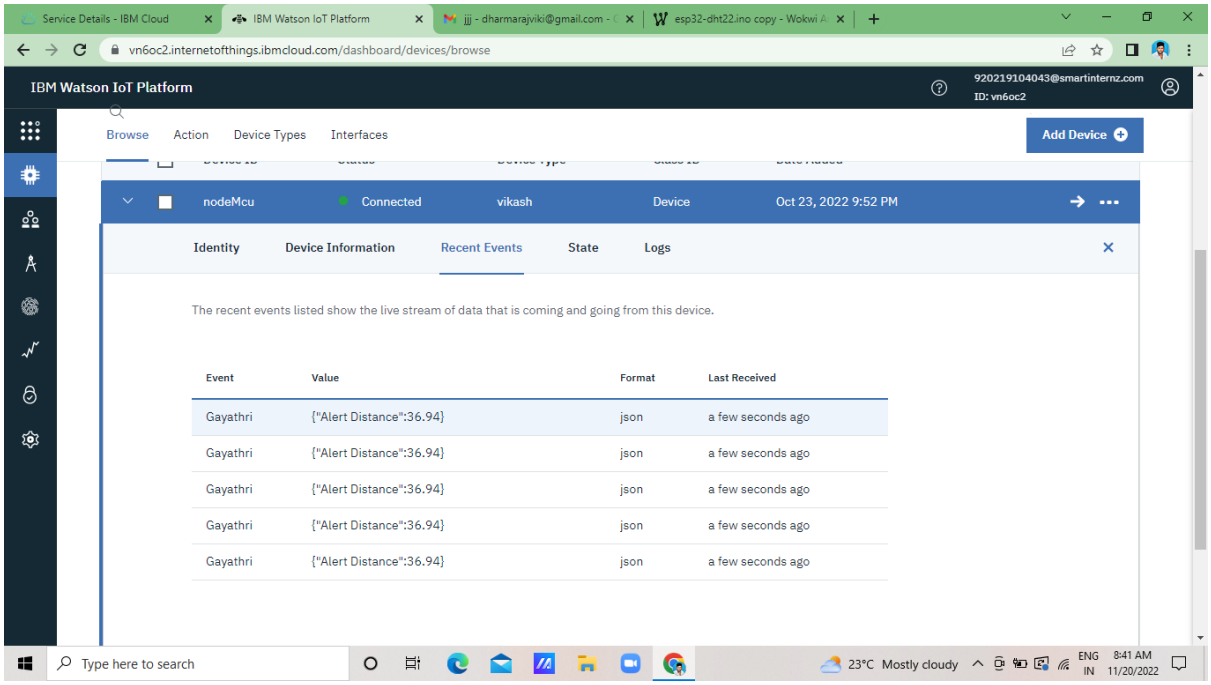
SMARTWASRE MANAGEMENT SYSTEM FOR METRO CITIES
TEAM ID:PNT2022TMID48488
IBM-Project-35221-1660282887

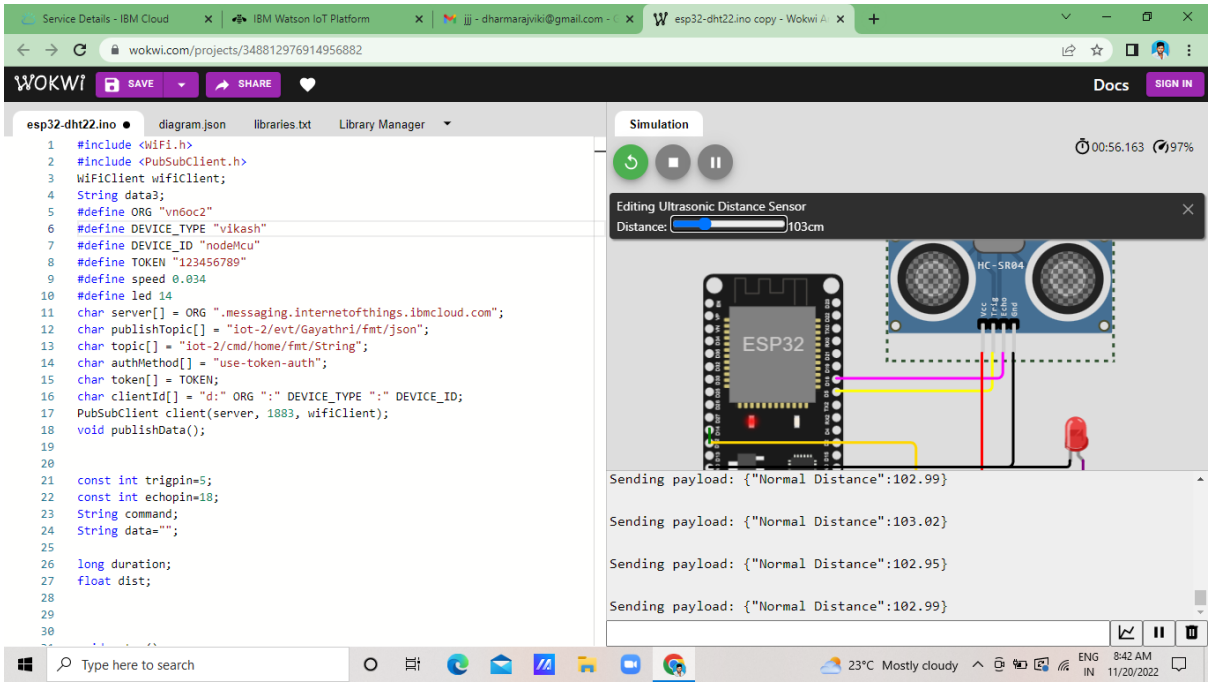
output code:

```
#include <WiFi.h>
#include <PubSubClient.h>
WiFiClient wifiClient;
String data3;
#define ORG "vn6oc2"
#define DEVICE_TYPE "vikash"
#define DEVICE_ID "nodeMcu"
#define TOKEN "123456789"
#define speed 0.034
#define led 14
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[] = "iot-2/evt/Gayathri/fmt/json";
char topic[] = "iot-2/cmd/home/fmt/String";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
PubSubClient client(server, 1883, wifiClient);
void publishData();


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("Warning crosses 110cm -- it automaticaly of the
loop");
      digitalWrite(led,HIGH);
    }

  }
    if(dist>101 && dist<111){
    String payload = "{\"Normal Distance\":";
```

```
    payload += dist;
    payload += "}";

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

    }

  }



  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++){
    dist += (char)payload[i];
  }
  Serial.println("data:"+ data3);
  if(data3=="lighton"){
    Serial.println(data3);
    digitalWrite(led,HIGH);
  }
  data3="";
}
```


Service Details - IBM Cloud
IBM Watson IoT Platform
vn6oc2.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
920219104043@smartinternz.com
ID: vn6oc2
Browse
Action
Device Types
Interfaces
Add Device
nodeMcu
Connected
vikash
Device
Oct 23, 2022 9:52 PM
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
Gayathri
{"Alert Distance":36.94}
json
a few seconds ago
Type here to search
23°C Mostly cloudy
ENG IN
8:41 AM
11/20/2022


wokwi.com/projects/348812976914956882
WOKWI
SAVE
SHARE
Docs
SIGN IN
esp32-dht22.ino
diagram.json
libraries.txt
Library Manager
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String data="";
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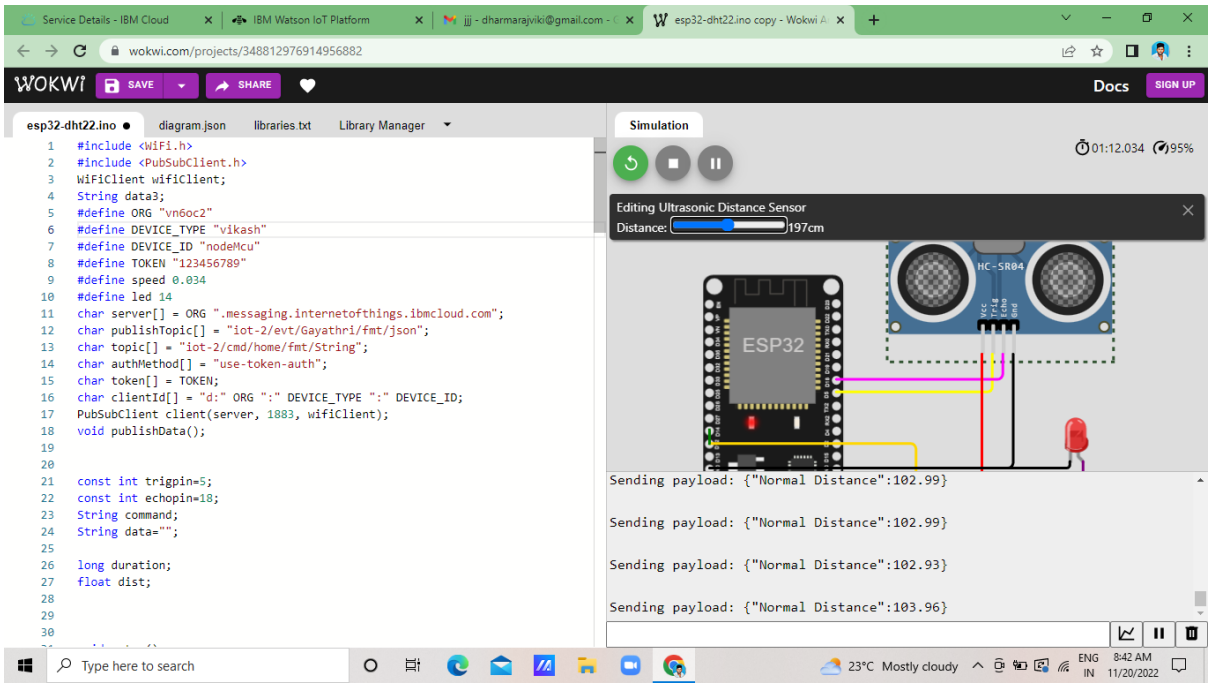
float dist;
Simulation
00:56.163
97%
Editing Ultrasonic Distance Sensor
Distance:
103cm
HC-SR04
ESP32
Sending payload: {"Normal Distance":102.99}
Sending payload: {"Normal Distance":103.02}
Sending payload: {"Normal Distance":102.95}
Sending payload: {"Normal Distance":102.99}
Type here to search
23°C Mostly cloudy
ENG IN
8:42 AM
11/20/2022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esp32-dht22.ino copy - Wokwi
wokwi.com/projects/348812976914956882
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01:12.034
95%
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Distance:
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ESP32
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11/20/2022