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.

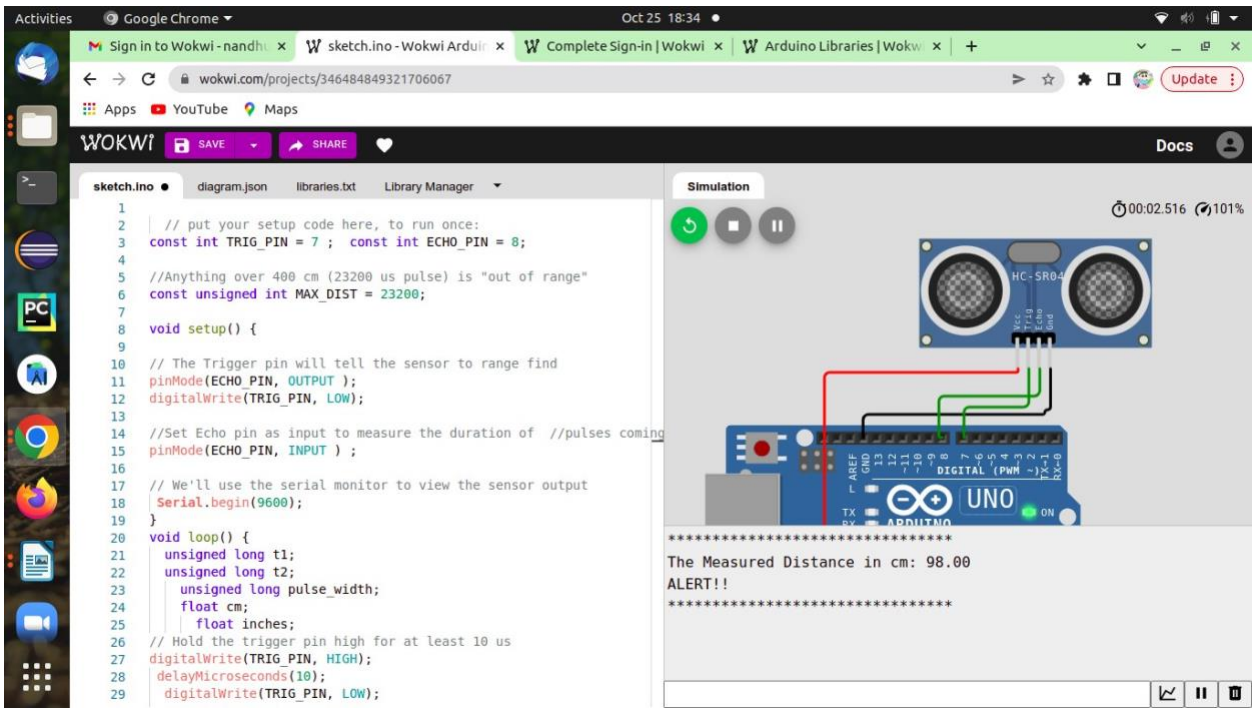
CODE:

```
 // 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;
```

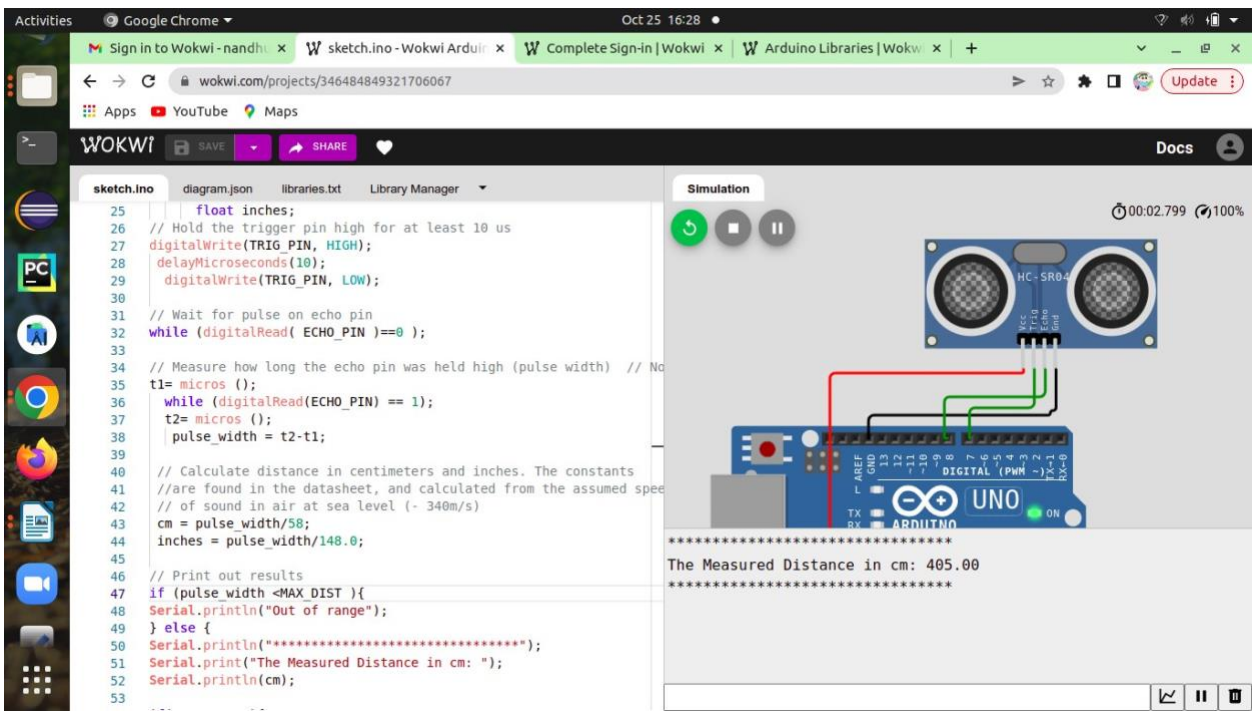
```
    float inches;
// Hold the trigger pin high for at least 10 us
digitalWrite(TRIG_PIN, HIGH);
delayMicroseconds(10);
 digitalWrite(TRIG_PIN, LOW);

// 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/238;
 inches = pulse_width/34;

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);
}
```

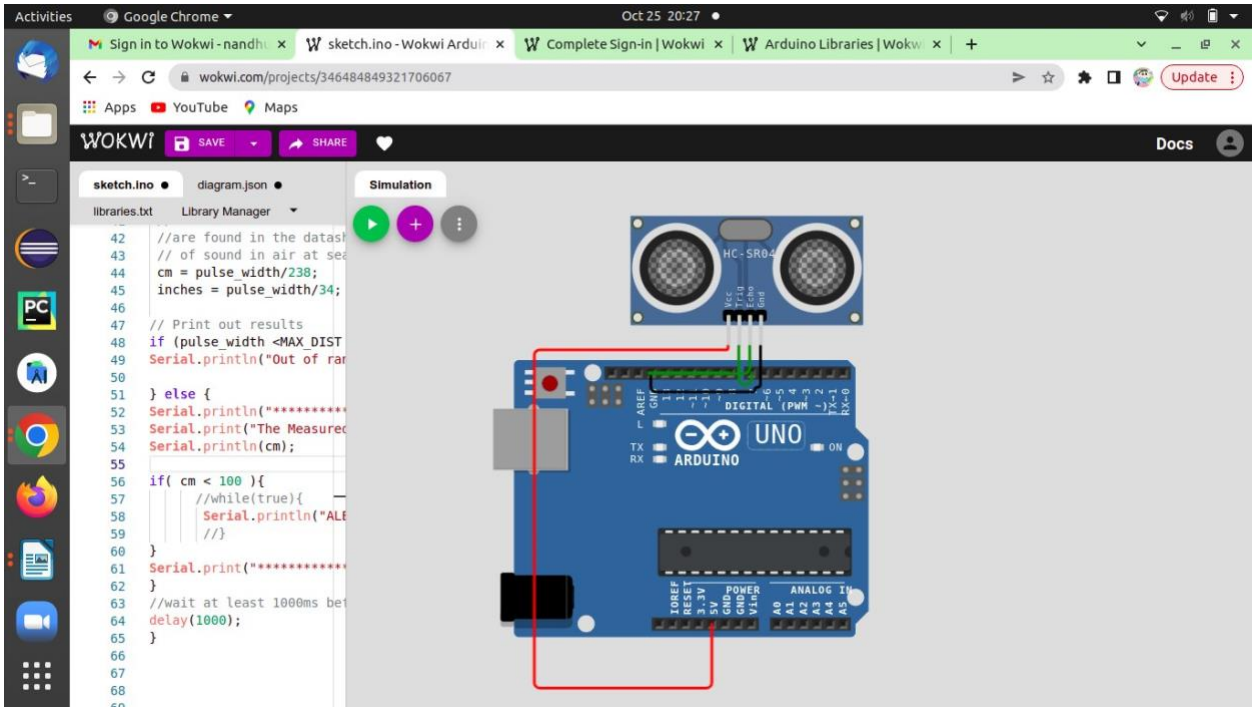
If the distance is less than 100 cm, it Alerts.



If the distance is more than 100 cm, it won't Alert



CONNECTION :


Activities
Google Chrome
Oct 25 20:27
Sign in to Wokwi - nandh
sketch.ino - Wokwi Ardui
Complete Sign-in | Wokwi
Arduino Libraries | Wokw
wokwi.com/projects/346484849321706067
Update
Apps
YouTube
Maps
WOKWI
SAVE
SHARE
Docs
sketch.ino
diagram.json
libraries.txt
Library Manager
Simulation
HC-SR04
UNO
ARDUINO
DIGITAL (PWM ~)
POWER
ANALOG IN
//are found in the datash
// of sound in air at sea
cm = pulse_width/238;
inches = pulse_width/34;
// Print out results
if (pulse_width <MAX_DIST
Serial.println("Out of ran
} else {
Serial.println("**********
Serial.print("The Measurec
Serial.println(cm);
if(cm < 100){
//while(true){
Serial.println("ALE
//}
}
Serial.print("**********
}
//wait at least 1000ms bet
delay(1000);
}