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Topic	IOT based safety gadget for child safety monitoring and notification
Assignment 4	Write code and connections in wokwi for ultrasonic sensor. Whenever distance is less than 100cms send “alert” to IBM cloudand display in device recent events.

Write code and connections in wokwi for ultrasonic sensor. Whenever distance is less than 100 cms send alert to ibm cloud and display in device recent events. Upload document with wokwi share link and images of ibmcloud

Program Code :

```
#include <WiFi.h> #include

<PubSubClient.h>WiFiClient

wifiClient; String data3;

#define ORG "ozyf7e"

#define DEVICE_TYPE "AnuESP"

#define DEVICE_ID "Anu123"

#define TOKEN "12345678"

#define speed 0.034

#define led 14

char server[] = ORG ".messaging.internetofthings.ibmcloud.com";char
publishTopic[]

= "iot-2/evt/shreedharen/fmt/json";

char topic[] = "iot-2/come/led/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) {
```

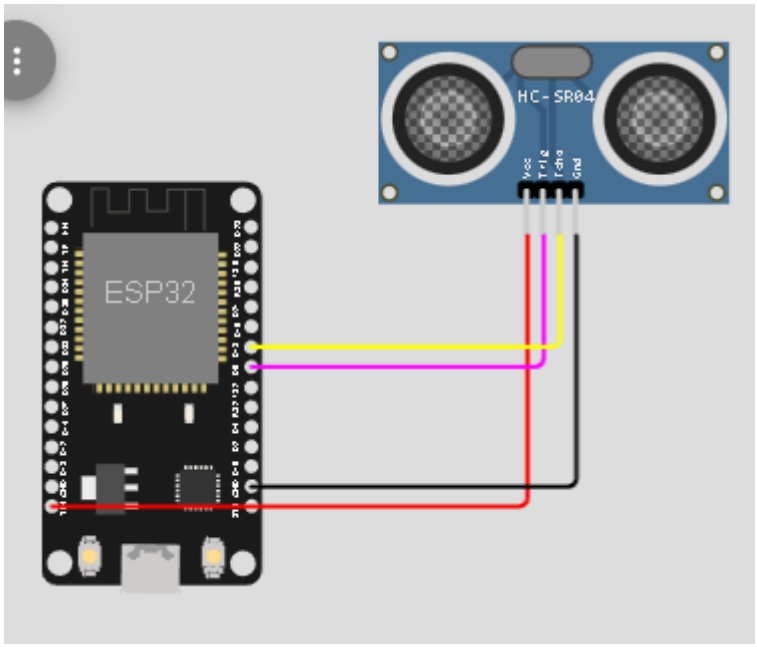
```
Delay(500);
Serial.print(".");
}
Serial.print("WiFi connected, IP address: ");
Serial.println(WiFi.localIP());
}
void mqttConnect() {
if (!client.connected()) {
Serial.print("Reconnecting MQTT client to ");
Serial.println(server);
while (!client.connect(clientId, authMethod, token)) {
Serial.print(".");
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 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");
}
```

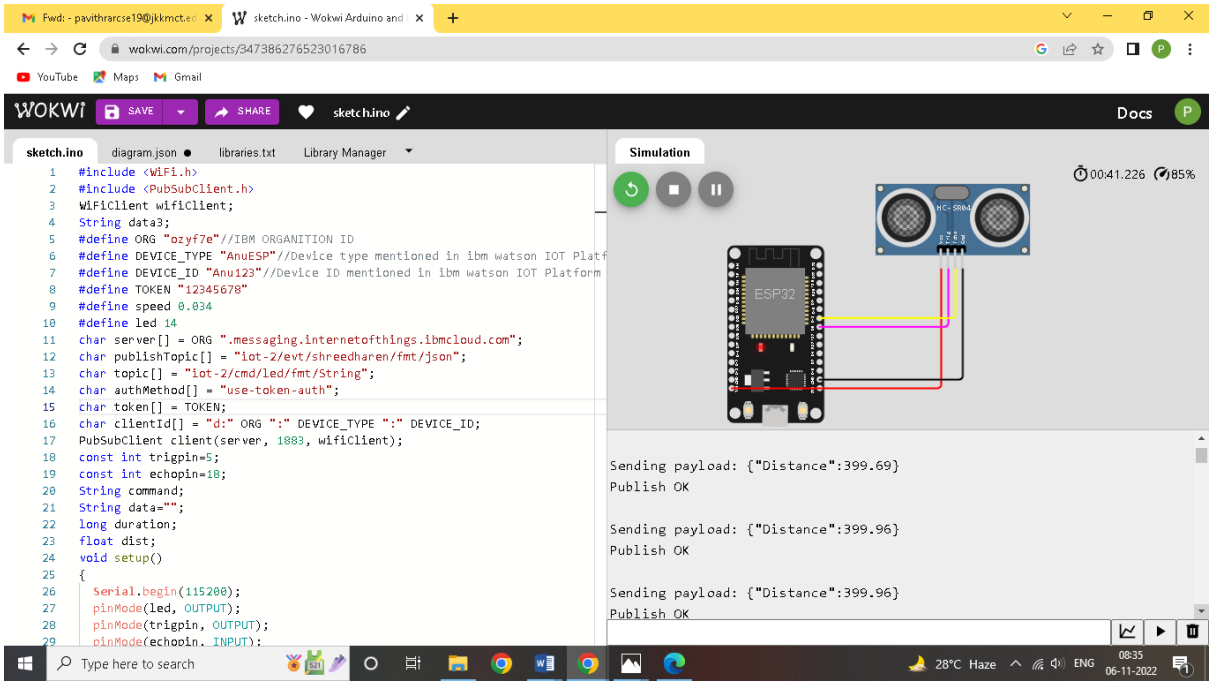
}

}

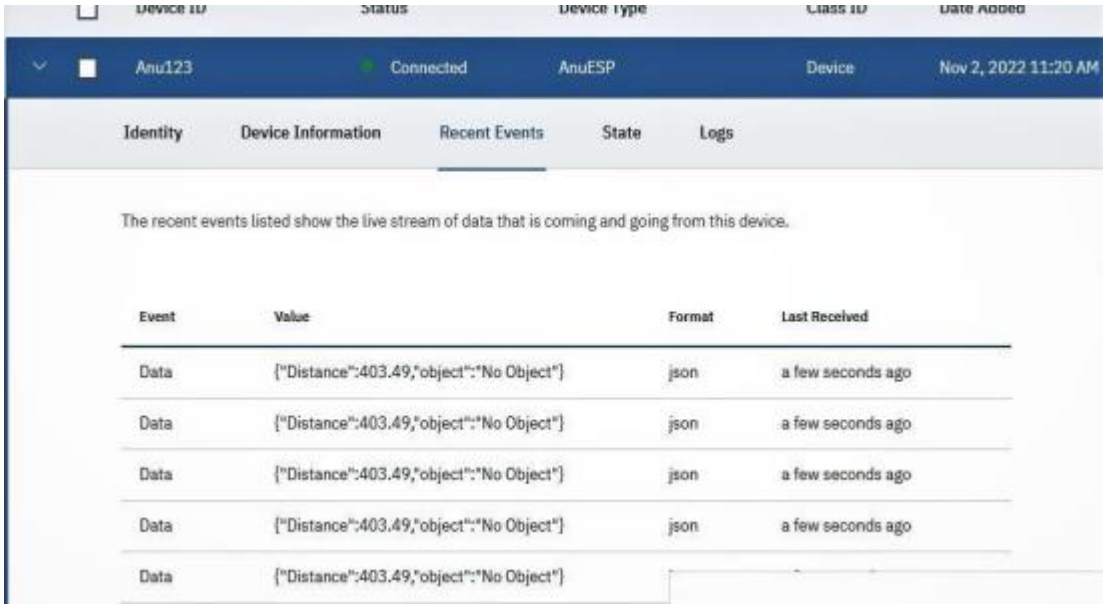
Connections:



OUTPUT:



COULD IMAGE :



Wokwi link:

https://wokwi.com/projects/347386276523016786