

Assignment-4

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1. Write Code and connections in wokwi for ultrasonic sensor. whatever distance is less than 100 cms send "Alert" to ibm cloud and display in device recent events.

Code

```
//put your setup code here, to run once:
const int TRIG_PIN = 7; const int
ECHO_PIN = 8;

//Anything over 400cm (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(ECHO_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_PI
N, 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=micro
s();
pulse_width=t2-t1;

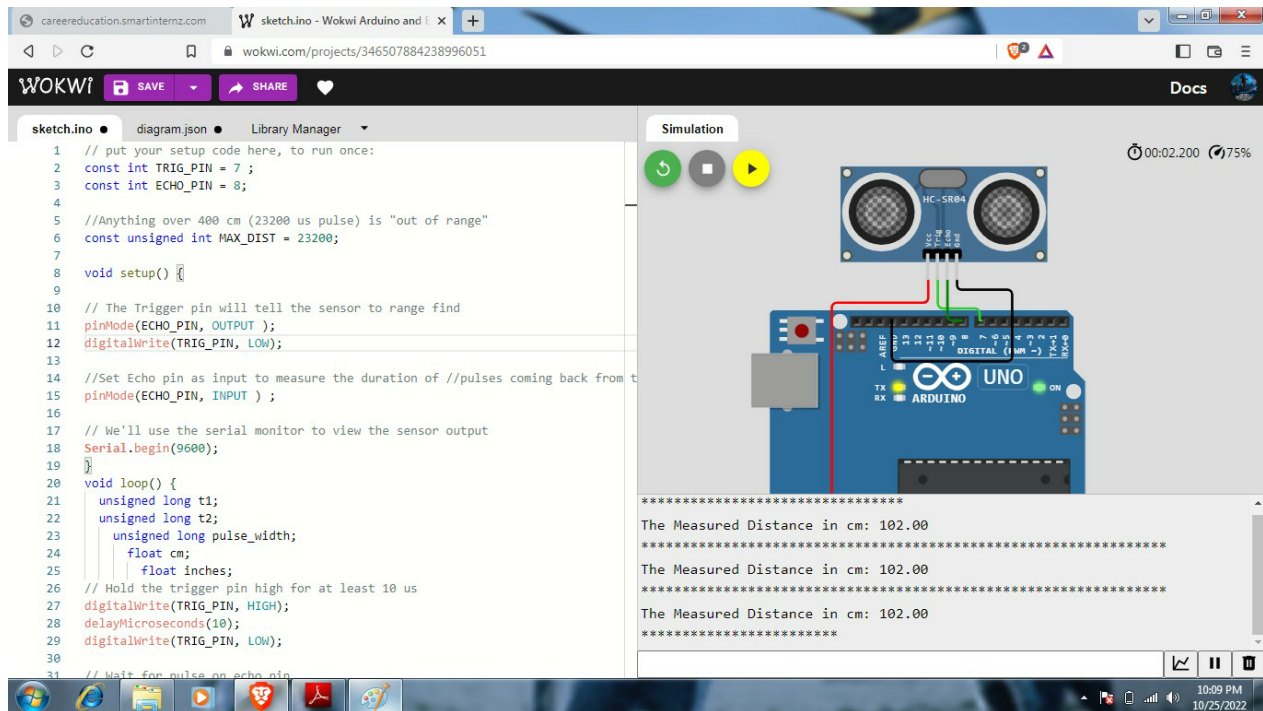
//Calculated distance in centimeters and inches. The constants
//are found in the datasheet, and calculated from the assumed speed
//of sound in air at sea level(-
340m/s)cm=pulse_width/58;
inches=pulse_width/148.0;

//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){
    Serial.println("ALERT!!");
  }
  Serial.print("*****");
}

//wait at least 1000ms before next measurementdelay(1000)
;
}

```

If distance is greater than 100, it will not alert.



If distance is less than 100, it will alert.

