ASSIGNMENT - 4

DATE	17 OCTOBER 2022
TEAM ID	PNT2022TMID06972
NAME	ARUNA S
STUDENT ROLL NUMBER	GCTC1918104
MAXIMUM MARKS	2 MARKS

QUESTION:

Write code and connections in wokwi for the ultrasonic sensor.

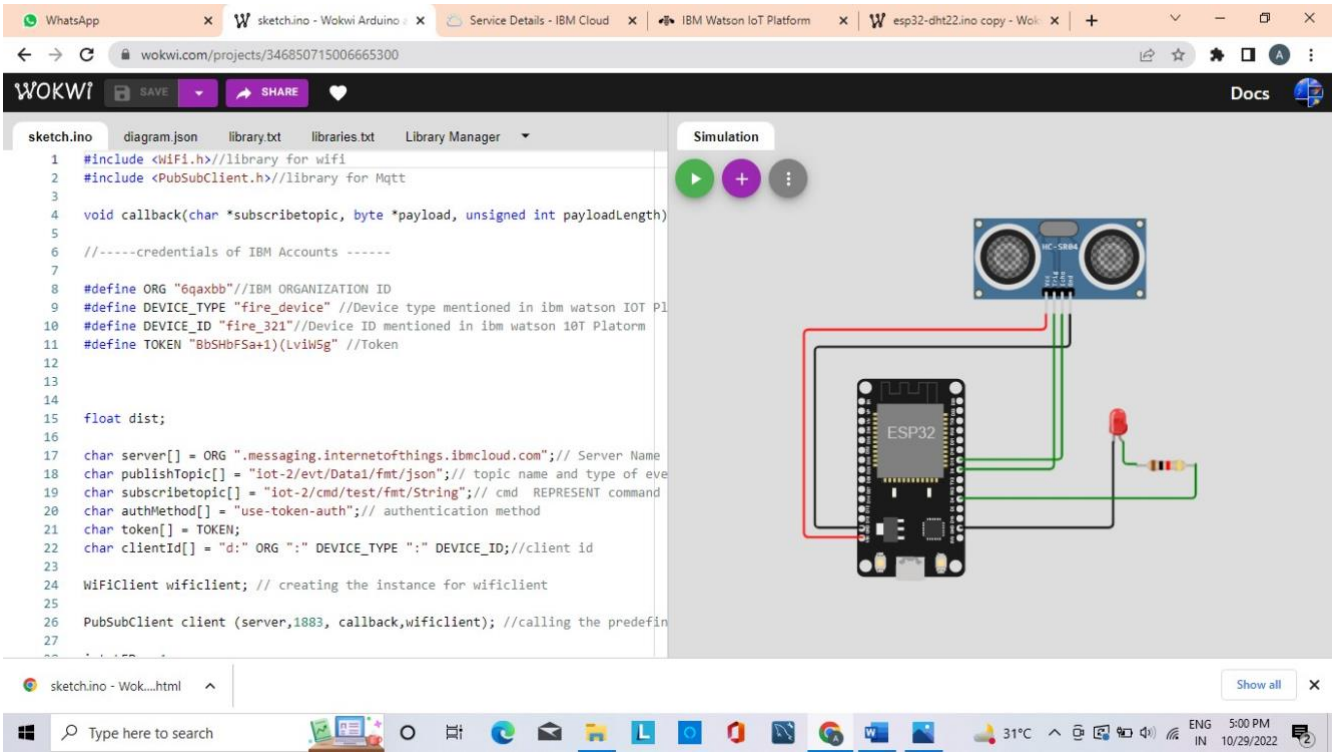
Whenever the distance is less than 100 cms send an "alert" to the IBM cloud and display in the device recent events.

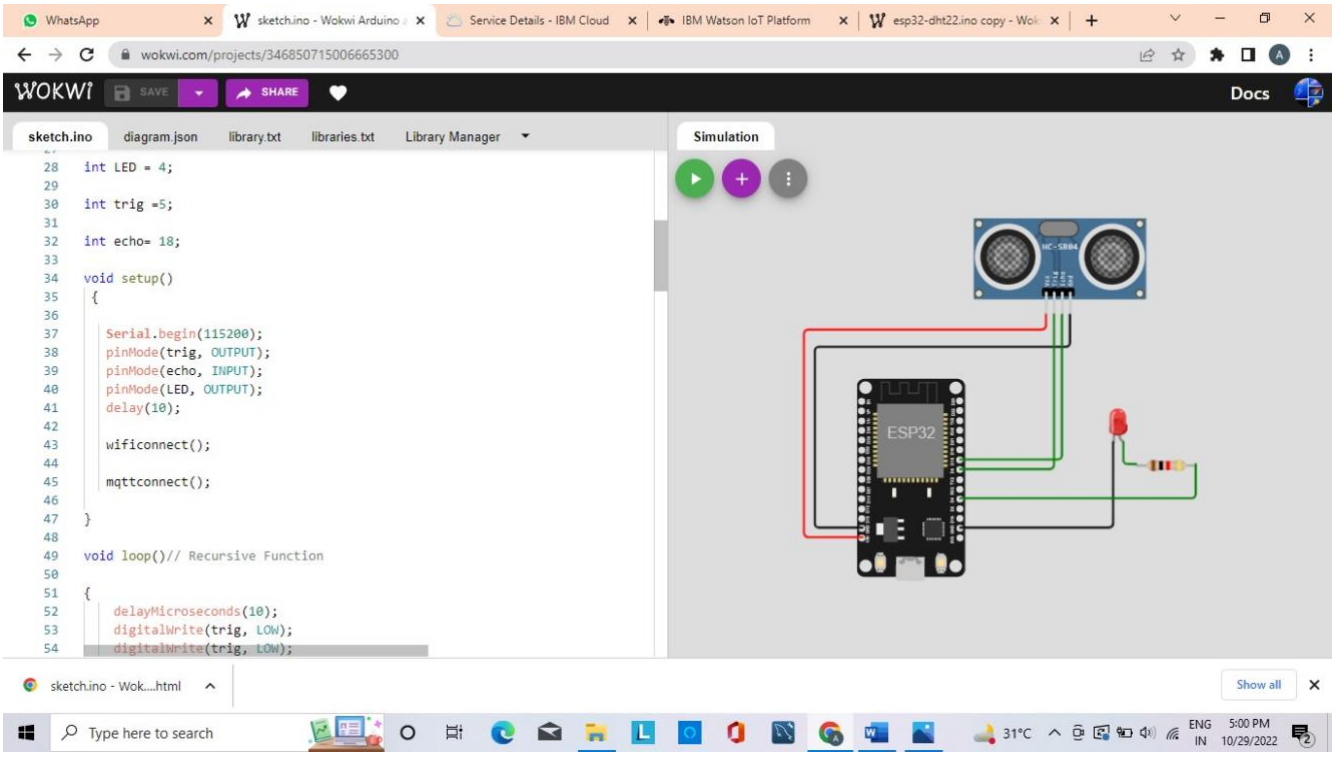
Upload document with wokwi share link and images of IBM cloud

WOKWI CODE AND IMPLEMENTATION LINK:

https://wokwi.com/projects/346850715006665300

CODE:




WhatsApp
sketch.ino - Wokwi Arduino
Service Details - IBM Cloud
IBM Watson IoT Platform
esp32-dht22.ino copy - Wok
wokwi.com/projects/346850715006665300
WOKWI
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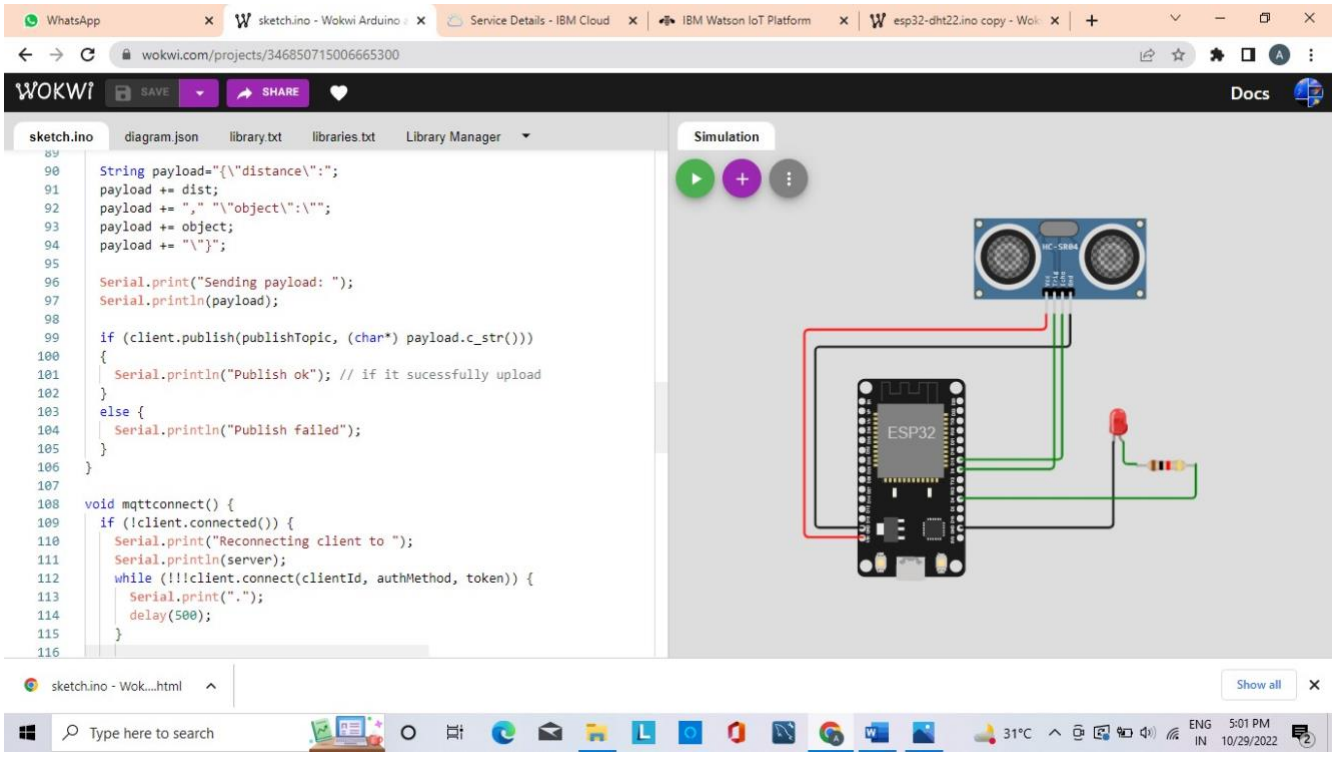
Docs
sketch.ino
diagram.json
library.txt
libraries.txt
Library Manager
Simulation
int LED = 4;
int trig =5;
int echo= 18;
void setup()
{
Serial.begin(115200);
pinMode(trig, OUTPUT);
pinMode(echo, INPUT);
pinMode(LED, OUTPUT);
delay(10);
wificonnect();
mqttconnect();
}
void loop()// Recursive Function
{
delayMicroseconds(10);
digitalWrite(trig, LOW);
digitalWrite(trig, LOW);
HC-SR04
ESP32
sketch.ino - Wok....html
Show all
Type here to search
31°C
ENG
IN
5:00 PM
10/29/2022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Library Manager
Simulation
String payload="{\"distance\":";
payload += dist;
payload += "," "\"object\":\"";
payload += object;
payload += "\"}";
Serial.print("Sending payload: ");
Serial.println(payload);
if (client.publish(publishTopic, (char*) payload.c_str()))
{
Serial.println("Publish ok"); // if it sucessfully upload
}
else {
Serial.println("Publish failed");
}
}
void mqttconnect() {
if (!client.connected()) {
Serial.print("Reconnecting client to ");
Serial.println(server);
while (!!!client.connect(clientId, authMethod, token)) {
Serial.print(".");
delay(500);
}
HC-SR04
ESP32
sketch.ino - Wok....html
Show all
Type here to search
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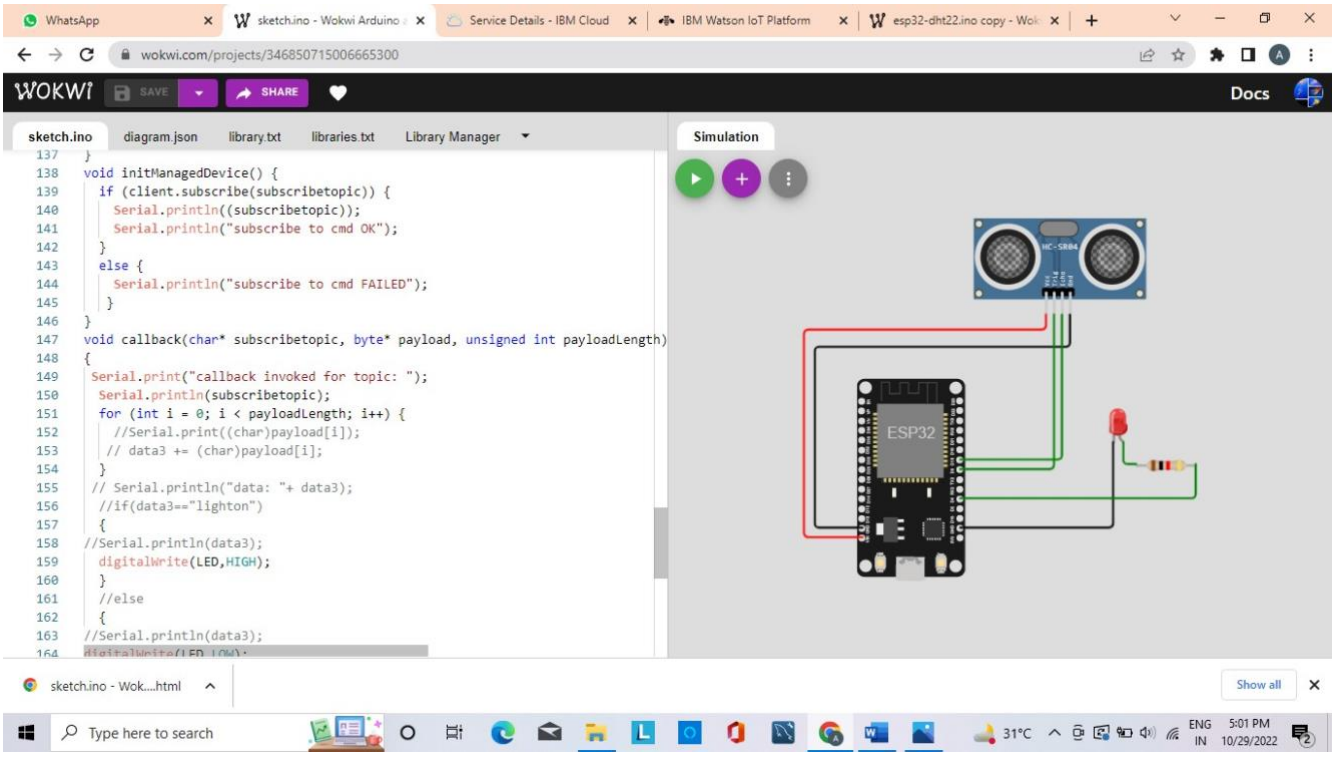
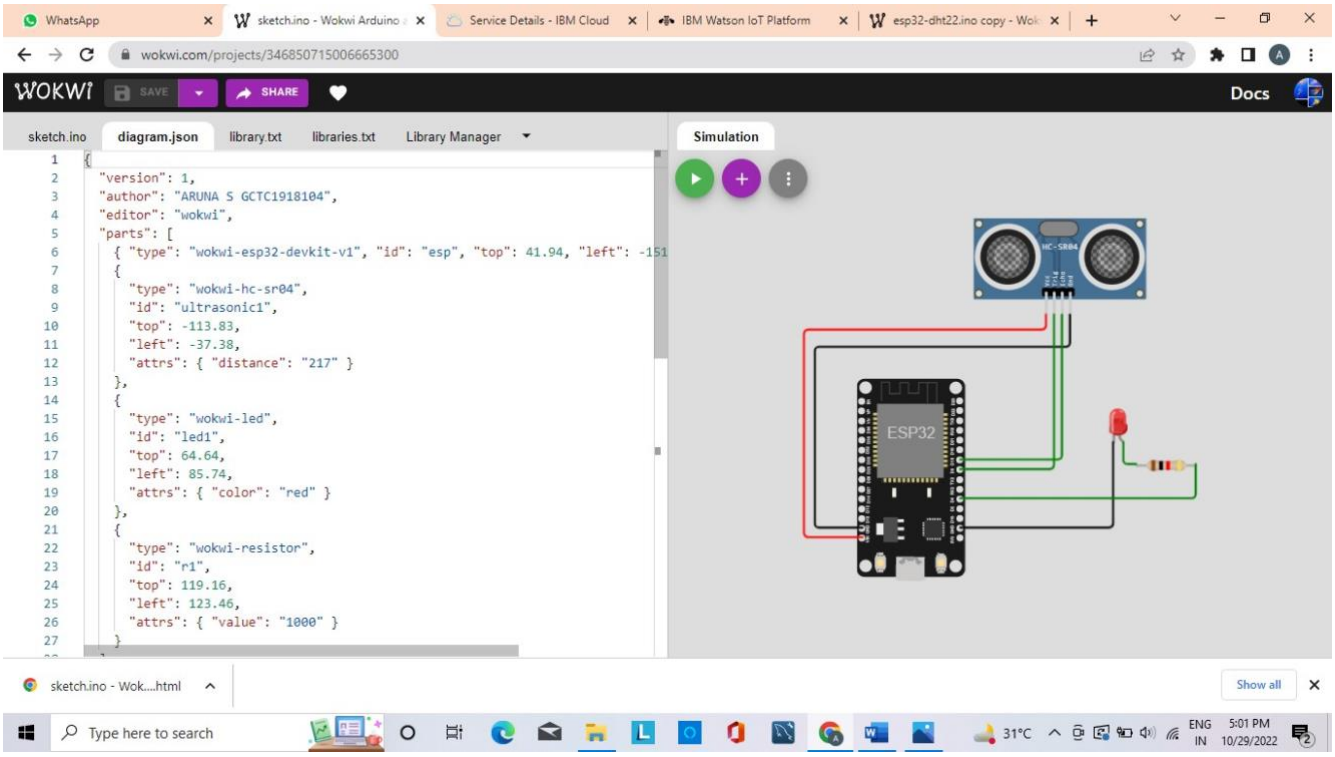
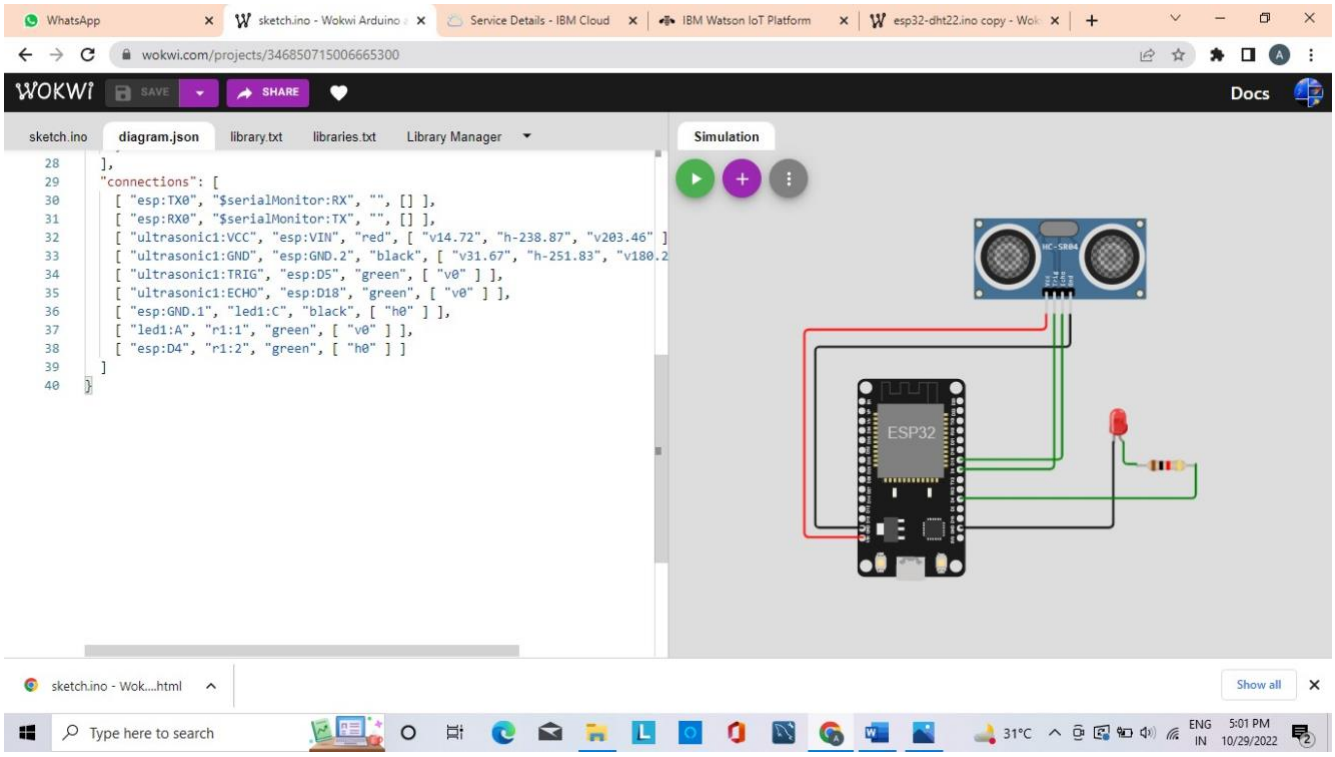
IN
5:01 PM
10/29/2022




```
}
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)
{
 Serial.print("callback invoked for topic: ");
  Serial.println(subscribetopic);
  for (int i = 0; i < payloadLength; i++) {
    //Serial.print((char)payload[i]);
   // data3 += (char)payload[i];
  }
 // Serial.println("data: "+ data3);
  //if(data3=="lighton")
  {
//Serial.println(data3);
  digitalWrite(LED,HIGH);
  }
  //else
  {
//Serial.println(data3);
digitalWrite(LED,LOW);
```




```
{
  "version": 1,
  "author": "ARUNA S GCTC1918104",
  "editor": "wokwi",
  "parts": [
    { "type": "wokwi-esp32-devkit-v1", "id": "esp", "top": 41.94, "left": -151
    {
      "type": "wokwi-hc-sr04",
      "id": "ultrasonic1",
      "top": -113.83,
      "left": -37.38,
      "attrs": { "distance": "217" }
    },
    {
      "type": "wokwi-led",
      "id": "led1",
      "top": 64.64,
      "left": 85.74,
      "attrs": { "color": "red" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r1",
      "top": 119.16,
      "left": 123.46,
      "attrs": { "value": "1000" }
    }
```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Library Manager
28],
29 "connections": [
30 ["esp:TX0", "$serialMonitor:RX", "", []],
31 ["esp:RX0", "$serialMonitor:TX", "", []],
32 ["ultrasonic1:VCC", "esp:VIN", "red", ["v14.72", "h-238.87", "v203.46"]
33 ["ultrasonic1:GND", "esp:GND.2", "black", ["v31.67", "h-251.83", "v180.2
34 ["ultrasonic1:TRIG", "esp:D5", "green", ["v0"]],
35 ["ultrasonic1:ECHO", "esp:D18", "green", ["v0"]],
36 ["esp:GND.1", "led1:C", "black", ["h0"]],
37 ["led1:A", "r1:1", "green", ["v0"]],
38 ["esp:D4", "r1:2", "green", ["h0"]]
39]
40 }
Simulation
HC-SR04
ESP32
sketch.ino - Wok....html
Show all
Type here to search
31°C
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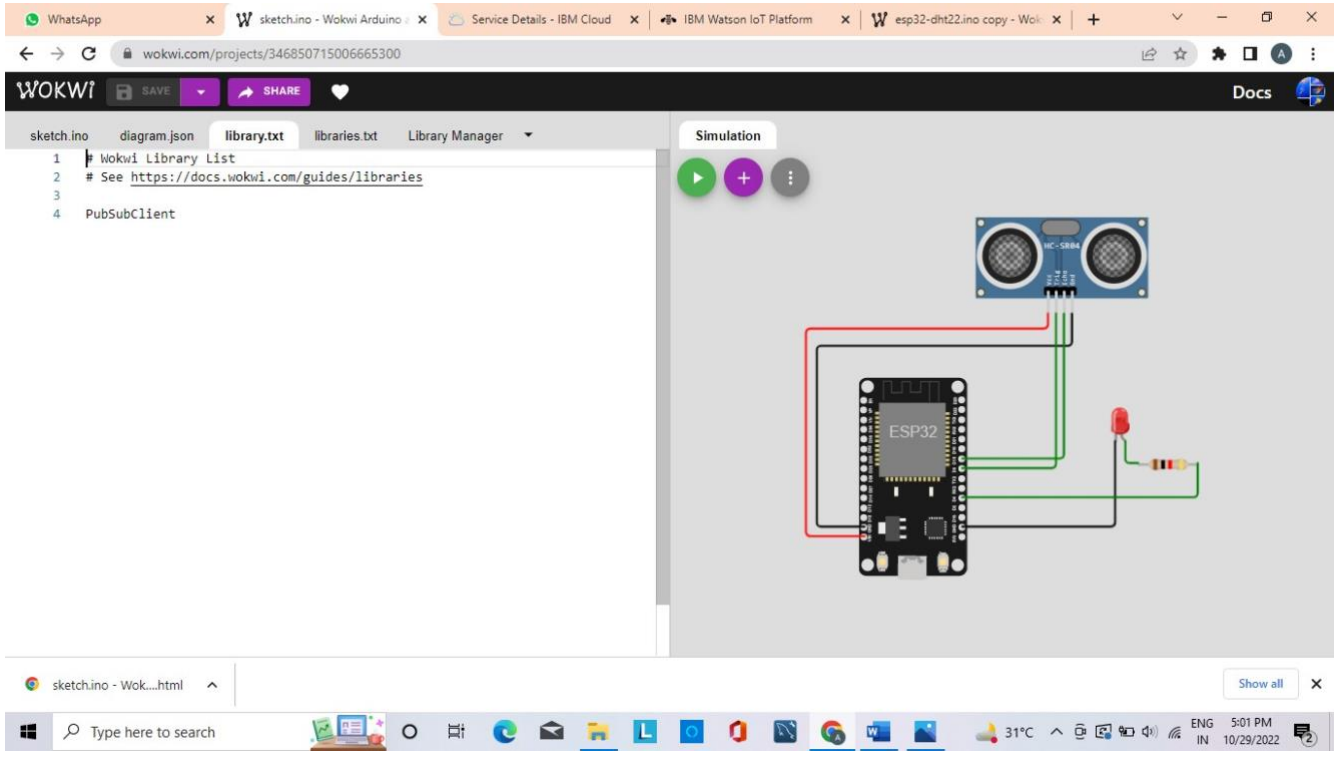
IN
5:01 PM
10/29/2022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SAVE
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Docs
sketch.ino
diagram.json
library.txt
libraries.txt
Library Manager
1 # Wokwi Library List
2 # See https://docs.wokwi.com/guides/libraries
3
4 PubSubClient
Simulation
HC-SR04
ESP32
sketch.ino - Wok....html
Show all
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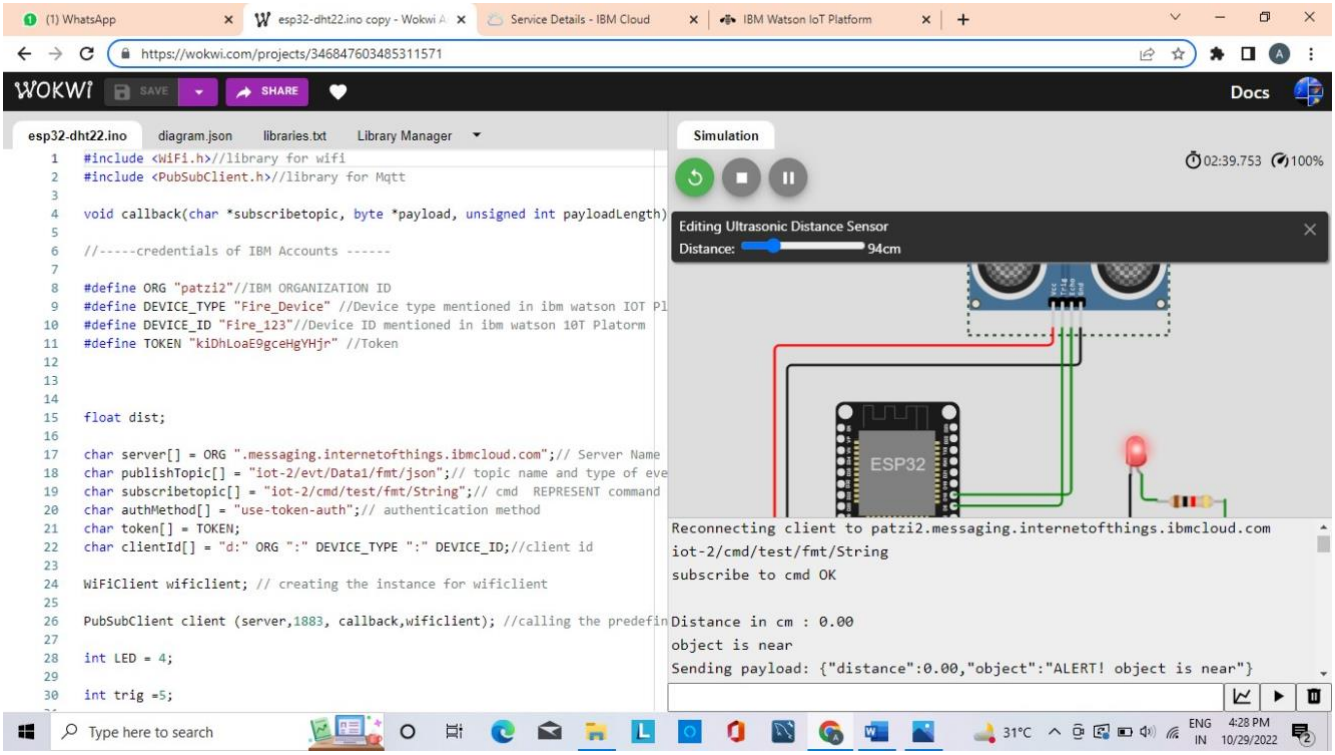
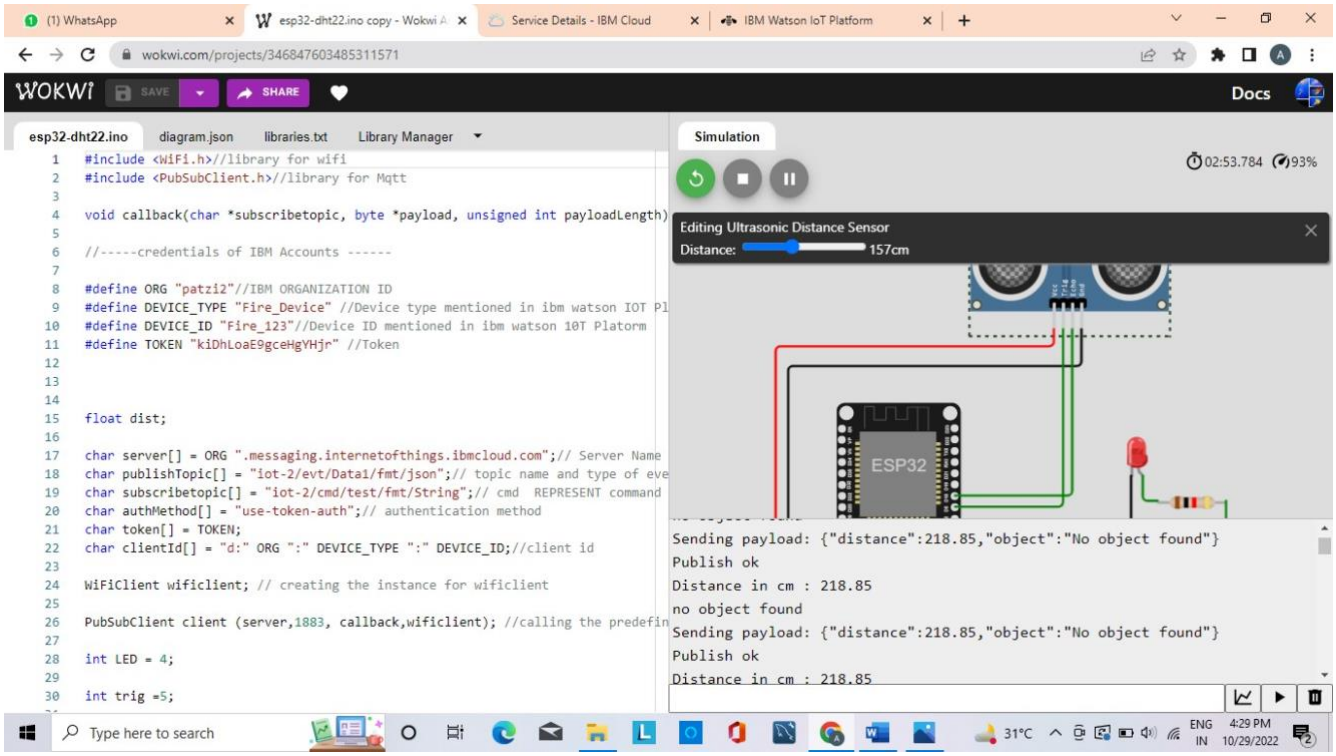
OUTPUT:

When the distance is less than 100 cms, send an “alert” message to IBM Watson IOT Platform.



IBM CLOUD IMAGE

When the object is far (greater than 100 cms), send “no object found” to the IBM Watson IOT Platform.



IBM CLOUD IMAGE