

ASSIGNMENT 4

ULTRASONIC SENSOR SIMULATION IN WOKWI

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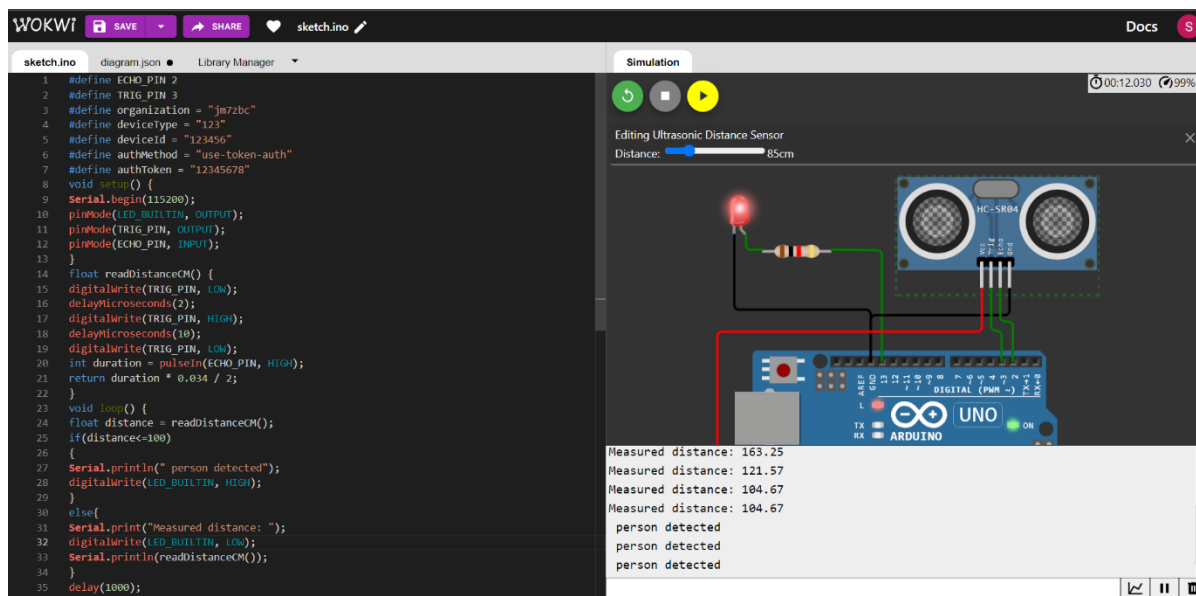
TEAM ID: PNT2022TMID01879

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:

The screenshot displays the IBM Watson IoT Platform interface. The top navigation bar includes 'Browse', 'Action', 'Device Types', and 'Interfaces'. A sidebar on the left contains various icons for device management. The main content area is titled 'Recent Events' and shows a table of live data streams.

The table has the following columns: Event, Value, Format, and Last Received.

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

At the bottom of the table, it indicates 'Items per page 50' and '1-1 of 1 item'. Below the table, a status box shows '1 Simulation running'.