

## Assignment -4

Assignment Date	31 October2022
Student Name	Gobinath G
Student Roll Number	611219106022
Maximum Marks	2 Marks

### Question:

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. Upload document with wokwi share link and images of ibm cloud.

### Solution:

Wokwi link: <https://wokwi.com/projects/347020093114286676>

The screenshot displays the Wokwi IDE interface. On the left, the code for an ESP32 is shown, including headers for `<WiFi.h>`, `<WiFiClient.h>`, and `<PubSubClient.h>`. It defines pins for the ultrasonic sensor (trigPin = 5, echoPin = 18) and sets constants for sound speed and distance units. The code includes a callback function for the PubSubClient and defines IBM Cloud credentials (ORG, DEVICE\_TYPE, DEVICE\_ID, TOKEN). The simulation on the right shows an ESP32 board connected to an HC-SR04 ultrasonic sensor. The console output indicates the distance measured (85.41 inches) and the successful sending of a payload to IBM Cloud: {"Distance (cm)":216.94}.

## Images of ibm cloud:

The screenshot displays the IBM Watson IoT Platform dashboard. The top navigation bar includes tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains icons for various IoT functions. The main content area shows a list of devices, with 'GOBINATH4' selected. Below the device list, a detailed view for 'GOBINATH4' is shown, including tabs for 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is active, displaying a table of recent data events.

Event	Value	Format	Last Received
Data	{"Distance (cm)":216.94}	json	a few seconds ago
Data	{"Distance (cm)":216.94}	json	a few seconds ago
Data	{"Distance (cm)":216.97}	json	a few seconds ago
Data	{"Distance (cm)":216.97}	json	a few seconds ago