Assignment -4

Python Programming

Assignment Date	28 October 2022
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Maximum Marks	2 Marks

Question-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.

Solution:

```
const int TRIG_PIN = 7 ;  const int ECHO_PIN = 8;

void setup() {

// The Trigger pin will tell the sensor to range find  Pin
Mode(TRIG_PIN, OUTPUT);  digital Write(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);

}
```

Output:

1.If the distance is less than 100 centimeters,it alerts.

2.If the distance is more than 100 centimeters,it won’t alert

3.Simulation and Code execution