Assignment -4

Simulation In Wokwi

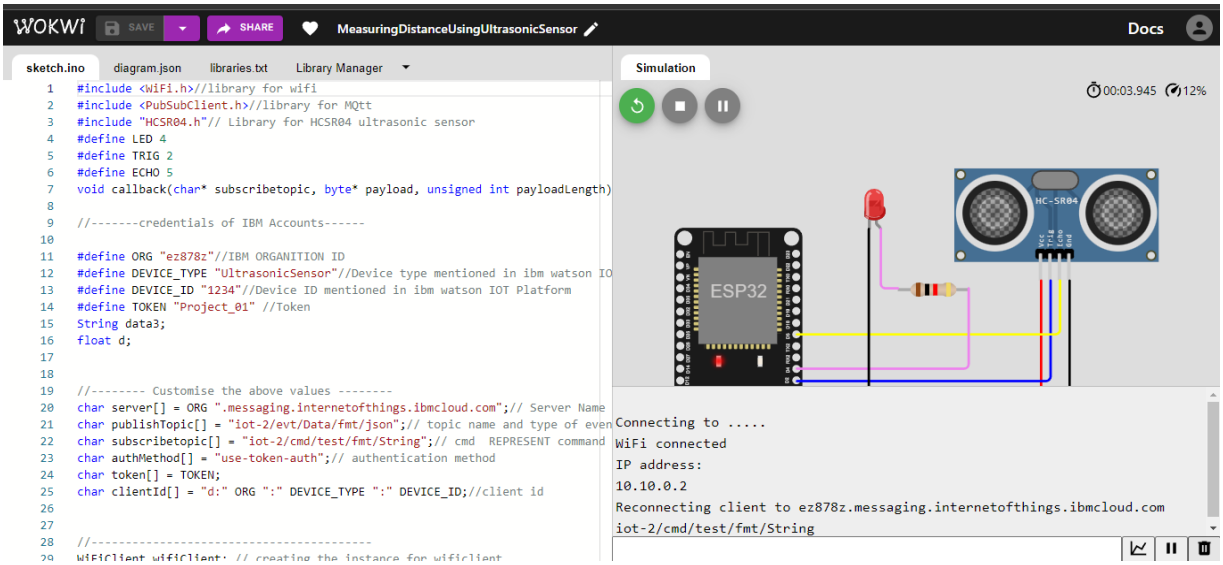
Assignment Date	27 October 2022
Student Name	Sagili Venkata Pavan Reddy
Team ID	PNT2022TMID54276
Student Roll Number	711519BEC089
Maximum Marks	2 Marks

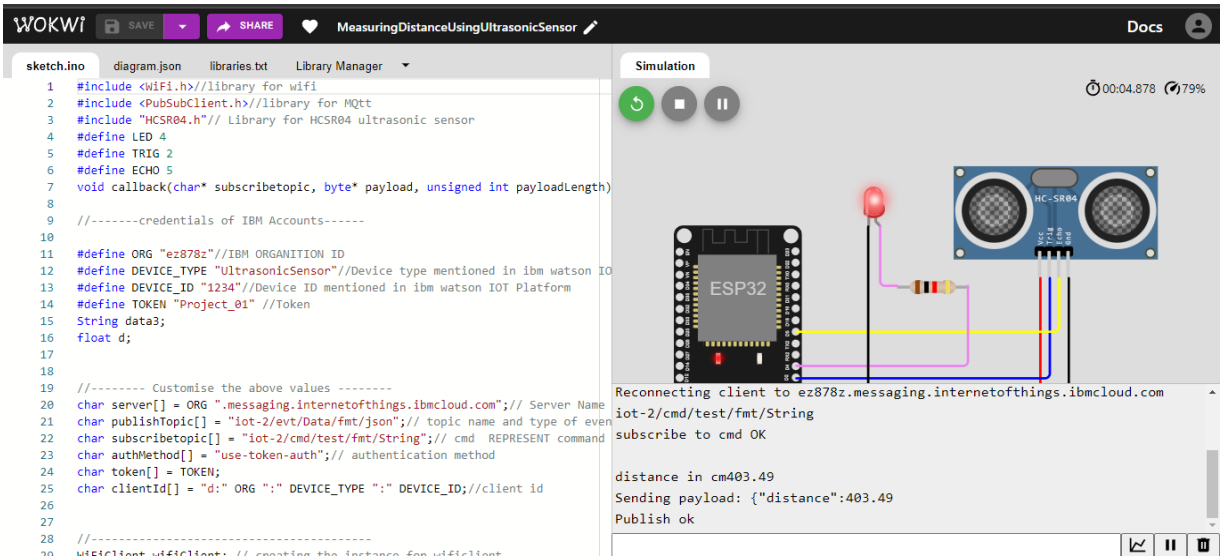
Question:

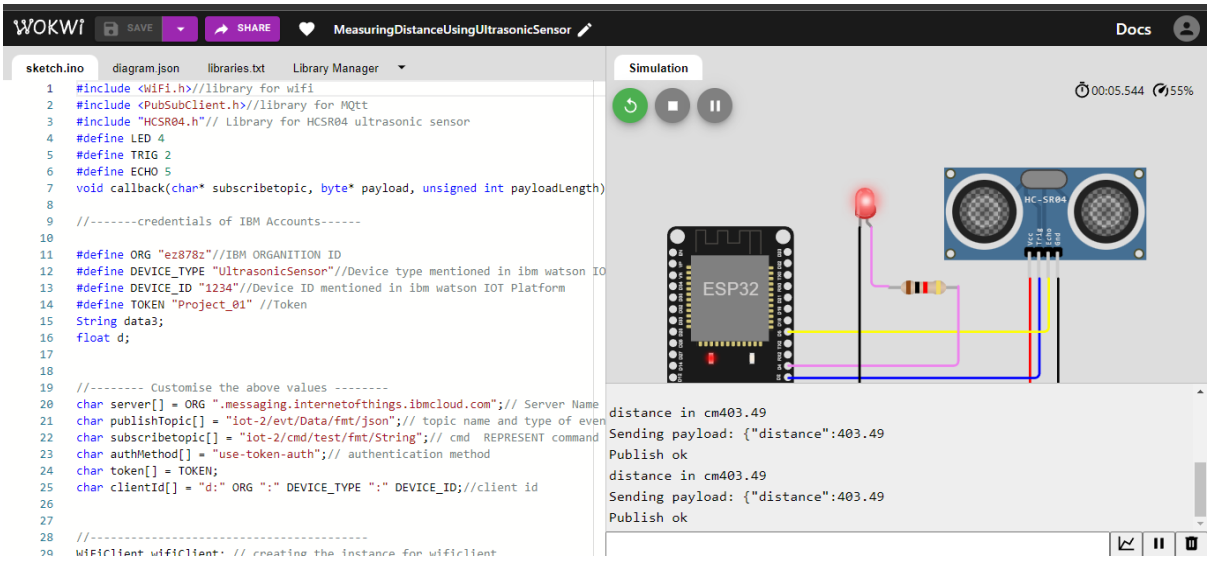
Write code and connections in Wokwi for ultrasonic sensor. Whenever distance is less than 100cms send “alert” to IBM cloud and display in device recent events.

Solution:

Wokwi Project link: https://wokwi.com/projects/348415802372784723




WOKWi
SAVE
SHARE
MeasuringDistanceUsingUltrasonicSensor
Docs
sketch.ino
diagram.json
libraries.txt
Library Manager
#include <WiFi.h>//library for wifi
#include <PubSubClient.h>//library for MQtt
#include "HCSR04.h"// Library for HCSR04 ultrasonic sensor
#define LED 4
#define TRIG 2
#define ECHO 5
void callback(char* subscribetopic, byte* payload, unsigned int payloadLength)
//-------credentials of IBM Accounts------
#define ORG "ez878z"//IBM ORGANITION ID
#define DEVICE_TYPE "UltrasonicSensor"//Device type mentioned in ibm watson IO
#define DEVICE_ID "1234"//Device ID mentioned in ibm watson IOT Platform
#define TOKEN "Project_01" //Token
String data3;
float d;
//-------- 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 even
char subscribetopic[] = "iot-2/cmd/test/fmt/String";// cmd REPRESENT command
char authMethod[] = "use-token-auth";// authentication method
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
//--
Simulation
00:04.878
79%
ESP32
HC-SR04
Reconnecting client to ez878z.messaging.internetofthings.ibmcloud.com
iot-2/cmd/test/fmt/String
subscribe to cmd OK
distance in cm403.49
Sending payload: {"distance":403.49
Publish ok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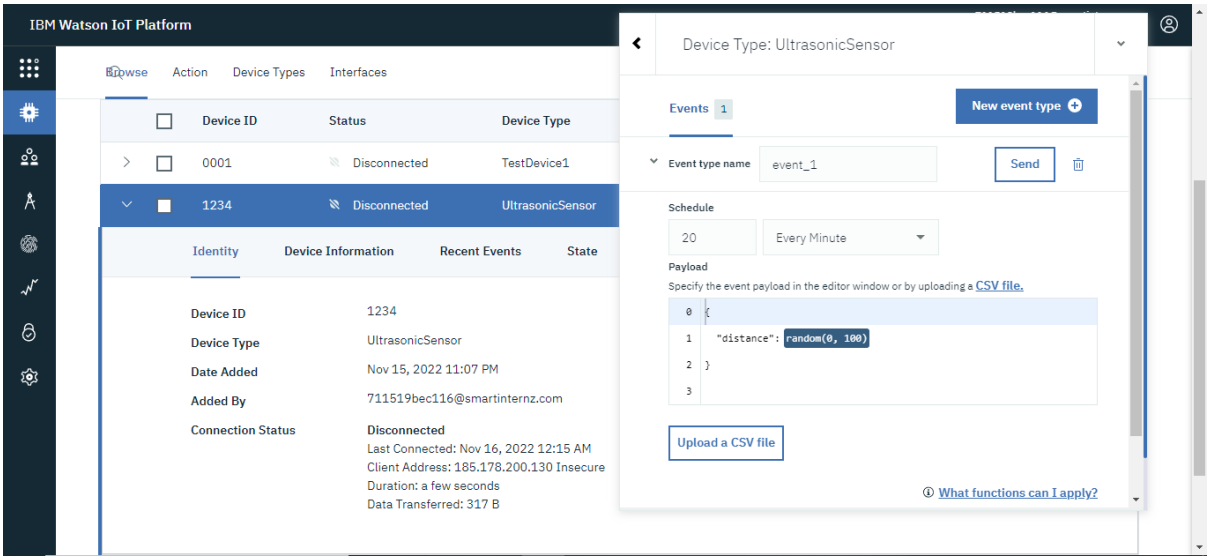
char token[] = TOKEN;
char clientId[] = "d:" ORG ":" DEVICE_TYPE ":" DEVICE_ID;//client id
//--
Simulation
00:05.544
55%
ESP32
HC-SR04
distance in cm403.49
Sending payload: {"distance":403.49
Publish ok
distance in cm403.49
Sending payload: {"distance":403.49
Publish ok


IBM Watson IoT Platform
Browse
Action
Device Types
Interfaces
Device ID
Status
Device Type
0001
Disconnected
TestDevice1
1234
Disconnected
UltrasonicSensor
Identity
Device Information
Recent Events
State
Device ID
1234
Device Type
UltrasonicSensor
Date Added
Nov 15, 2022 11:07 PM
Added By
711519bec116@smartinternz.com
Connection Status
Disconnected
Last Connected: Nov 16, 2022 12:15 AM
Client Address: 185.178.200.130 Insecure
Duration: a few seconds
Data Transferred: 317 B
Device Type: UltrasonicSensor
Events 1
New event type
Event type name
event_1
Send
Schedule
20
Every Minute
Payload
Specify the event payload in the editor window or by uploading a CSV file.
{
"distance": random(0, 100)
}
Upload a CSV file
What functions can I apply?