Assignment-4

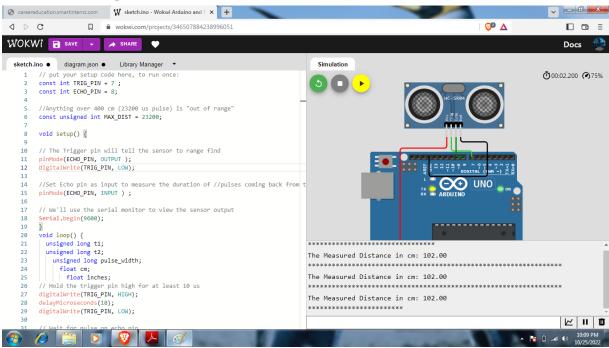
1.Write Code and connections in wokwi for ultrasonic sensor. whatever distance is less than 100 cms send "Alert" to ibm cloud and display in device recent events.

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 ){</pre>
   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.

