Assignment- 4

Assignment Date	22 October 2022
Student Name	Akshaya M
Student Roll Number	211419106022
Maximum Marks	2 Marks

Question:

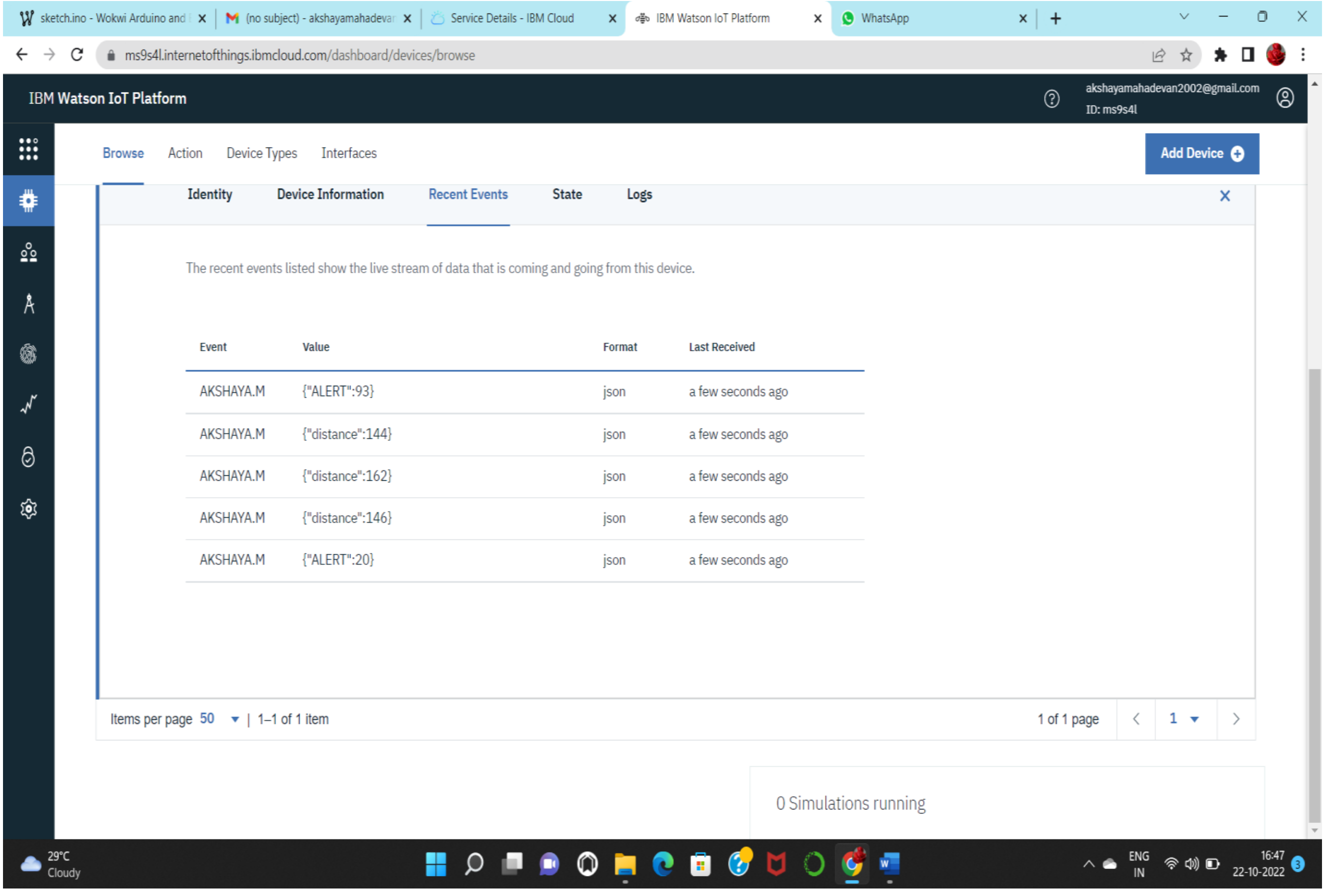
1. **Write code and connections in wokwi for ultrasonic sensor. Whenever distance is less than 100 cms send "alert" to ibm cloud and display in device recent events.**

Solution:

WOKWI SHARE LINK:

https://wokwi.com/projects/346214114771599955

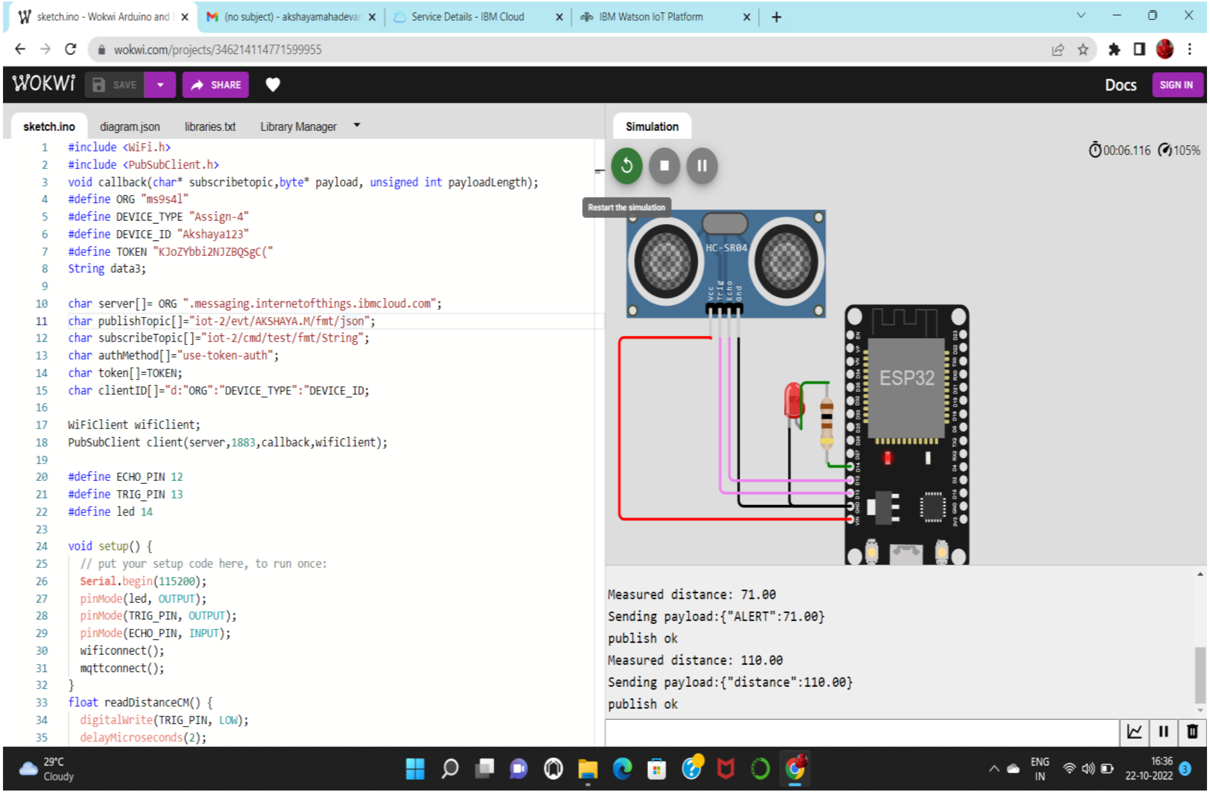
IMAGE OF IBM CLOUD:


sketch.ino - Wokwi Arduino and
(no subject) - akshayamahadevan
Service Details - IBM Cloud
IBM Watson IoT Platform
WhatsApp
ms9s4l.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
akshayamahadevan2002@gmail.com
ID: ms9s4l
Browse
Action
Device Types
Interfaces
Add Device
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.

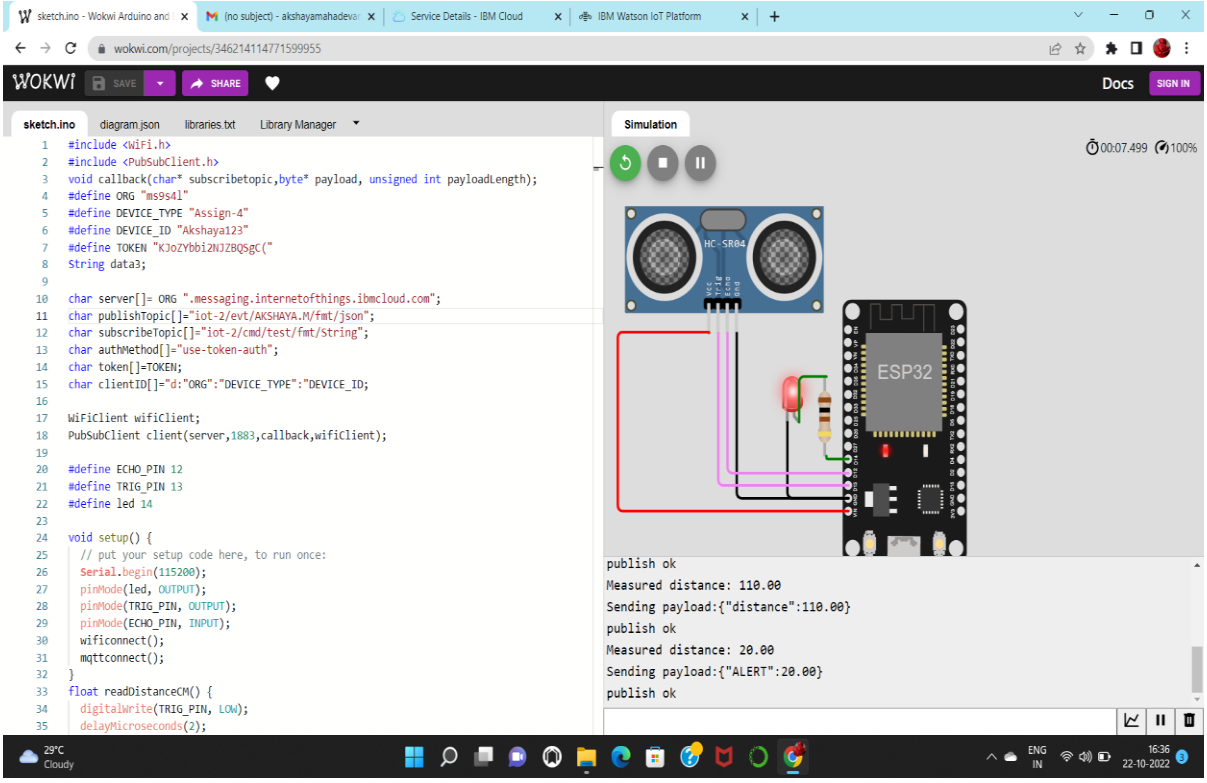
Event	Value	Format	Last Received
AKSHAYA.M	{"ALERT":93}	json	a few seconds ago
AKSHAYA.M	{"distance":144}	json	a few seconds ago
AKSHAYA.M	{"distance":162}	json	a few seconds ago
AKSHAYA.M	{"distance":146}	json	a few seconds ago
AKSHAYA.M	{"ALERT":20}	json	a few seconds ago

SIMULATION IMAGE:



```
#include <WiFi.h>
#include <PubSubClient.h>
void callback(char* subscribetopic,byte* payload, unsigned int payloadLength);
#define ORG "ms9s4l"
#define DEVICE_TYPE "Assign-4"
#define DEVICE_ID "Akshaya123"
#define TOKEN "KJoZYbbi2NJZBQSgC("
String data3;

char server[]= ORG ".messaging.internetofthings.ibmcloud.com";
char publishTopic[]="iot-2/evt/AKSHAYA.M/fmt/json";
char subscribeTopic[]="iot-2/cmd/test/fmt/String";
char authMethod[]="use-token-auth";
char token[]=TOKEN;
char clientID[]="d:"ORG":"DEVICE_TYPE":"DEVICE_ID;

WiFiClient wifiClient;
PubSubClient client(server,1883,callback,wifiClient);

#define ECHO_PIN 12
#define TRIG_PIN 13
#define led 14

void setup() {
  // put your setup code here, to run once:
  Serial.begin(115200);
  pinMode(led, OUTPUT);
  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
  wificonnect();
  mqttconnect();
}
float readDistanceCM() {
  digitalWrite(TRIG_PIN, LOW);
  delayMicroseconds(2);
```

```
Measured distance: 71.00
Sending payload:{"ALERT":71.00}
publish ok
Measured distance: 110.00
Sending payload:{"distance":110.00}
publish ok
```



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```
publish ok
Measured distance: 110.00
Sending payload:{"distance":110.00}
publish ok
Measured distance: 20.00
Sending payload:{"ALERT":20.00}
publish ok
```