Assignment -4

Assignment Date	08 NOVEMBER 2022
Student Name	DURGESAM VIJAY
Student Roll Number	111519106031
Maximum Marks	2 Marks

Assignment 4:

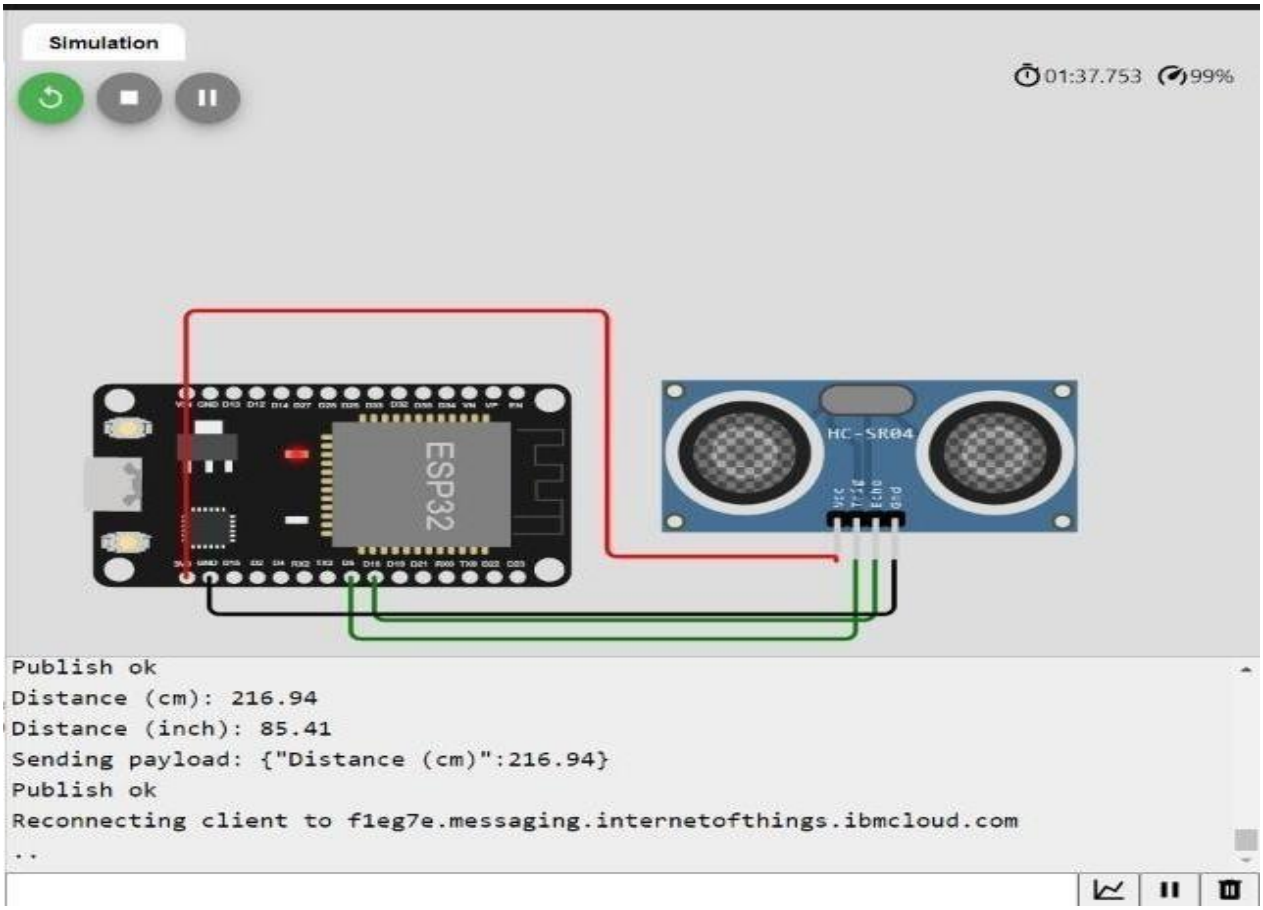
Write code and connections in wokwi for the ultrasonic sensor. Whenever the distance is less than 100 cms send an "alert" to the IBM cloud and display in the device recent events. Upload document with wokwi share link and images of IBM cloud.

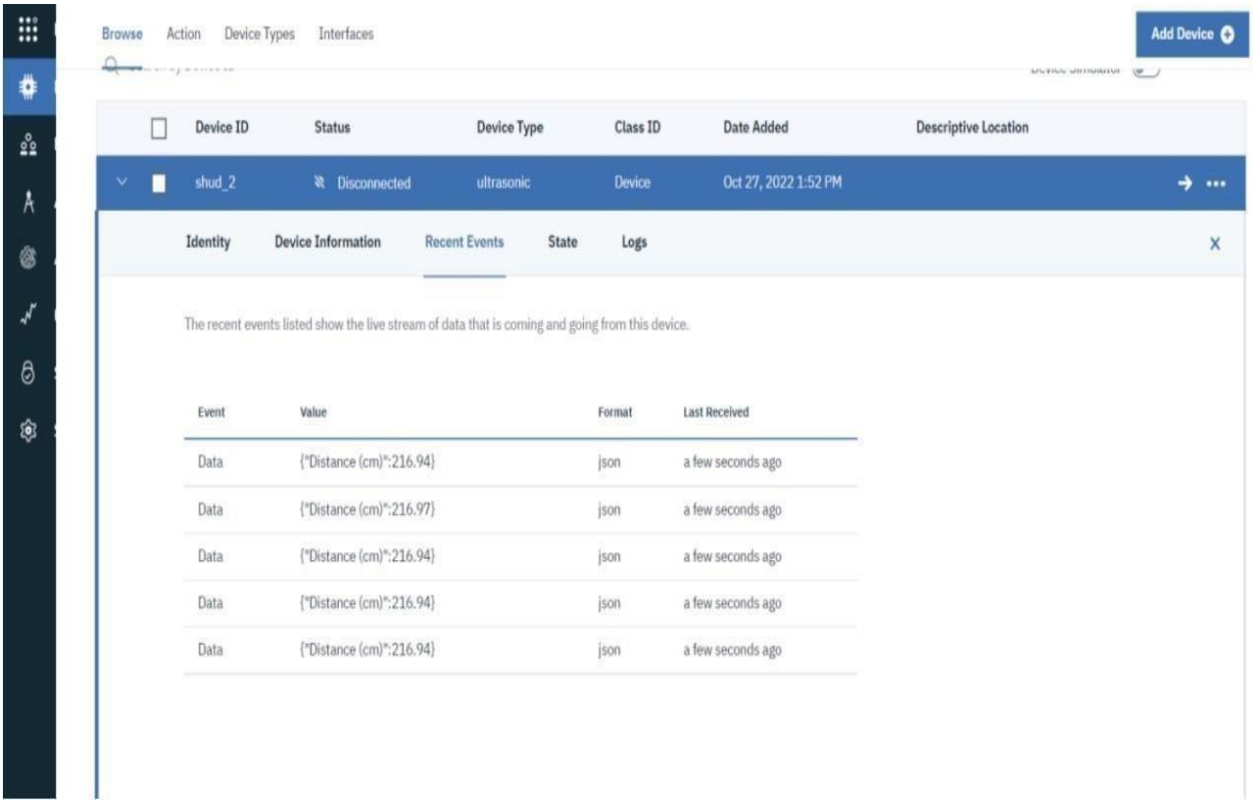
Solution:

CODE:

esp32-blink.lno | diagram.json | libraries.txt | Library Manager

```
#include <WiFi.h>
#include <WiFiClient.h>
#include <PubSubClient.h>
const int trigPin = 5;
const int echoPin = 18;
//define sound speed in cm/uS
#define SOUND_SPEED 0.034
#define CM_TO_INCH 0.393701
long duration;
float distanceCm;
float distanceInch;


void callback(char* subscribetopic, byte* payload, unsigned  int payloadLength);
 //-------credentials of IBM Accounts------

#define ORG "f1eg7e"//IBM ORGANITION ID
#define DEVICE_TYPE "ultrasonic"//Device type mentioned in ibm watson IOT Platform
#define DEVICE_ID "shud_2"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "CVzAx!fQuG7sa_?WKz"     //Token
String data3;



//-------- Customise the above values --------
char server[] = ORG ".messaging.internetofthings.ibmcloud.com";// Server Name
char publishTopic[] = "iot-2/evt/Data/fmt/json";// topic name and type of event perform a
char subscribetopic[] = "iot-2/cmd/test/fmt/String";// cmd  REPRESENT command type AND CO
char authMethod[] = "use-token-auth";// authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id

WiFiClient wifiClient; // creating the instance for wificlient
PubSubClient client(server, 1883, callback ,wifiClient);

```


Simulation
01:37.753
99%
ESP32
HC-SR04
Publish ok
Distance (cm): 216.94
Distance (inch): 85.41
Sending payload: {"Distance (cm)":216.94}
Publish ok
Reconnecting client to f1eg7e.messaging.internetofthings.ibmcloud.com
..


Browse
Action
Device Types
Interfaces
Add Device
Device ID
Status
Device Type
Class ID
Date Added
Descriptive Location
shud_2
Disconnected
ultrasonic
Device
Oct 27, 2022 1:52 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
Data
{"Distance (cm)":216.94}
json
a few seconds ago
Data
{"Distance (cm)":216.97}
json
a few seconds ago
Data
{"Distance (cm)":216.94}
json
a few seconds ago
Data
{"Distance (cm)":216.94}
json
a few seconds ago
Data
{"Distance (cm)":216.94}
json
a few seconds ago