ultrasonic - Wokwi Arduino and | IBM

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WOKWI | SAVE | SHARE | ultrasonic | Docs

sketch.ino | diagram.json | libraries.txt | Library Manager

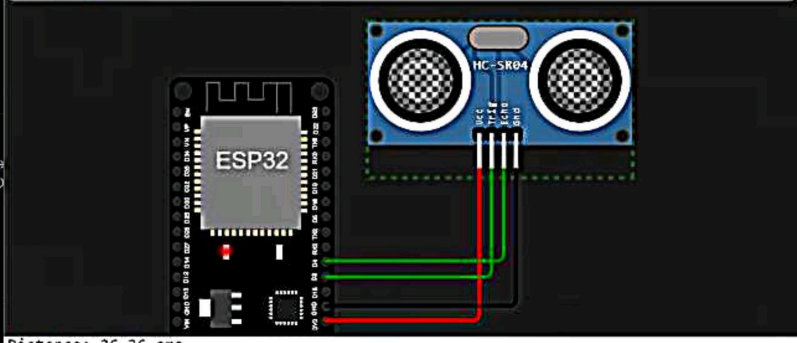
```
#include <WiFi.h>//library for wifi
#include <PubSubClient.h>//library for MQtt

int trigpin=2;
int echopin=4;
String data3;

void callback(char* subscribetopic, byte* payload, unsigned int payloadLength);
#define ORG "bqpll8"//IBM ORGANITION ID
#define DEVICE_TYPE "Gas"//Device type mentioned in ibm watson IOT Platform
#define DEVICE_ID "2001"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "01234567"      //Token

char server[] = ORG ".messaging.internetofthings.ibmcloud.com";// Server Name
char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type of event perform a
char subscribetopic[] = "iot-2/cmd/command/fmt/String";// cmd  REPRESENT command type AND
char authMethod[] = "use-token-auth";// authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id

WiFiClient wifiClient; // creating the instance for wificlient
PubSubClient client(server, 1883, callback ,wifiClient); //calling the predefined client


void setup() {
  Serial.begin(9600);
  Serial.println("Hello, ESP32!");
  pinMode(2, OUTPUT);
  pinMode(4, INPUT);
  delay(10);
  wificonnect();
  mqttconnect();
}
```

Simulation

00:25.914 100%

Editing Ultrasonic Distance Sensor

Distance: 26cm




```
Distance: 26.26 cms
Sending payload: {"Distance":26.26,"Message":"alert"}
Publish ok
Distance: 26.26 cms
Sending payload: {"Distance":26.26,"Message":"alert"}
Publish ok
Distance: 26.26 cms
```

Type here to search

ENG 02:04 PM 10-11-2022

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sketch.ino ● diagram.json libraries.txt Library Manager

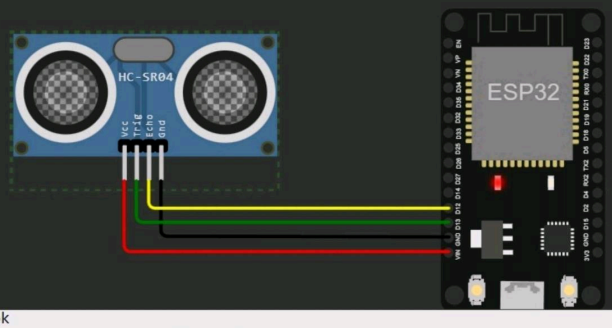
```
void setup()// configureing the ESP32
{
  Serial.begin(115200);
  pinMode(TrigPIN, OUTPUT);
  digitalWrite(TrigPIN, LOW);
  pinMode(EchoPIN, INPUT);
  delay(10);
  Serial.println();
  wificonnect();
  mqttconnect();
}

void loop()// Recursive Function
{
  unsigned long t1;
  unsigned long t2;
  unsigned long pulse_Width;
  float distance;

  digitalWrite(TrigPIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TrigPIN, LOW);

  pulse_Width = pulseIn(EchoPIN,HIGH);

  distance= pulse_Width *0.034 / 2;

  if(distance<100)
  {
    PublishData();
  }

  delay(1000);
  if (!client.loop()) {
    mqttconnect();
```

Simulation

01:02.193 81%

Editing Ultrasonic Distance Sensor

Distance: 228cm




```
Publish ok
Sending payload: {"MESSAGE":"ALERT"}
Publish ok
Sending payload: {"MESSAGE":"ALERT"}
Publish ok
Sending payload: {"MESSAGE":"ALERT"}
Publish ok
```

Type here to search

26°C Cloudy

10:22 AM 11/9/2022

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sketch.ino ● diagram.json libraries.txt Library Manager

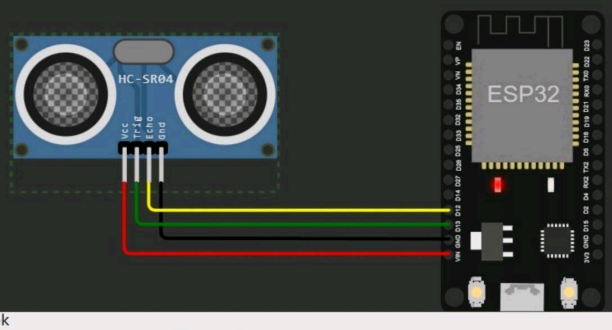
```
  delay(1000);
  if (!client.loop()) {
    mqttconnect();
  }
}



/*.....................................retrieving to Cloud.............................

void PublishData() {
  mqttconnect();//function call for connecting to ibm
  /*
     creating the String in in form JSon to update the data to ibm cloud
  */
  String payload = "{\"MESSAGE\":\"ALERT\"}";


  Serial.print("Sending payload: ");
  Serial.println(payload);


  if (client.publish(publishTopic, (char*) payload.c_str())) {
    Serial.println("Publish ok");// if it sucessfully upload data on the cloud then it wi
  } else {
    Serial.println("Publish failed");
  }

}


void mqttconnect() {
  if (!client.connected()) {
    Serial.print("Reconnecting client to ");
    Serial.println(server);
```

Simulation

01:06.743 83%

Editing Ultrasonic Distance Sensor

Distance: 228cm




```
Publish ok
Sending payload: {"MESSAGE":"ALERT"}
Publish ok
Sending payload: {"MESSAGE":"ALERT"}
Publish ok
Sending payload: {"MESSAGE":"ALERT"}
Publish ok
```

Type here to search

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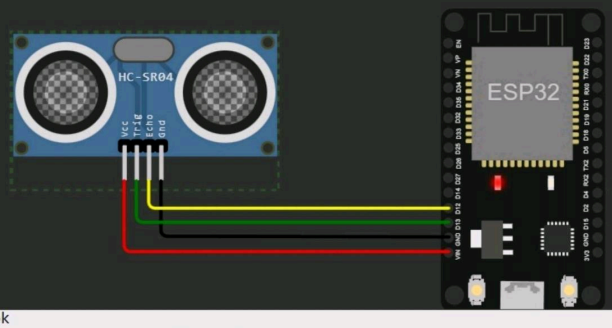
```
    initManagedDevice();
    Serial.println();
  }
}
void wificonnect() //function defination for wificonnect
{
  Serial.println();
  Serial.print("Connecting to ");

  WiFi.begin("Wokwi-GUEST", "", 6);//passing the wifi credentials to establish the connec
  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.println("");
  Serial.println("WiFi connected");
  Serial.println("IP address: ");
  Serial.println(WiFi.localIP());
}

void initManagedDevice() {
  if (client.subscribe(subscribetopic)) {
    Serial.println((subscribetopic));
    Serial.println("subscribe to cmd OK");
  } else {
    Serial.println("subscribe to cmd FAILED");
  }
}

void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)
{

}
```

Simulation

01:12.778 93%

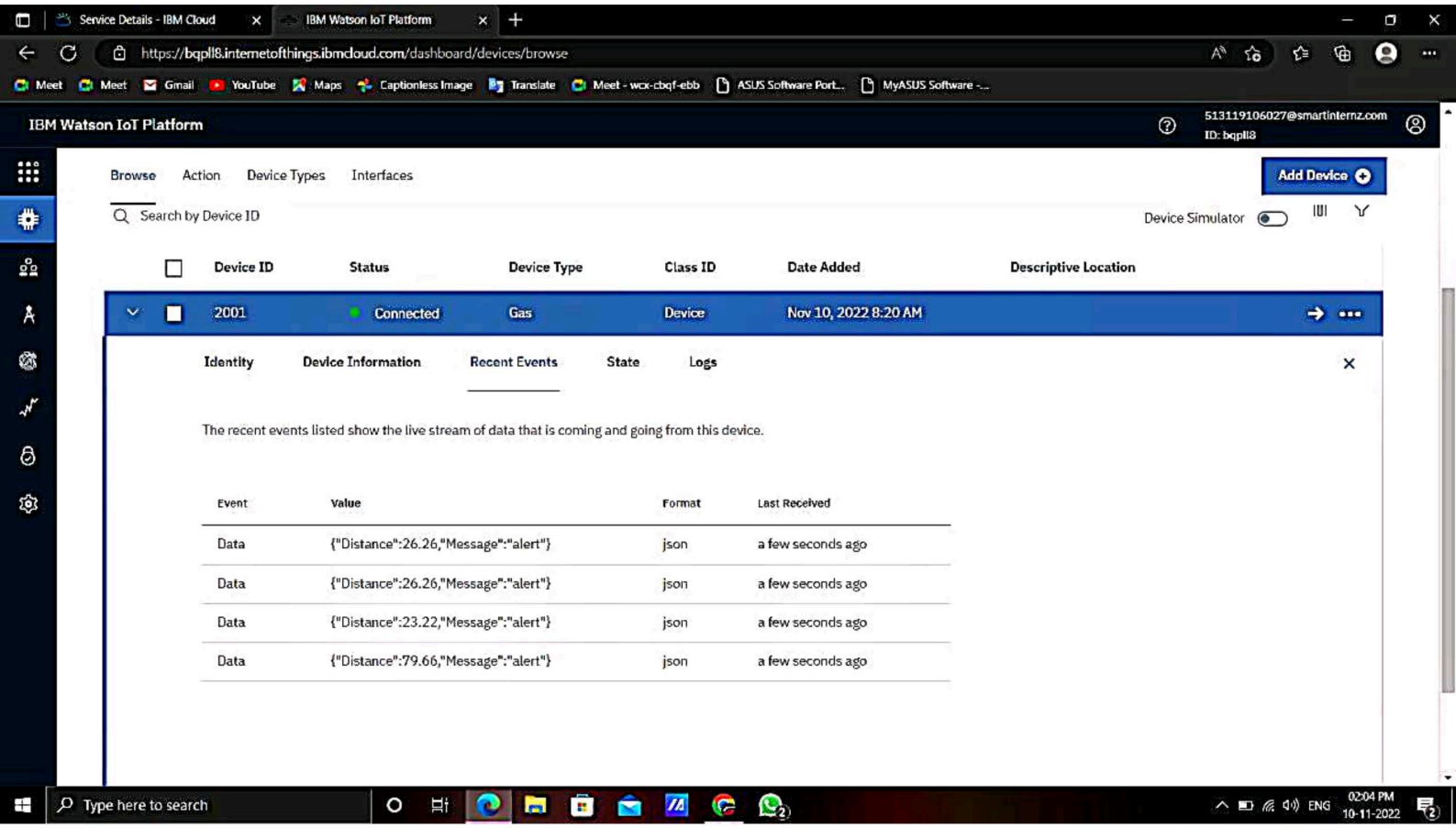
Editing Ultrasonic Distance Sensor

Distance: 228cm




```
Publish ok
Sending payload: {"MESSAGE":"ALERT"}
Publish ok
Sending payload: {"MESSAGE":"ALERT"}
Publish ok
Sending payload: {"MESSAGE":"ALERT"}
Publish ok
```

Type here to search 26°C Cloudy 10:23 AM 11/9/2022


Service Details - IBM Cloud
IBM Watson IoT Platform
https://bqpll8.internetofthings.ibmcloud.com/dashboard/devices/browse
Meet
Gmail
YouTube
Maps
Captionless Image
Translate
Meet - wcx-cbqf-ebb
ASUS Software Port...
MyASUS Software -...
IBM Watson IoT Platform
513119106027@smartinternz.com
ID: bqpll8
Browse
Action
Device Types
Interfaces
Add Device
Search by Device ID
Device Simulator
Device ID
Status
Device Type
Class ID
Date Added
Descriptive Location
2001
Connected
Gas
Device
Nov 10, 2022 8:20 AM
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
Data
{"Distance":26.26,"Message":"alert"}
json
a few seconds ago
Data
{"Distance":26.26,"Message":"alert"}
json
a few seconds ago
Data
{"Distance":23.22,"Message":"alert"}
json
a few seconds ago
Data
{"Distance":79.66,"Message":"alert"}
json
a few seconds ago
Type here to search
ENG
02:04 PM
10-11-2022