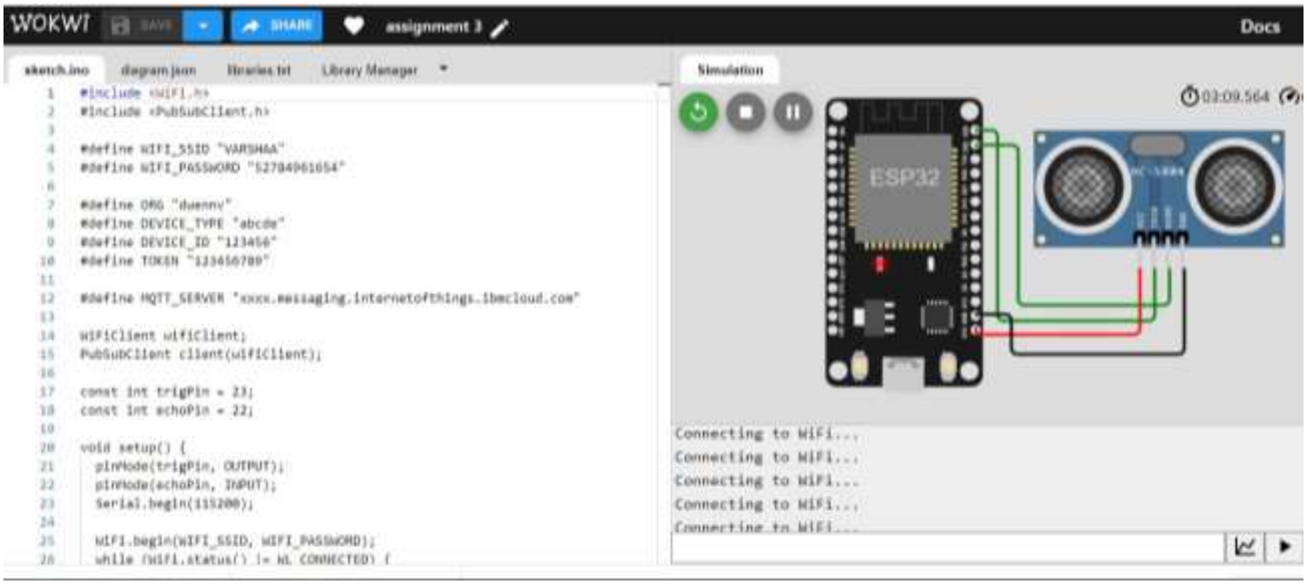
ASSIGNMENT 3

Build a wokwi product, use ultrasonic sensor and detect the Distance from the object.
Whenever distance is less than 100cms upload the value to the ibm cloud.in recent device events upload the data from wokwi

Vijayalakshmi B
Group 5

CONNECTIONS :



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

#define WIFI_SSID "VARSHAA"
#define WIFI_PASSWORD "52784961654"

#define ORG "duenny"
#define DEVICE_TYPE "abcde"
#define DEVICE_ID "123456"
#define TOKEN "123456789"

#define MQTT_SERVER "xxxx.messaging.internetofthings.ibmcloud.com"

WiFiClient wifiClient;
PubSubClient client(wifiClient);

const int trigPin = 23;
const int echoPin = 22;

void setup() {
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  Serial.begin(115200);

  WiFi.begin(WIFI_SSID, WIFI_PASSWORD);
  while (WiFi.status() != WL_CONNECTED) {
```

```
Connecting to WiFi...
Connecting to WiFi...
Connecting to WiFi...
Connecting to WiFi...
Connecting to WiFi...
```

WOKWI LINK :

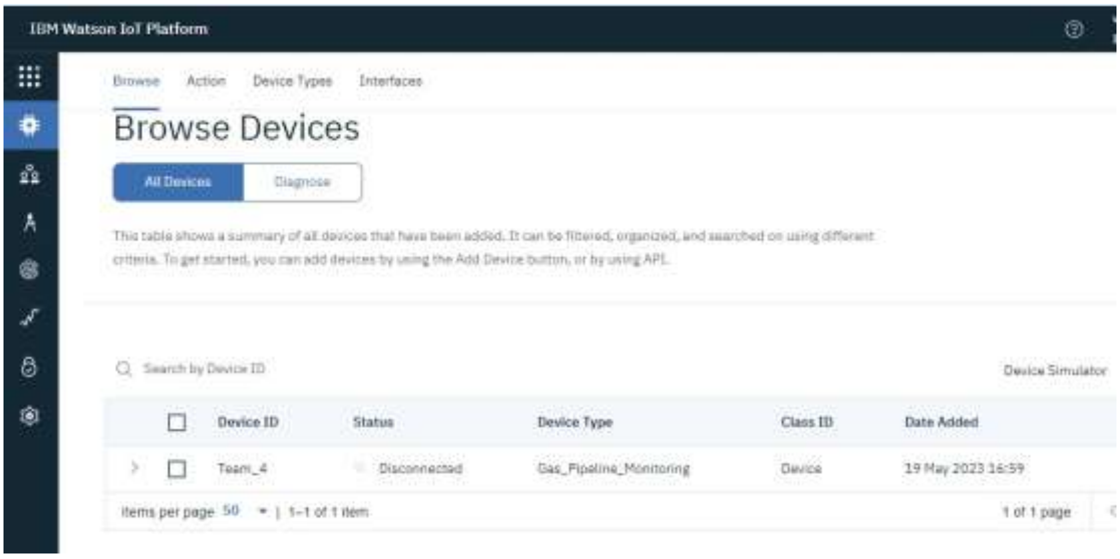
https://wokwi.com/projects/new/esp32

PROGRAM

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

#define WIFI_SSID "VIJAYALAKSHMI"
#define WIFI_PASSWORD "52784961654"

#define ORG "dwennv"
#define DEVICE_TYPE "abcde"
#define DEVICE_ID "123456"
#define TOKEN "123456789"

#define MQTT_SERVER "xxxx.messaging.internetofthings.ibmcloud.com"

WiFiClient wifiClient;
PubSubClient client(wifiClient);

const int trigPin = 23;
const int echoPin = 22;

void setup() {
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  Serial.begin(115200);

  WiFi.begin(WIFI_SSID, WIFI_PASSWORD);
  while (WiFi.status() != WL_CONNECTED) {
  delay(1000);
    Serial.println("Connecting to WiFi...");
  }

  client.setServer(MQTT_SERVER, 1883);
client.setCallback(callback); }
```

```
void loop() { long duration,
  distance; digitalWrite(trigPin,
  LOW); delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);
  duration = pulseIn(echoPin, HIGH);
  distance = duration * 0.034 / 2;
  Serial.print("Distance: ");
  Serial.print(distance);
  Serial.println(" cm");
  if(distance < 100) {
  publishMessage(distance);
  }
  client.loop();
  delay(500);
}

void callback(char* topic, byte* payload, unsigned int length) {
  // Handle callback function here
}

void publishMessage(long distance) {
  String payload = "{\"distance\": " + String(distance) + "}";
  char topic[100];
  sprintf(topic, "iot-2/evt/status/fmt/json");
  client.connect(DEVICE_ID, TOKEN, "");
  client.publish(topic, (char*) payload.c_str());
  client.disconnect();
}
```

IBM CLOUD



Browse Devices

This table shows a summary of all devices that have been added. It can be filtered, organized, and searched on using different criteria. To get started, you can add devices by using the Add Device button, or by using API.

Device ID	Status	Device Type	Class ID	Date Added
Team_4	Disconnected	Gas_Pipeline_Monitoring	Device	19 May 2023 16:59

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