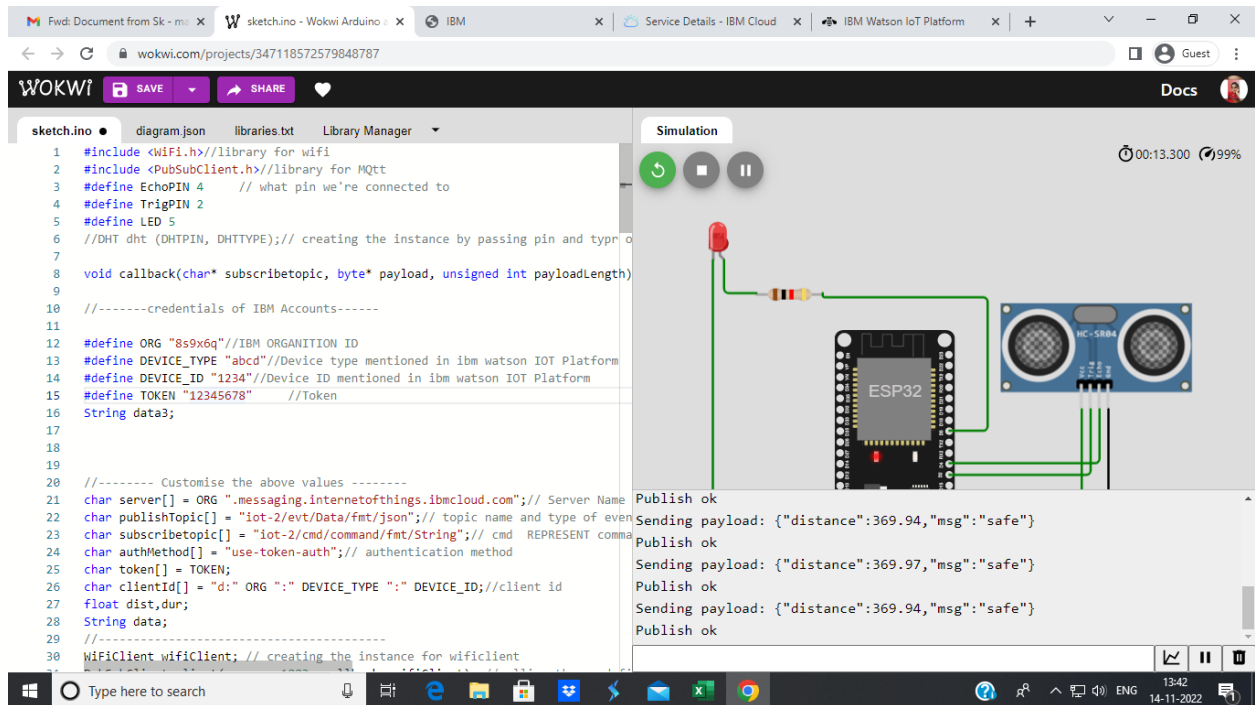


## ASSIGNMENT 4

### IOT BASED SMART CROP PROTECTION SYSTEM FOR AGRICULTURE

Wowki Link: <https://wokwi.com/projects/347118572579848787>

Distance when greater than 100cm-no alert sent to IBM CLOUD

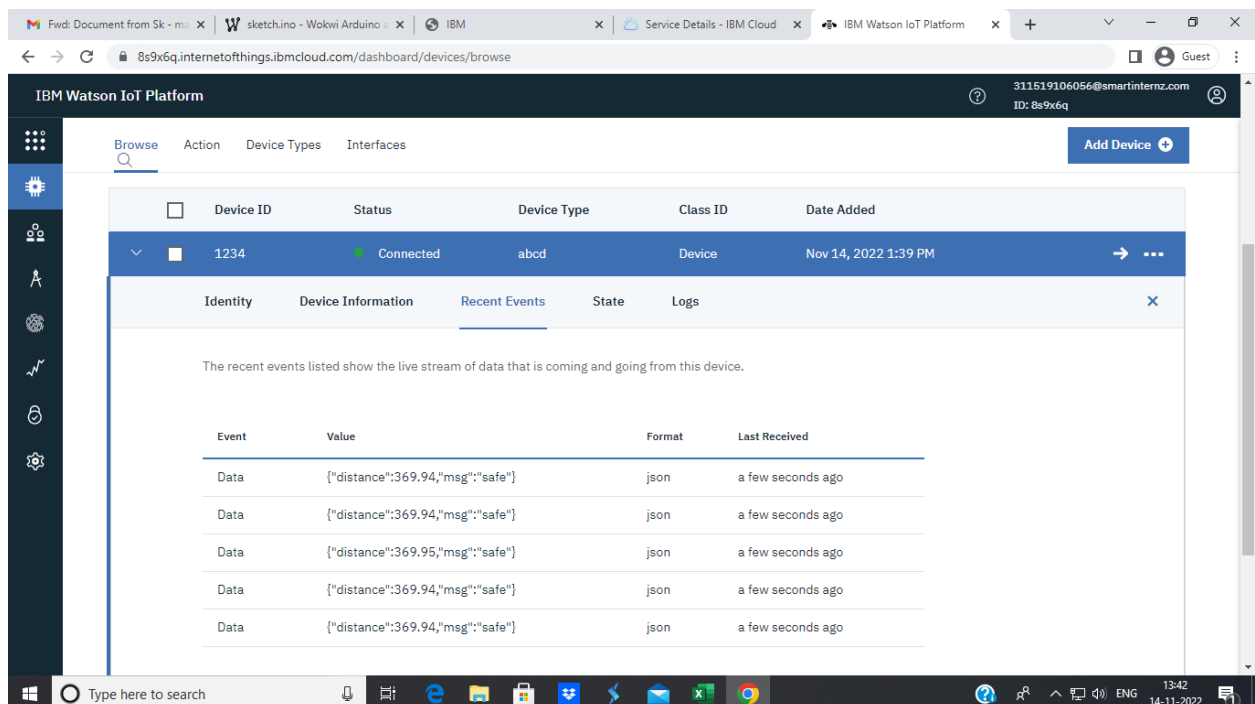


```
1 #include <WiFi.h> //library for wifi
2 #include <PubSubClient.h> //library for MQTT
3 #define EchoPIN 4 // what pin we're connected to
4 #define TrigPIN 2
5 #define LED 5
6 //DHT dht (DHTPIN, DHTTYPE); // creating the instance by passing pin and type
7
8 void callback(char* topic, byte* payload, unsigned int payloadLength)
9
10 //-----credentials of IBM Accounts-----
11
12 #define ORG "8s9x6q" //IBM ORGANIZATION ID
13 #define DEVICE_TYPE "abcd" //Device type mentioned in IBM Watson IoT Platform
14 #define DEVICE_ID "1234" //Device ID mentioned in IBM Watson IoT Platform
15 #define TOKEN "12345678" //Token
16 String data3;
17
18 //----- Customise the above values -----
19
20 char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; // Server Name
21 char publishTopic[] = "iot-2/evt/Data/fmt/json"; // topic name and type of event
22 char subscribeTopic[] = "iot-2/cmd/command/fmt/String"; // cmd REPRESENT command
23 char authMethod[] = "use-token-auth"; // authentication method
24 char token[] = TOKEN;
25 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID; //client id
26 float dist,dur;
27 String data;
28 //-----
29 WiFiClient wifiClient; // creating the instance for wifi client
30
```

Simulation

00:13.300 99%

Publish ok  
Sending payload: {"distance":369.94,"msg":"safe"}  
Publish ok  
Sending payload: {"distance":369.97,"msg":"safe"}  
Publish ok  
Sending payload: {"distance":369.94,"msg":"safe"}  
Publish ok



IBM Watson IoT Platform

311519106056@smartinternz.com  
ID: 8s9x6q

Browse Action Device Types Interfaces

Add Device

Device ID	Status	Device Type	Class ID	Date Added
1234	Connected	abcd	Device	Nov 14, 2022 1:39 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
Data	{"distance":369.94,"msg":"safe"}	json	a few seconds ago
Data	{"distance":369.94,"msg":"safe"}	json	a few seconds ago
Data	{"distance":369.95,"msg":"safe"}	json	a few seconds ago
Data	{"distance":369.94,"msg":"safe"}	json	a few seconds ago
Data	{"distance":369.94,"msg":"safe"}	json	a few seconds ago

## Distance when less than 100cm-no alert sent to IBM CLOUD

WOKWI

sketch.ino

```
1 #include <WiFi.h> //library for wifi
2 #include <PubSubClient.h> //library for MQTT
3 #define EchoPIN 4 // what pin we're connected to
4 #define TrigPIN 2
5 #define LED 5
6 //DHT dht (DHTPIN, DHTTYPE); // creating the instance by passing pin and type
7
8 void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)
9
10 //-----credentials of IBM Accounts-----
11
12 #define ORG "8s9x6q" //IBM ORGANITION ID
13 #define DEVICE_TYPE "abcd" //Device type mentioned in ibm watson IOT Platform
14 #define DEVICE_ID "1234" //Device ID mentioned in ibm watson IOT Platform
15 #define TOKEN "12345678" //Token
16 String data3;
17
18
19
20 //----- Customise the above values -----
21 char server[] = ORG ".messaging.internetofthings.ibmcloud.com"; // Server Name
22 char publishTopic[] = "iot-2/evt/Data/fmt/json"; // topic name and type of event
23 char subscribetopic[] = "iot-2/cmd/command/fmt/String"; // cmd REPRESENT comm
24 char authMethod[] = "use-token-auth"; // authentication method
25 char token[] = TOKEN;
26 char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID; //client id
27 float dist,dur;
28 String data;
29 //-----
30 WiFiClient wifiClient; // creating the instance for wifiClient
```

Simulation

00:07.833 99%

Editing Ultrasonic Distance Sensor

Distance: 34cm

Publish ok

Sending payload: {"distance":33.98,"msg":"alert"}

Publish ok

Sending payload: {"distance":33.98,"msg":"alert"}

Publish ok

Sending payload: {"distance":33.98,"msg":"alert"}

Publish ok

IBM Watson IoT Platform

311519106056@smartinternz.com  
ID: 8s9x6q

Browse Action Device Types Interfaces

Add Device

Device ID	Status	Device Type	Class ID	Date Added
1234	Connected	abcd	Device	Nov 14, 2022 1:39 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
Data	{"distance":33.98,"msg":"alert"}	json	a few seconds ago
Data	{"distance":33.98,"msg":"alert"}	json	a few seconds ago
Data	{"distance":33.98,"msg":"alert"}	json	a few seconds ago
Data	{"distance":33.98,"msg":"alert"}	json	a few seconds ago
Data	{"distance":33.98,"msg":"alert"}	json	a few seconds ago