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 ();
```

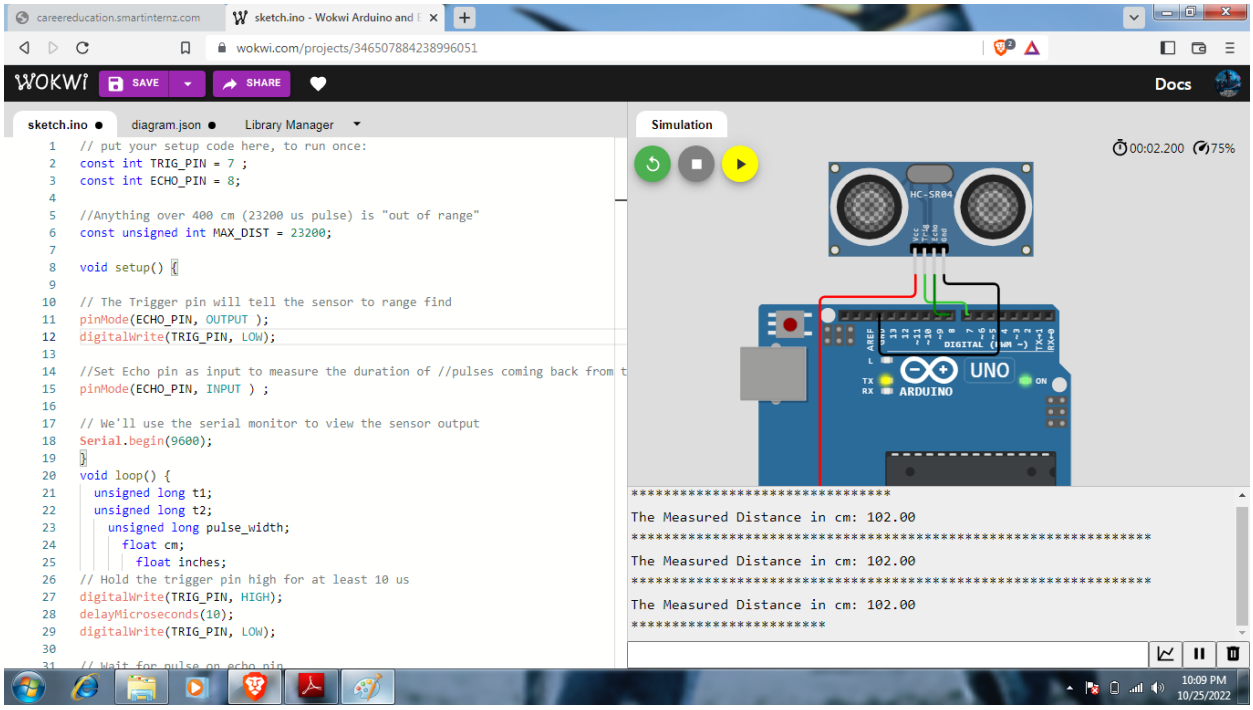
```
  while (digitalRead(ECHO_PIN) == 1);
  t2= micros ();
    pulse_width = t2-t1;

// 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);
}
```

If distance is greater than 100,it will not alert.



If distance is less than 100,it will alert.