IBM ASSIGNMENT - 4

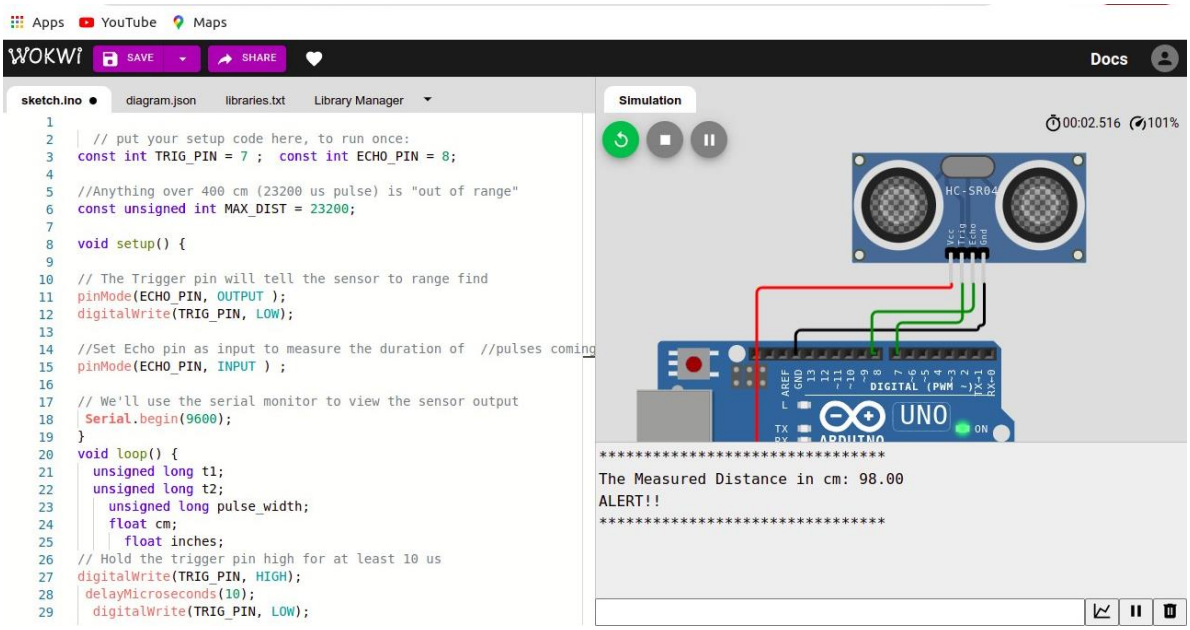
Write Code and connections in wokwi for ultrasonic sensor. whatever distance is less than 100 cms send “Alert” to ibm cloud and display in device recent events.

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;
```

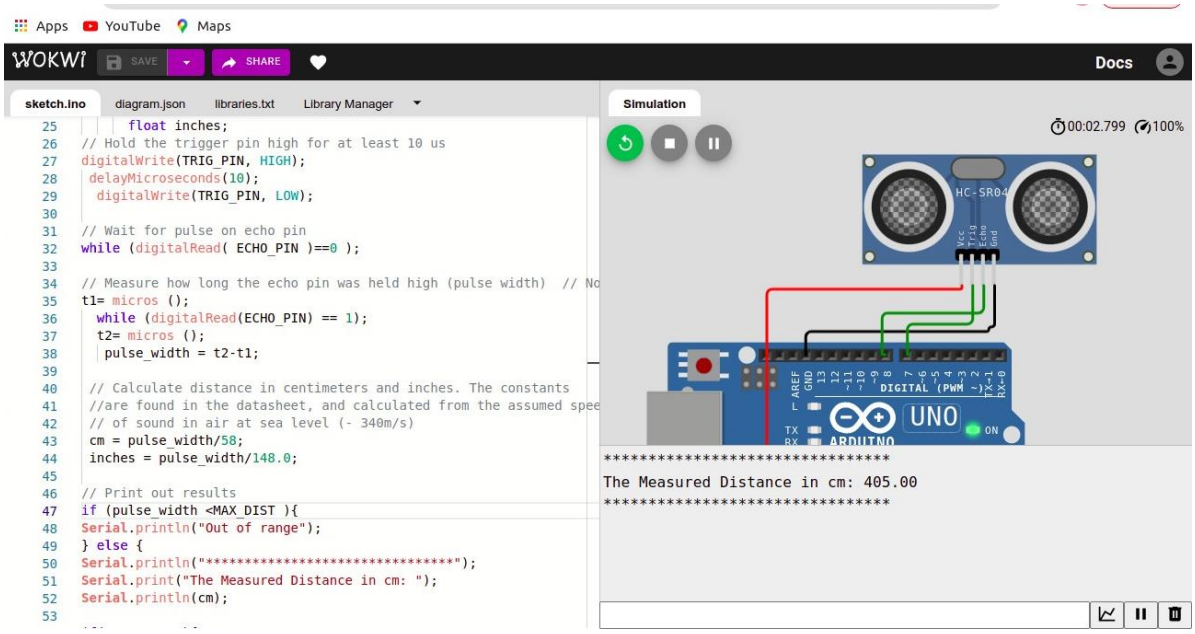
```
   float cm; float
     inches;
//Hold the trigger pin high for at least 10 us
digitalWrite(TRIG_PIN, HIGH);
delayMicroseconds(10); digitalWrite(TRIG_PIN,
LOW);

//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 willoverflow 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/238;
 inches = pulse_width/34;

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 the distance is less than 100 cms ,it Alerts.

If the distance is more than 100 cms,it won't Alert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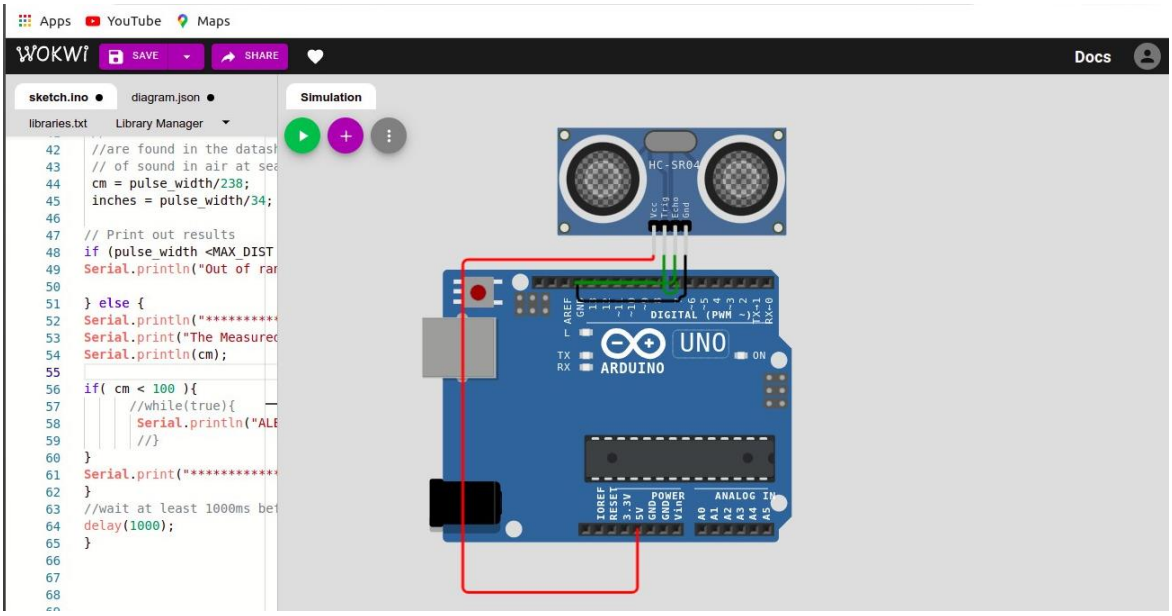
****
The Measured Distance in cm: 405.00
****

CONNECTION :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