

ASSIGNMENT 4

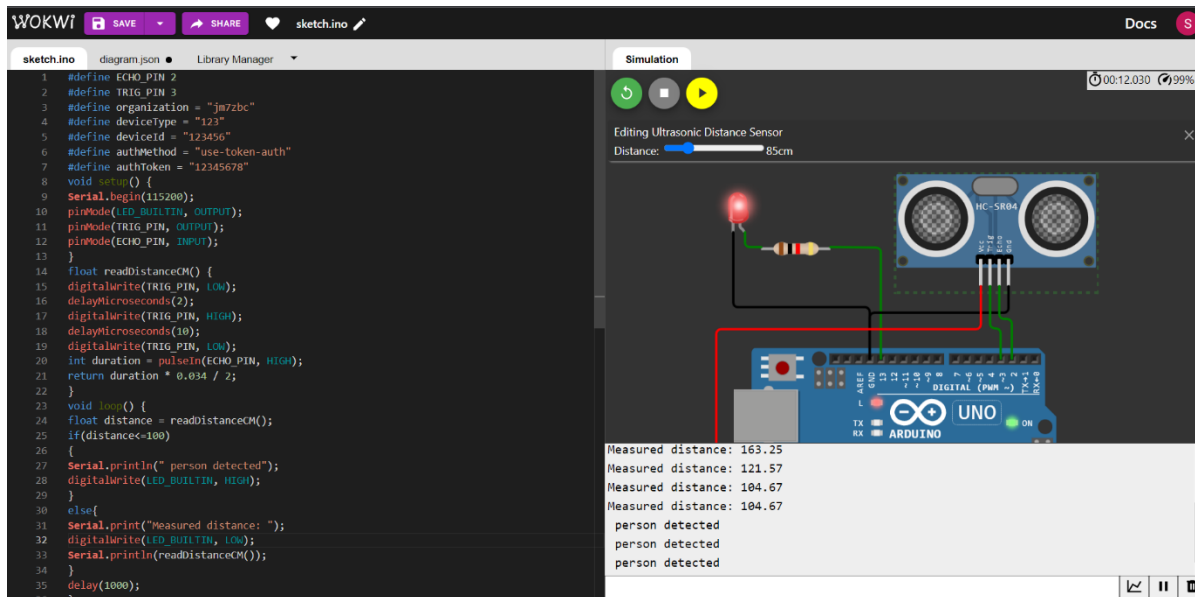
ULTRASONIC SENSOR SIMULATION IN WOKWI

Question:

Write a code and connections in wokwi for the ultrasonic sensor. Whenever the distance is less than 100cms send an “Alert” to IBM cloud and display in the device recent events.

Wokwi simulation link: <https://wokwi.com/projects/347286006935847507>

OUTPUT SCREENSHOT:



CODE:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define organization = "jm7zbc"
#define deviceType = "123"
#define deviceId = "123456"
#define authMethod = "use-token-auth"
#define authToken = "12345678"
void setup() {
  Serial.begin(115200);
  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
}
float readDistanceCM() {
  digitalWrite(TRIG_PIN, LOW);
  delayMicroseconds(2);
```

```

digitalWrite(TRIG_PIN, HIGH);
delayMicroseconds(10);
digitalWrite(TRIG_PIN, LOW);
int duration = pulseIn(ECHO_PIN, HIGH);
return duration * 0.034 / 2;
}

void loop() {
float distance = readDistanceCM();
if(distance<=100)
{
Serial.println(" person detected");
digitalWrite(LED_BUILTIN, HIGH);
}
else{
Serial.print("Measured distance: ");
digitalWrite(LED_BUILTIN, LOW);
Serial.println(readDistanceCM());
}
delay(1000);
}

```

IBM CLOUD OUTPUT:

IBM Watson IoT Platform

sreelakshmi.varma.ec19@bitsathy.ac.in
ID: jn7zbc

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
event_1	{"distance":38}	json	a few seconds ago
event_1	{"distance":291}	json	a few seconds ago
event_1	{"distance":225}	json	a few seconds ago
event_1	{"distance":469}	json	a few seconds ago
event_1	{"distance":58}	json	a few seconds ago

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1 Simulation running