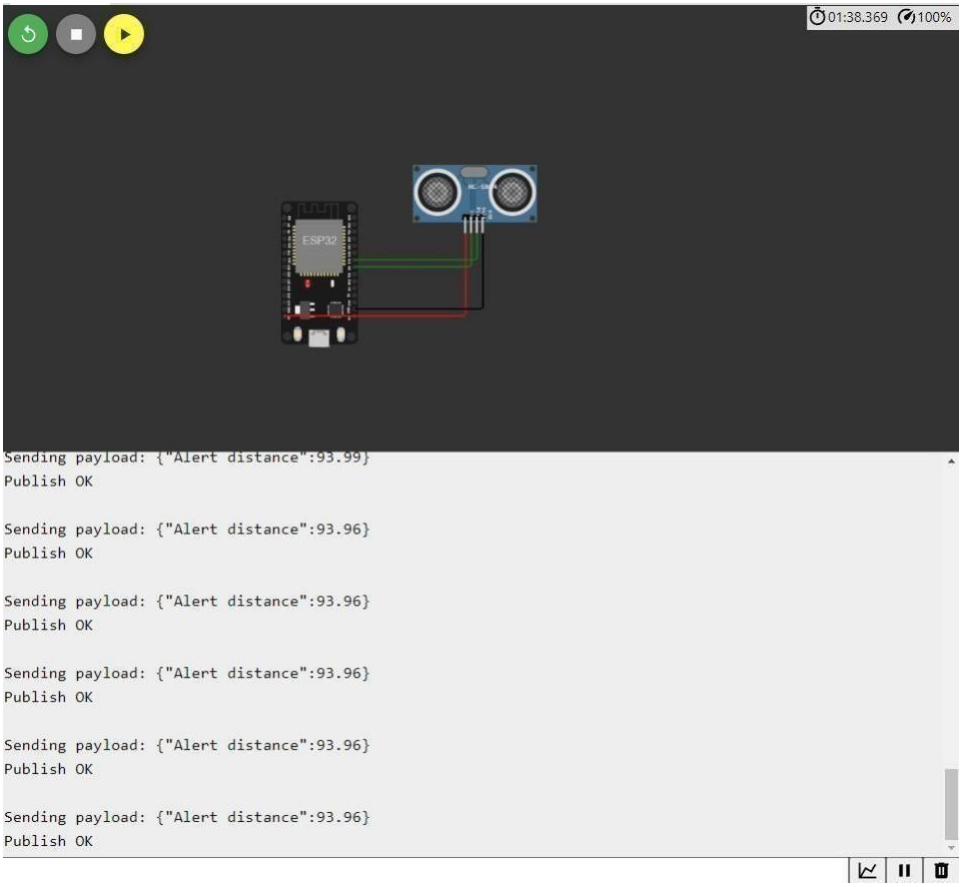
```
  delayMicroseconds(10);                                                    {
  digitalWrite(trigpin,LOW);duration=pulseIn(echopin,HIGH);dist=duration*speed
  /2;if(dist<100){String
    payload="{\"Alertdistance\":";payload+=dist;payload+="}";
    Serial.print("\n");
    Serial.print("Sendingpayload:");Serial.println(payload);if(cli
    ent.publish(publishTopic,(char*)
                                            payload.c_str()))Seri
    al.println("PublishOK");
    }else{
      Serial.println("PublishFAILED");}}
}
```

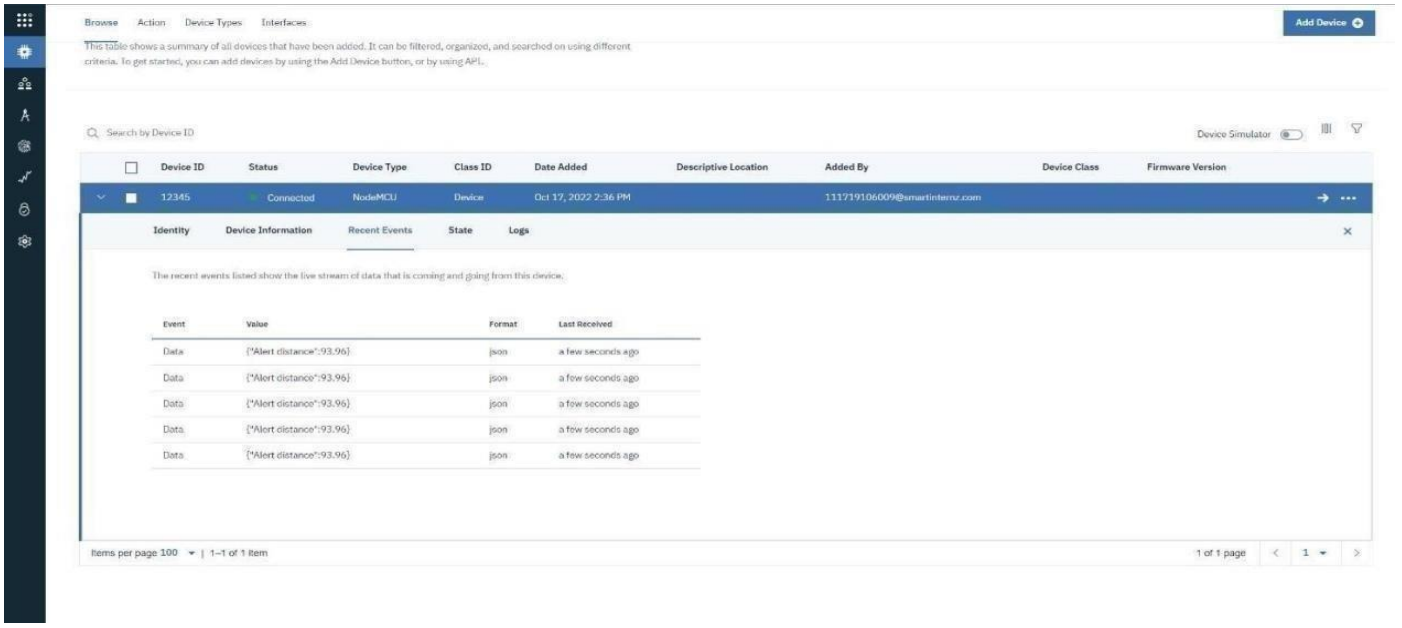
CONNECTIONS:



X

OUTPUT:





WOKWILINK-https://wokwi.com/projects/346405970317935188