Assignment -4

Assignment Date	25 October 2022
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Maximum Marks	2 Marks

Question-1:

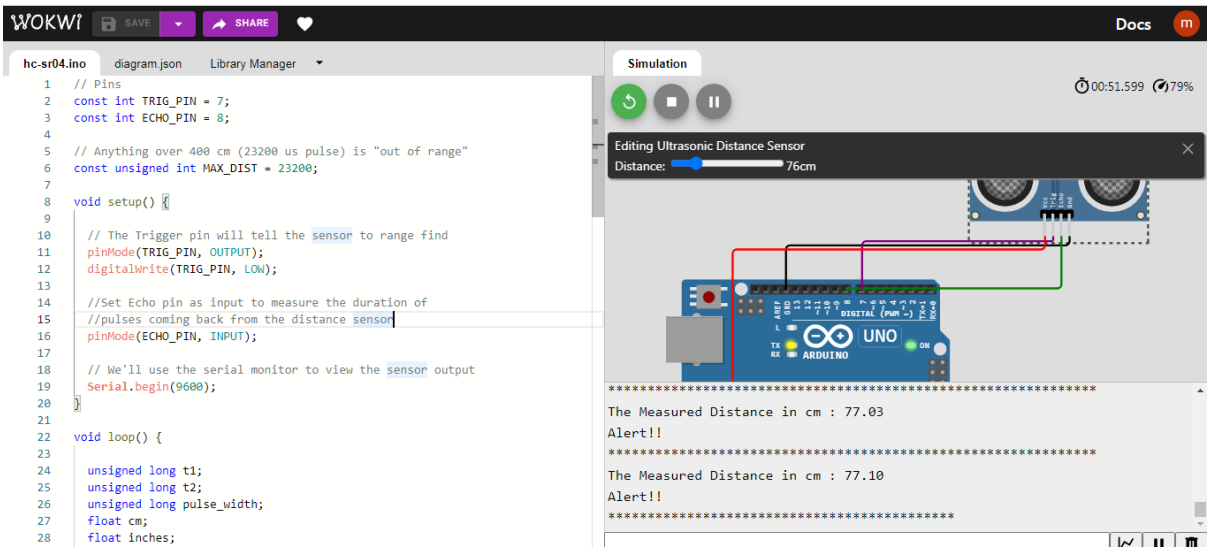
Write code and connections in wokwi for ultrasonic sensor. whenever distance is less than 100 cms send “alert” to ibm cloud and display in device recent events.

```
//Pins
const int TRIG_PIN = 7;
constintECHO_PIN=8;

//Anythingover400cm(23200 uspulse)is"out of  range"
const unsigned int MAX_DIST = 23200;

voidsetup(){

  //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 longt1;
  unsigned longt2;
  unsigned long pulse_width;
  float cm;
```

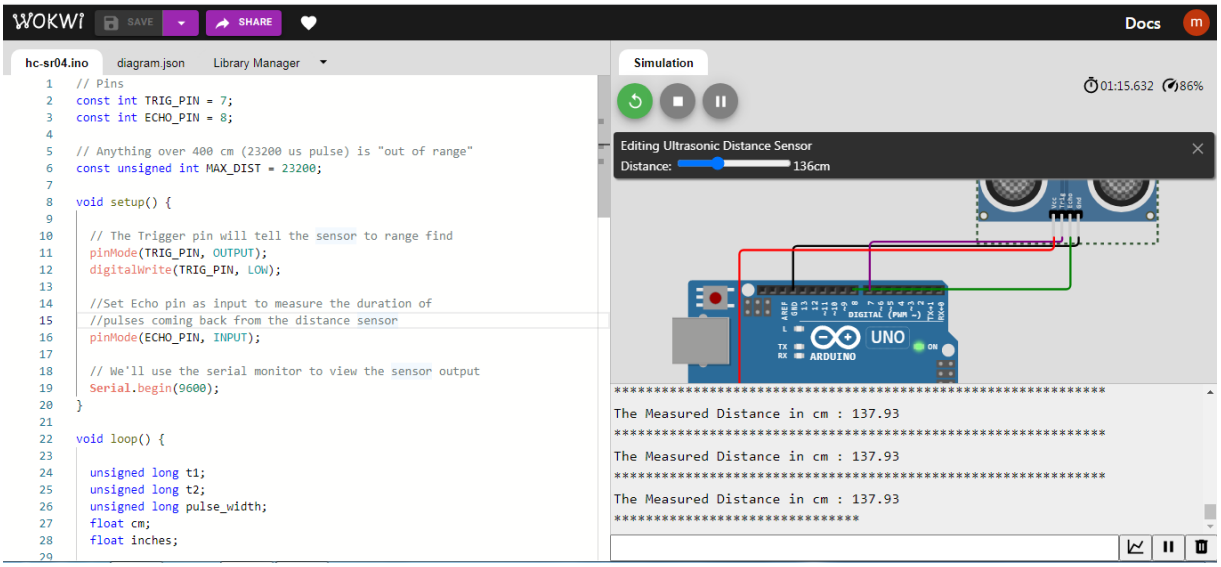
```
 float inches;
 //Hold the trigger pin high for at least10us
 digitalWrite(TRIG_PIN,HIGH);
 delayMicroseconds(10);
 digitalWrite(TRIG_PIN,LOW);
//Wait for pulse on echo pin
 while(digitalRead(ECHO_PIN)==0);
//Measure how long the echo pin was held high (pulsewidth)
 //Note: the micros()counter will 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 / 58.0;
 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 atleast 1000ms before next measurement
 delay(1000);
}
```

WOKWI SIMULATION:

Case 1:Distance less than 100 cm



Case 2:Distance greater than 100 cms



WOKWI LINK:

https://wokwi.com/projects/346844033654456916

IBM CLOUD: