

## QUESTION:

Write code and connections in Wokwi for the ultrasonic sensor. Whenever the distance is less than 100cms 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.

## PROGRAM:

```
#define echoPin 12 // attach pin D2 Arduino to pin Echo of HC-SR04
#define trigPin 13 //attach pin D3 Arduino to pin Trig of HC-SR04
#define led1 2
// defines variables
long duration; // variable for the duration of sound wave travel
int distance; // variable for the distance measurement

void setup() {
    pinMode(trigPin, OUTPUT); // Sets the trigPin as an OUTPUT
    pinMode(echoPin, INPUT); // Sets the echoPin as an INPUT
    pinMode(led1, OUTPUT);

    Serial.begin(115200); // // Serial Communication is starting with 9600
of baudrate speed
}

void loop() {
    // Clears the trigPin condition
    digitalWrite(trigPin, LOW);
    delayMicroseconds(2);
    // Sets the trigPin HIGH (ACTIVE) for 10 microseconds
    digitalWrite(trigPin, HIGH);
    delayMicroseconds(10);
    digitalWrite(trigPin, LOW);
    // Reads the echoPin, returns the sound wave travel time in microseconds
    duration = pulseIn(echoPin, HIGH);
```

```

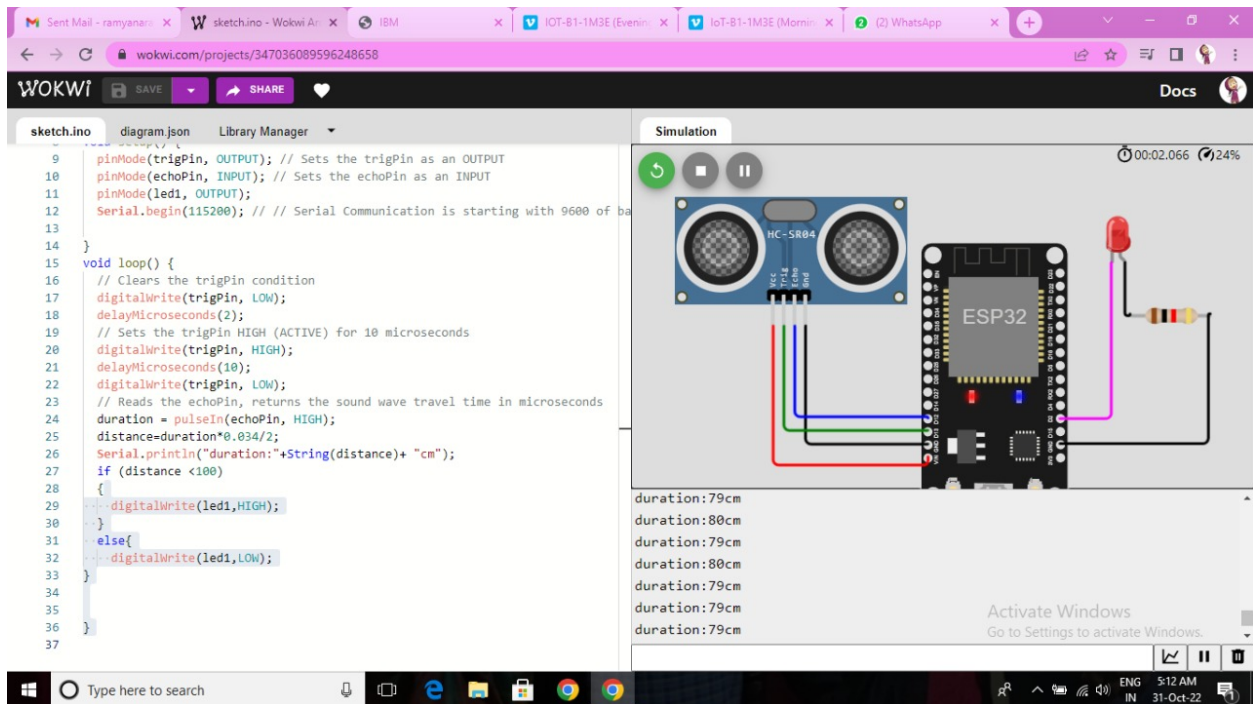
distance=duration*0.034/2;

Serial.println("duration:"+String(distance)+ "cm");
if (distance <100)
{
    digitalWrite(led1,HIGH);
}
else{
    digitalWrite(led1,LOW);
}

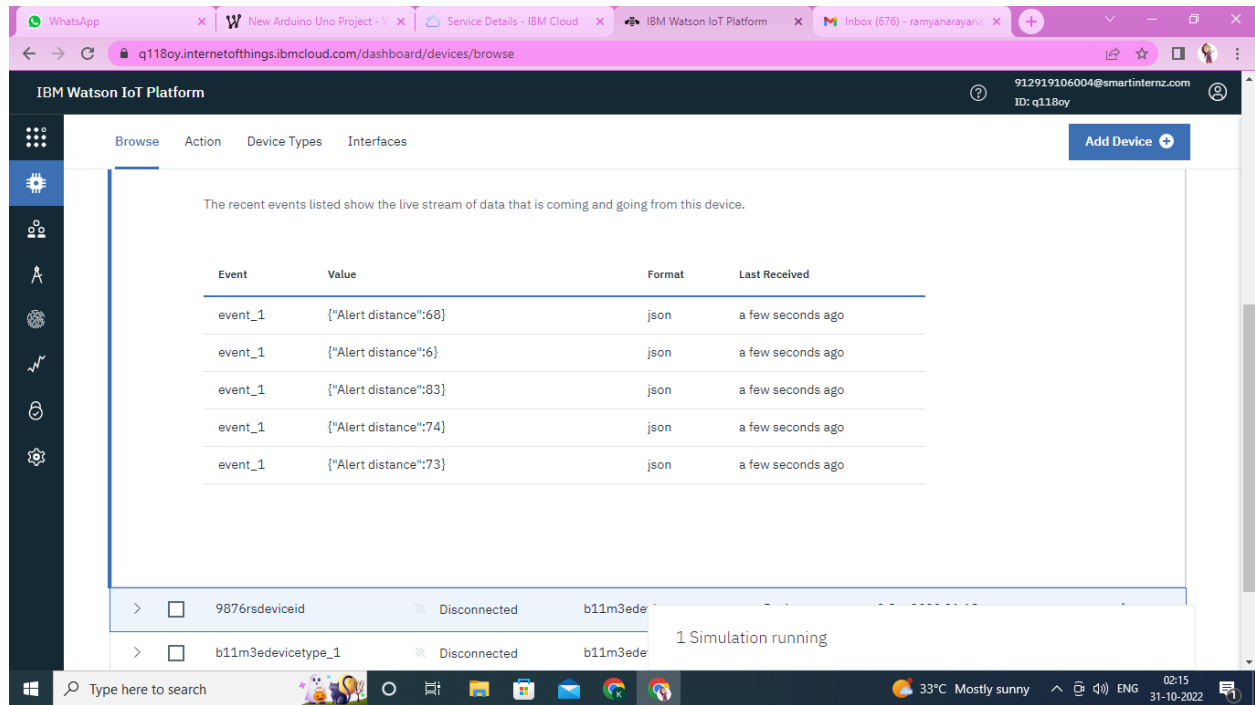
}

```

## wokwi connection



## watson alert message:



The screenshot shows the IBM Watson IoT Platform dashboard. The main content area displays a table of recent events for a device. The table has four columns: Event, Value, Format, and Last Received. The events are all labeled 'event\_1' and contain JSON data for 'Alert distance'. The values are 68, 6, 83, 74, and 73, all received 'a few seconds ago' in 'json' format. Below the table, there is a list of devices, including '9876rsdeviceid' and 'b11m3edevicetype\_1', both marked as 'Disconnected'. A notification bubble indicates '1 Simulation running'.

Event	Value	Format	Last Received
event_1	{"Alert distance":68}	json	a few seconds ago
event_1	{"Alert distance":6}	json	a few seconds ago
event_1	{"Alert distance":83}	json	a few seconds ago
event_1	{"Alert distance":74}	json	a few seconds ago
event_1	{"Alert distance":73}	json	a few seconds ago

## wokwi connection link:

<https://wokwi.com/projects/347036089596248658>