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Assignment-IV

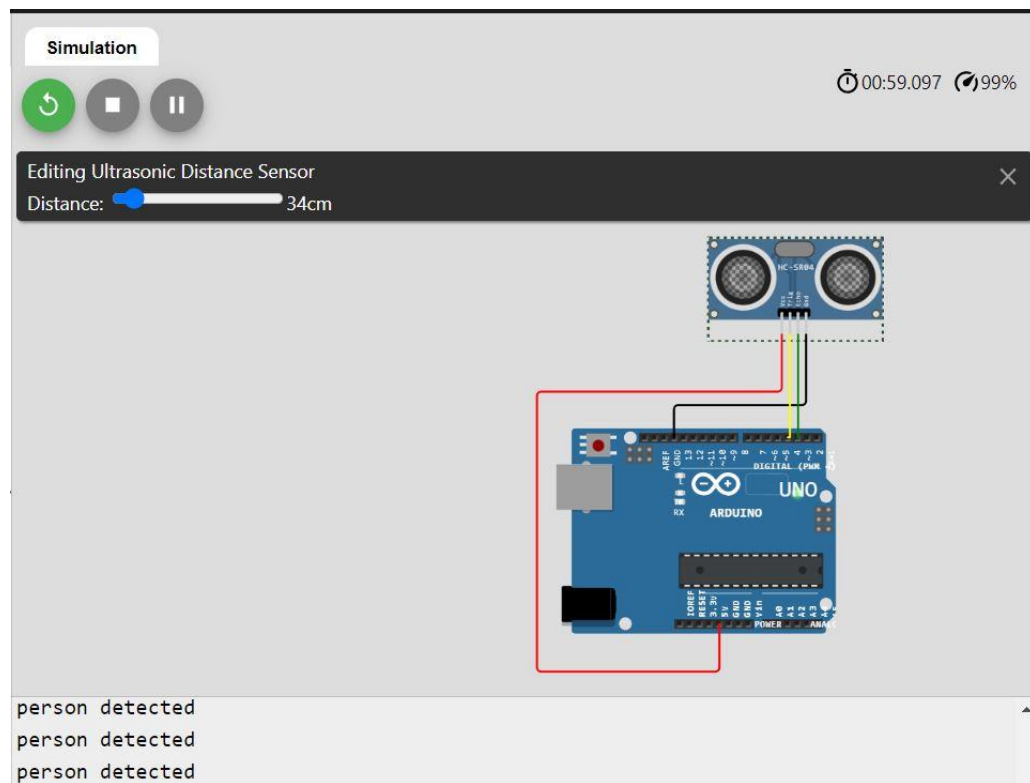
Write code and connections in wokwi for ultrasonic. Whenever distance is less than 100 cms send “alert” to ibm cloud and display in device recent events.

Code:

```
#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:



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

The screenshot shows the AWS IoT console interface. At the top, there are tabs for 'Browse', 'Action', 'Device Types', and 'Interfaces'. On the right, there is a button 'Add Device'. The main content area is divided into a header and a body. The header shows the device name 'Y24V19_sensor', its status 'Connected', type 'US_Sensor', and a timestamp 'Oct 28, 2022 8:09 PM'. Below the header, there are tabs for 'Identity', 'Device Information', 'Recent Events', 'State', and 'Logs'. The 'Recent Events' tab is selected. Below the tabs, there is a message: 'The recent events listed show the live stream of data that is coming and going from this device.' Below the message, there is a table with the following columns: 'Event', 'Value', 'Format', and 'Last Received'. The table contains five rows of data, all with the event name 'event_1' and the value '["Persondetected"]'. The format is 'json' and the last received time is 'a few seconds ago' for all entries. At the bottom of the console, there is a footer showing the device name 'pgp460_sensor', status 'Disconnected', type 'Ultrasonic', and timestamp 'Oct 25, 2022 1:19 PM'. There is also a pagination bar showing 'Items per page 50' and '1-3 of 3 items'. A status bar at the very bottom indicates '1 Simulation running'.

Event	Value	Format	Last Received
event_1	["Persondetected"]	json	a few seconds ago
event_1	["Persondetected"]	json	a few seconds ago
event_1	["Persondetected"]	json	a few seconds ago
event_1	["Persondetected"]	json	a few seconds ago
event_1	["Persondetected"]	json	a few seconds ago

1 Simulation running

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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			