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College: Sona College of Technology

Date: 20.10.2022

ASSIGNMENT – 4

QUESTION:

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

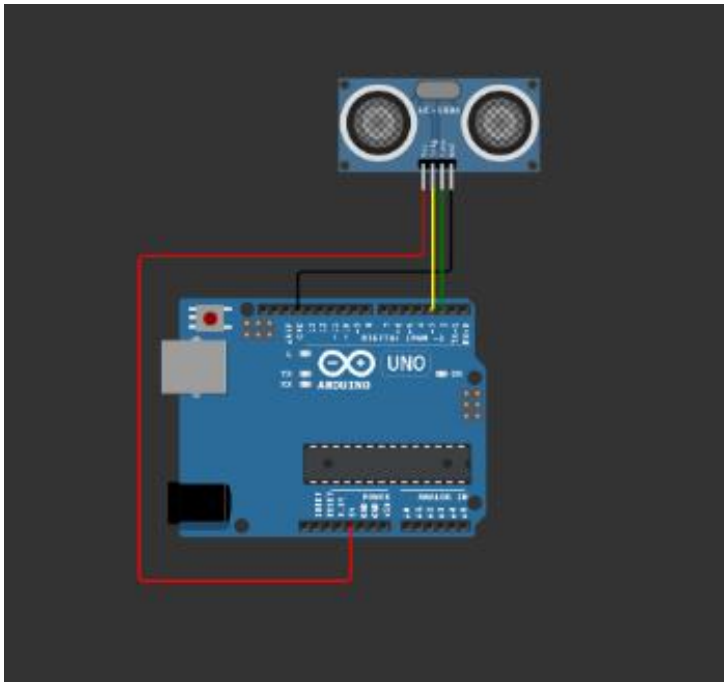
SOLUTION:

```
#define ECHO_PIN 2
#define TRIG_PIN 3
#define ORG = "5q4061"
#define DEVICE_TYPE = "US_Sensor"
#define Device_Id = "Y24V19_sensor"
#define AUTH_METHOD = "use-token-auth"
#define AUTH_TOKEN = "oW&W6IEIe2Zykab6St"
void setup() {
 Serial.begin(9600);
 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);
```

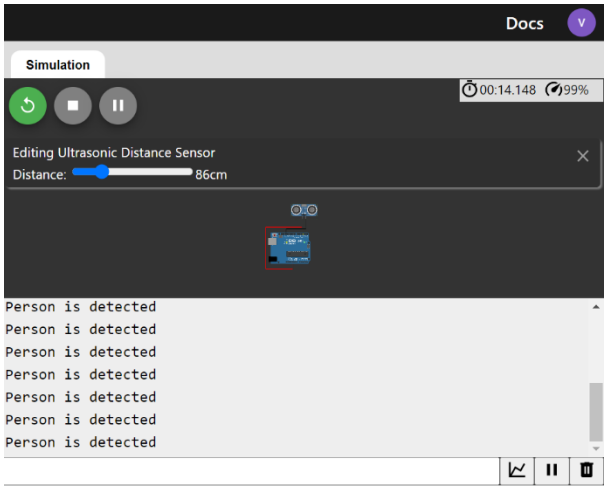
```
 return duration * 0.034 / 2;
}
void loop() {
 float distance = readDistanceCM();
if(distance <= 100)
{
 Serial.println("person detected ");
}
else{
Serial.print("Measured distance: ");
 Serial.println(readDistanceCM());
}
 delay(1000);
}
```

SIMULATION:

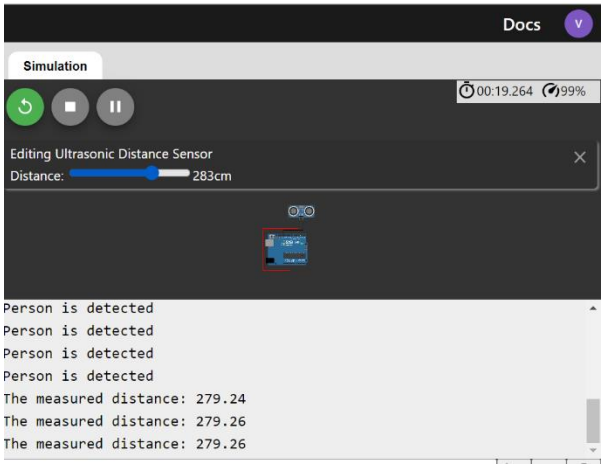
CIRCUIT:



INPUT AND OUTPUT: (At distance 86 cm)

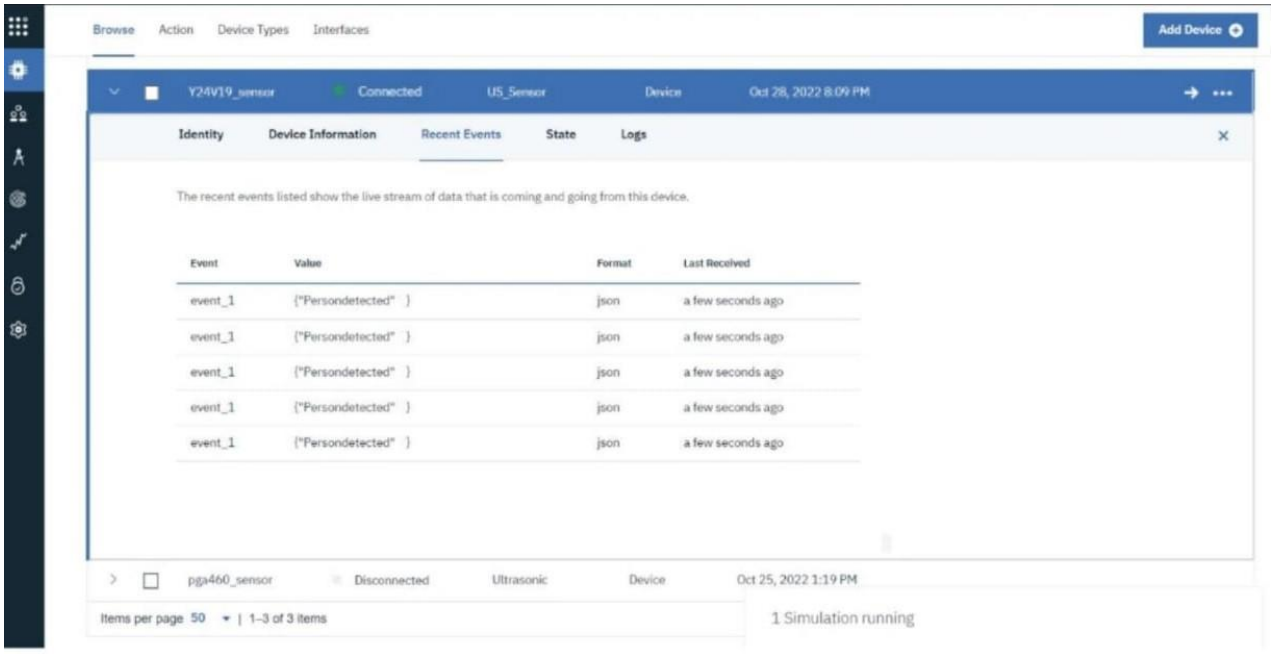


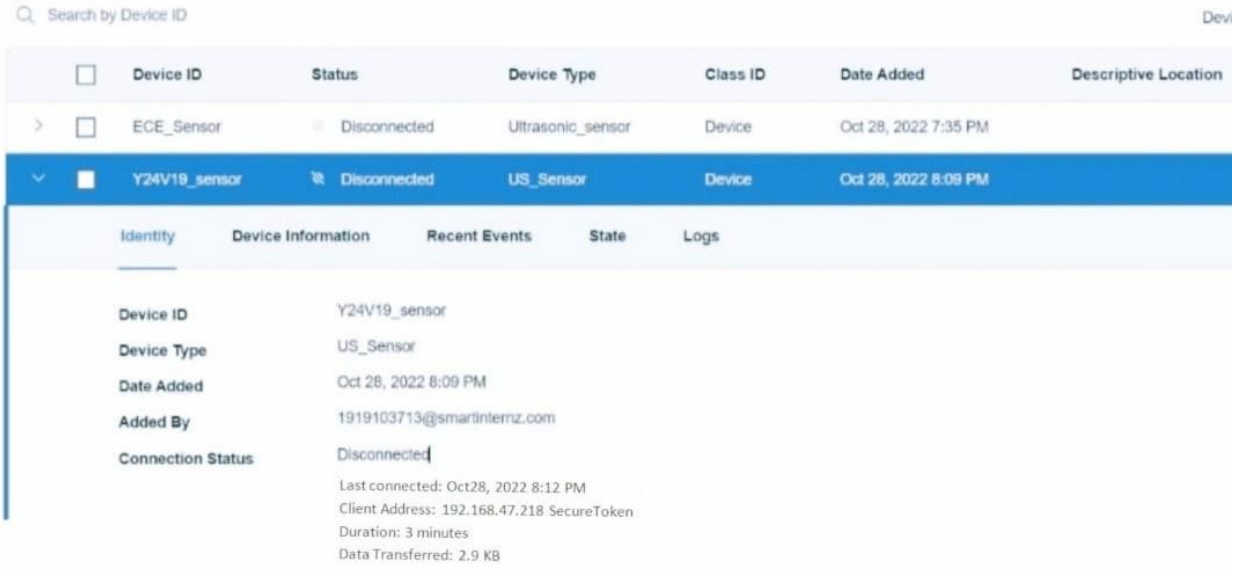
INPUT AND OUTPUT: (At distance 283 cm)



Wokwi link: https://wokwi.com/projects/346774428015657554

IBM Cloud:


Browse
Action
Device Types
Interfaces
Add Device
Y24V19_sensor
Connected
US_Sensor
Device
Oct 28, 2022 8:09 PM
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
{"Persondetected" }
json
a few seconds ago
pga460_sensor
Disconnected
Ultrasonic
Device
Oct 25, 2022 1:19 PM
Items per page 50
1–3 of 3 items
1 Simulation running


Search by Device ID
Device ID
Status
Device Type
Class ID
Date Added
Descriptive Location
ECE_Sensor
Disconnected
Ultrasonic_sensor
Device
Oct 28, 2022 7:35 PM
Y24V19_sensor
Disconnected
US_Sensor
Device
Oct 28, 2022 8:09 PM
Identity
Device Information
Recent Events
State
Logs
Device ID
Y24V19_sensor
Device Type
US_Sensor
Date Added
Oct 28, 2022 8:09 PM
Added By
1919103713@smartinternz.com
Connection Status
Disconnected
Last connected: Oct28, 2022 8:12 PM
Client Address: 192.168.47.218 SecureToken
Duration: 3 minutes
Data Transferred: 2.9 KB