Assignment 4

Assignment date:15.11.22

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Maximum marks: 2 marks

QUESTION:

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

CODING:

```
//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
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 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!!");
   //}
//wait at least 1000ms before next measurement
Delay(1000);
```

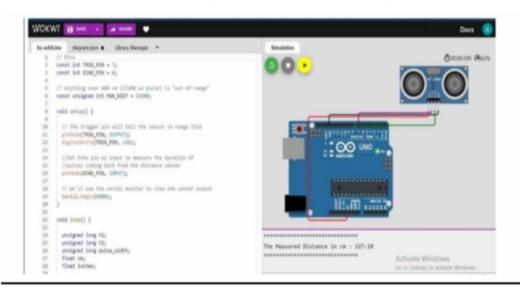
OUTPUT:

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



Activate Window

2.If the distance is more than 100 cms,it won't alert



3.Simulation and code execution

