

## ASSIGNMENT-4

Date	02 OCTOBER 2022
Team ID	PNT2022TMID19800
Project Name	SmartFarmer - IoT Enabled Smart Farming Application
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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 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);

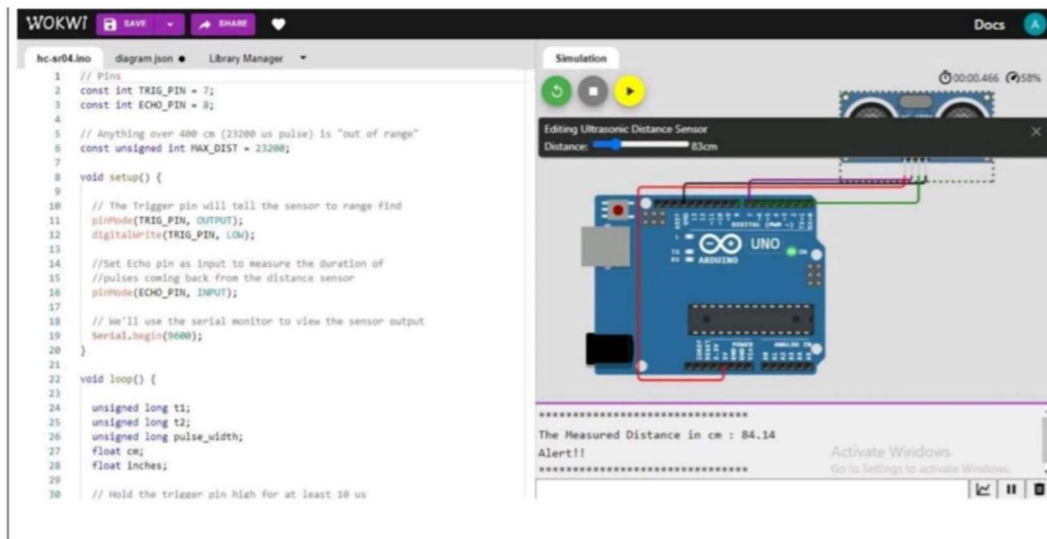
  if( cm < 100 ){
    //while(true){
      Serial.println("Alert!!");
    //}
  }

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

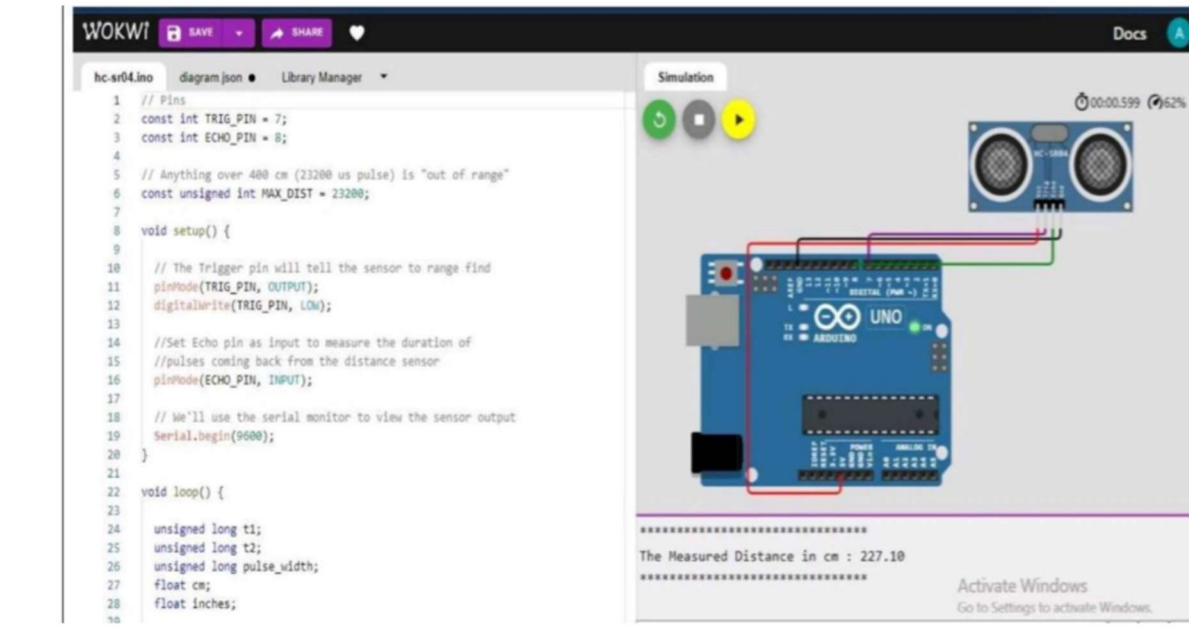
//wait at least 1000ms before next measurement
Delay(1000);
}
```

## **OUTPUT:**

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



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



### 3.Simulation and code execution

