# Assignment-4

**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 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(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\_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 ){

**Serial**.println("ALERT!!");

}

**Serial**.print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

}

//wait at least 1000ms before next measurement delay(1000);

}

# C:\Users\ADMIN\Pictures\Screenshot.pngIf distance is greater than 100,it will not alert.

**If distance is less than 100,it will alert.**

