ASSIGNMENT 4

Assignment Date	15 October 2022
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Maximum Marks	2 Marks

Write Code and connections in wok Wi for ultrasonic sensor. Whatever distance is less than 100 cms send “Alert” to ibm cloud a and display in device recent events.

Solution:

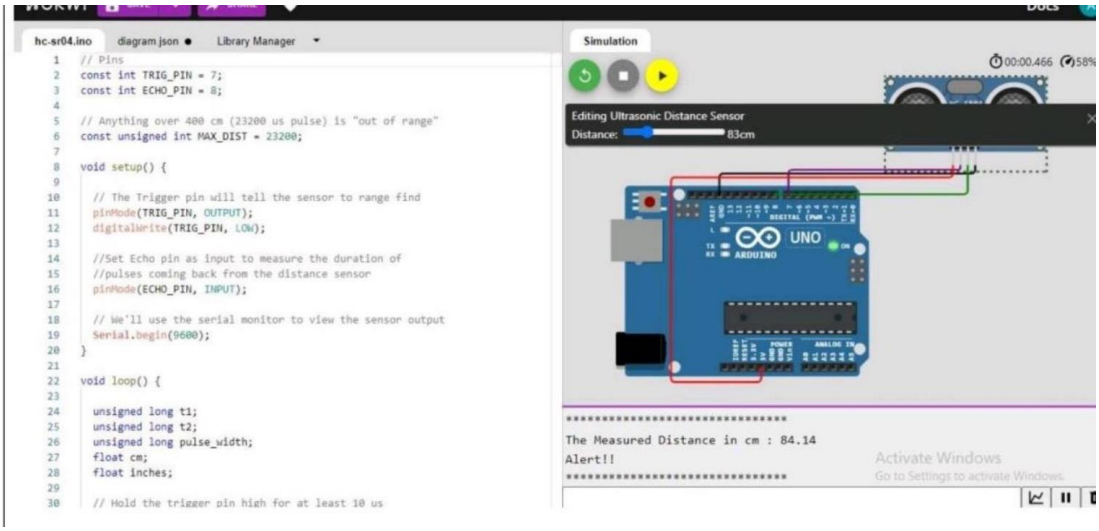
```
//Pins
const int TRIG_PIN =
7;

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;
```

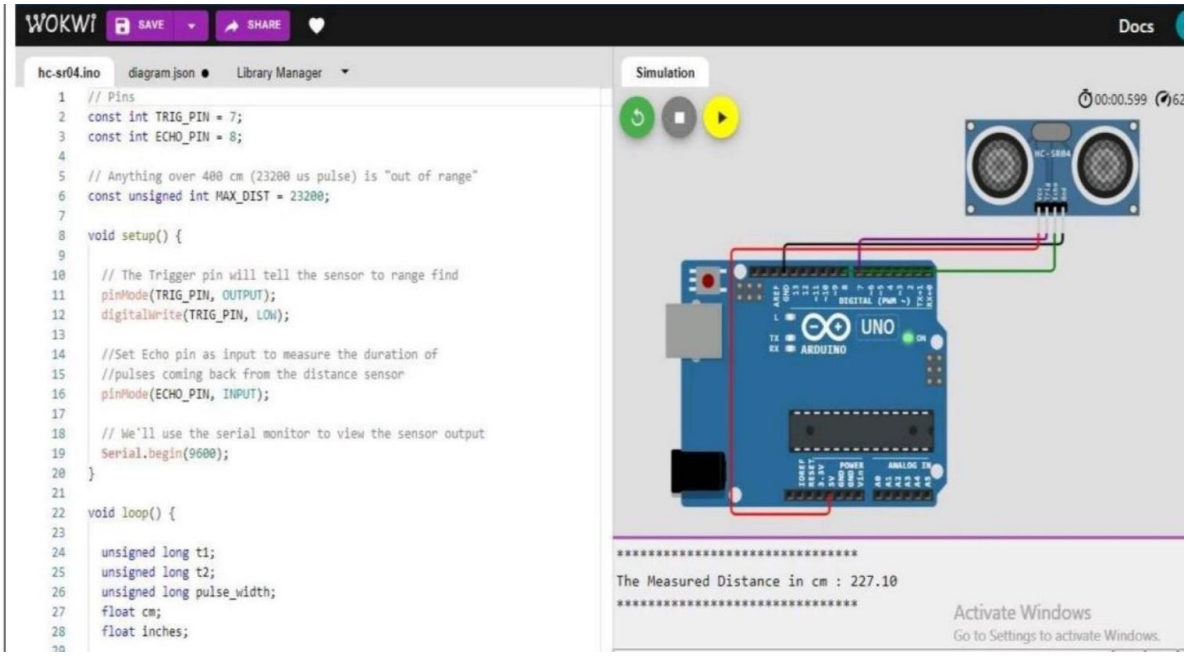
```
// Print out results
if (pulse_width >MAX _
DIST){ Serial.println("Out of
range");
} else { Serial.println("*********************************”);
Serial.print("The Measured Distance in cm: ");
Serial.println(cm);

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.

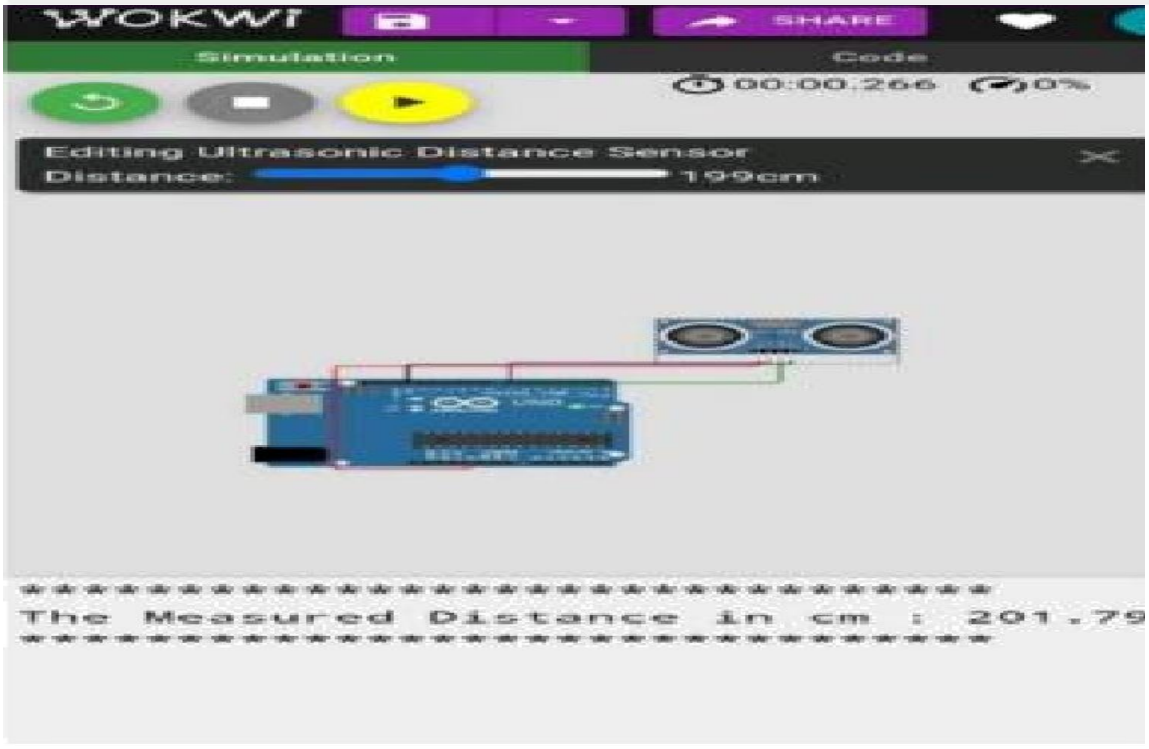


2.If the distance is more than 100 cms, it won’t alert



3.Simulation and code execution


```
The Measured Distance in cm : 57.79
Alert it !!
```




```
The Measured Distance in cm : 201.79
```


WOKWI
SHARE
Simulation
Code
UNO

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