ASSIGNMENT 4

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QUESTION

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

CODE:

```
//Pins
const int TRIG PIN = 7 ;
const int ECHO PIN = 8;
//Anything over 400 cm (23200 us pulse) is "out of range"
const unsigned int MAX DIST = 23200;
void setup() {
// The Trigger pin will tell the sensor to range find
pinMode(TRIG PIN, OUTPUT);
digitalWrite(TRIG PIN, LOW);
//Set Echo pin as input to measure the duration of
//pulses coming back from the distance sensor
pinMode(ECHO PIN, INPUT );
// We'll use the serial monitor to view the sensor output
Serial.begin (9600);
void loop() {
unsigned long t1;
unsigned long t2;
unsigned long pulse_width;
float cm;
```

```
float inches;
// Hold the trigger pin high for at least 10 us
digitalWrite(TRIG PIN, HIGH);
delayMicroseconds(10);
digitalWrite(TRIG PIN, LOW);
// Wait for pulse on echo pin
while (digitalRead( ECHO PIN )==0 );
// Measure how long the echo pin was held high (pulse width)
// Note: the micros() counter will overflow after-70 min
t1= micros ();
while (digitalRead(ECHO PIN) == 1);
t2= micros ();
pulse width = t2-t1;
// Calculate distance in centimeters and inches. The constants
//are found in the datasheet, and calculated from the assumed speed
// of sound in air at sea level (- 340m/s)
cm=pulse width / 58;
inches = pulse width/148.0;
// Print out results
if (pulse width >MAX DIST ) {
Serial.println("Out of range");
} else {
Serial.println("*********************************);
Serial.print("The Measured Distance in cm: ");
Serial.println(cm);
if(cm < 100){
//while(true) {
Serial.println("Alert!!");
//}
}
Serial.print("**********************************);
//wait at least 1000ms before next measurement
delay(1000);
}
```

LINK

https://wokwi.com/projects/347045809884234323

OUTPUT

