ASSIGNMENT 4

PROBLEM STATEMENT:
Iot-Based Smart Crop Protection System for Agriculture

DOMAIN:
Internet of Things

Assignment 4:

Write code and connections in wokwi for ultrasonic sensor. Whenever distance is less than 100cm and send "alert" to ibm cloud and display in device recent events.
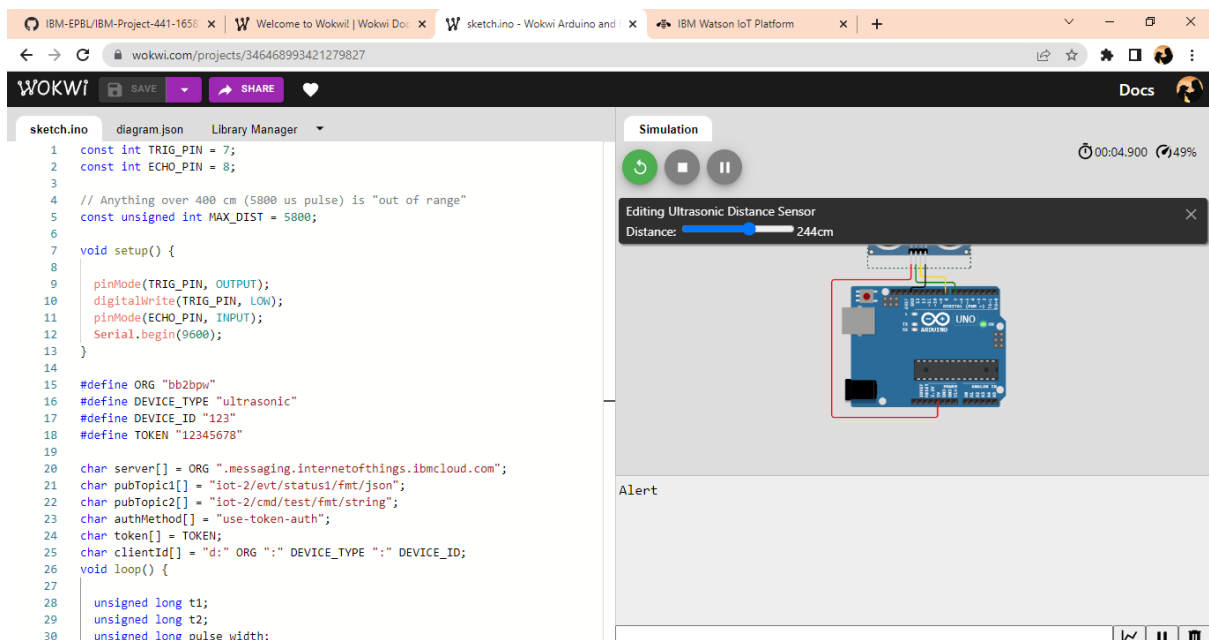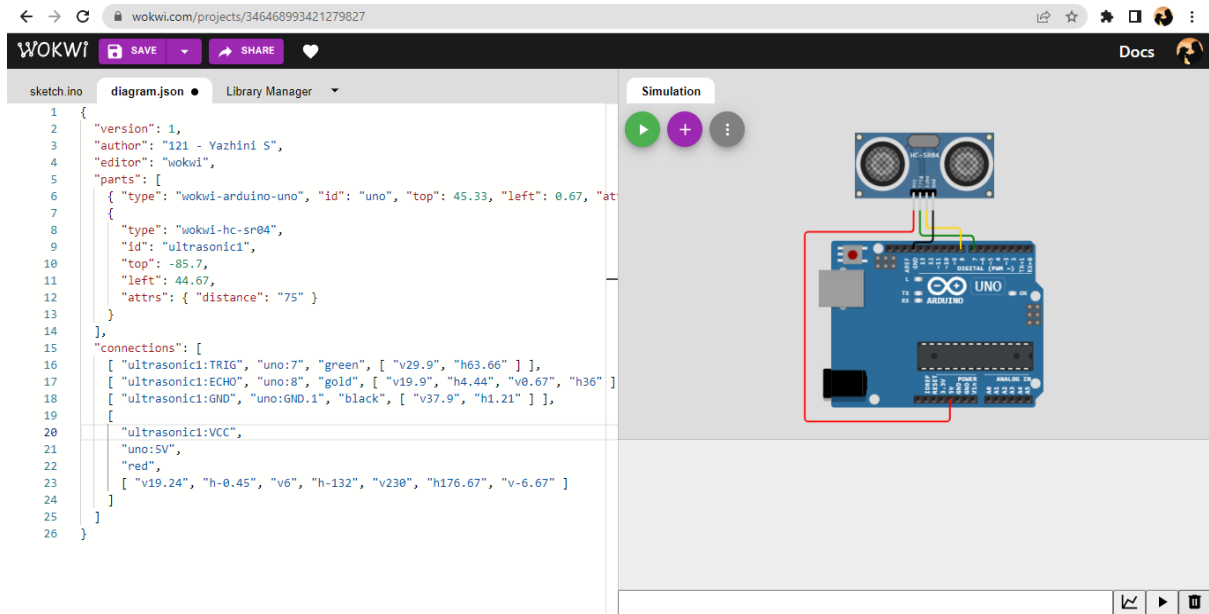
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WOKWI LINK :

https://wokwi.com/projects/346468993421279827

sketch.ino | diagram.json | Library Manager

```
1   const int TRIG_PIN = 7;
2   const int ECHO_PIN = 8;
3
4   // Anything over 400 cm (5800 us pulse) is "out of range"
5   const unsigned int MAX_DIST = 5800;
6
7   void setup() {
8
9     pinMode(TRIG_PIN, OUTPUT);
10    digitalWrite(TRIG_PIN, LOW);
11    pinMode(ECHO_PIN, INPUT);
12    Serial.begin(9600);
13  }
14
15  #define ORG "bb2bpw"
16  #define DEVICE_TYPE "ultrasonic"
17  #define DEVICE_ID "123"
18  #define TOKEN "12345678"
19
20  char server[] = ORG ".messaging.internetofthings.ibmcloud.com";
21  char pubTopic1[] = "iot-2/evt/status1/fmt/json";
22  char pubTopic2[] = "iot-2/cmd/test/fmt/string";
23  char authMethod[] = "use-token-auth";
24  char token[] = TOKEN;
25  char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;
26  void loop() {
27
28    unsigned long t1;
29    unsigned long t2;
30    unsigned long pulse_width;
```

Editing Ultrasonic Distance Sensor
Distance: 75cm

Alert
Alert
76.07 cm

IBM CLOUD:

IBM Watson IoT Platform

Browse | Action | Device Types | Interfaces

Add Device

Search by Device ID

Device Simulator

		Device ID	Status	Device Type	Class ID	Date Added
∨	☐	123	⬚ Disconnected	ultrasonic	Device	Oct 25, 2022 11:32 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
event_1	{"dist":286,"message":"alert"}	json	a few seconds ago
event_1	{"dist":89,"message":"in range"}	json	a minute ago
event_1	{"dist":78,"message":"in range"}	json	a minute ago