ASSIGNMENT-4

DATE	25 october 2022
TEAM ID	PNT2022TMID48246
PROJECT NAME	IOT Based Smart Crop Protection System for Agriculture
MAXIMUM MARK	2 marks

QUESTION:

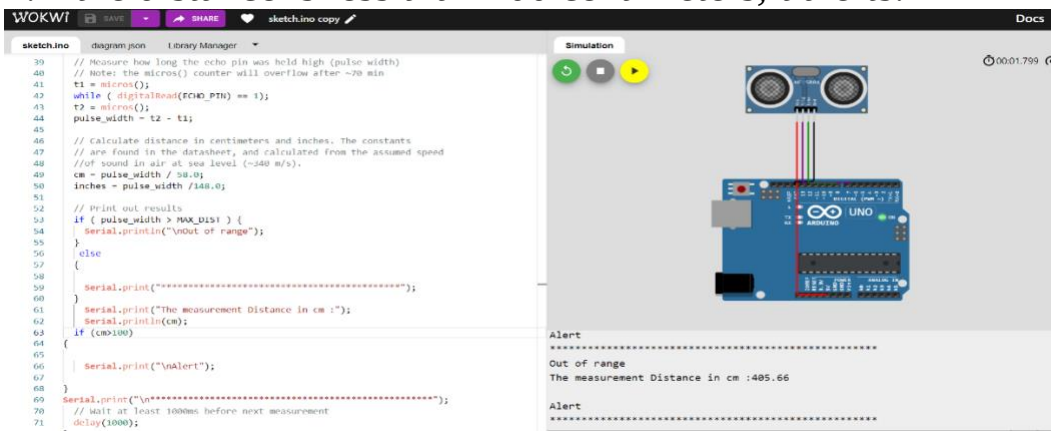
Write code and connections in wokwi for ultrasonic sensor. whatever distance is less than 100 cms send “Alert” to Ibm cloud and display in device recent events.

CODE:

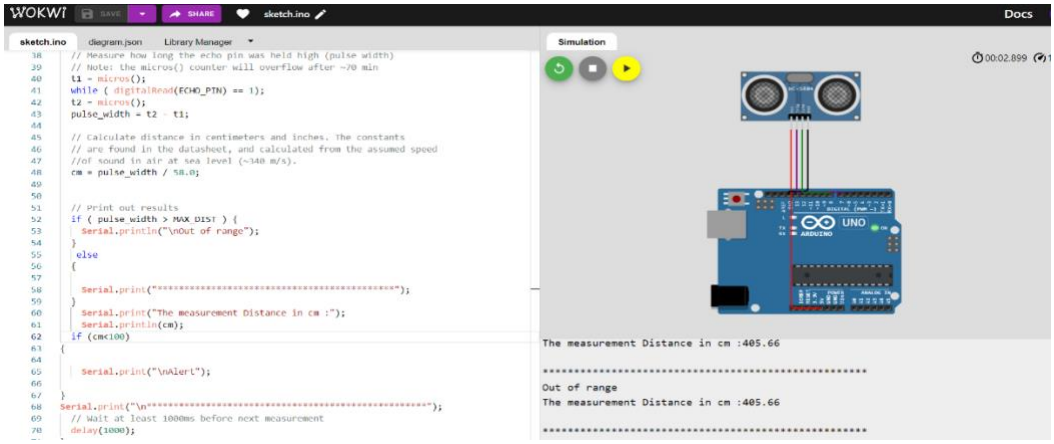
```
const int TRIG_PIN = 7;
const int ECHO_PIN = 8;

// 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(TRIG_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;
```

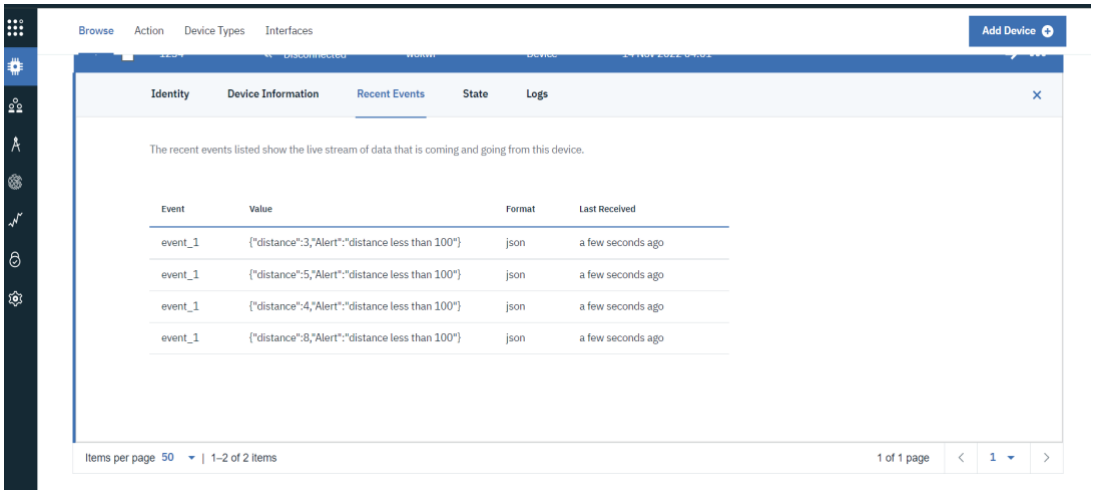
```
  unsigned long t2;
  unsigned long pulse_width;
  float cm;
  float inches;

  // 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 (~340 m/s).
  cm = pulse_width / 58.0;
  inches = pulse_width /148.0;

  // Print out results
  if ( pulse_width > MAX_DIST ) {
    Serial.println("\nOut of range");
  }
   else
  {

    Serial.print("*******************************************");
  }
    Serial.print("The measurement Distance in cm :");
    Serial.println(cm);
  if (cm>100)
{

   Serial.print("\nAlert");

}
Serial.print("\n*************************************************");
  // Wait at least 1000ms before next measurement
 delay(1000);
}
```

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



2.If the distance is more than 100 centimeters,it won’t alert





WOKWI LINK:

https://wokwi.com/projects/348244960188826196