

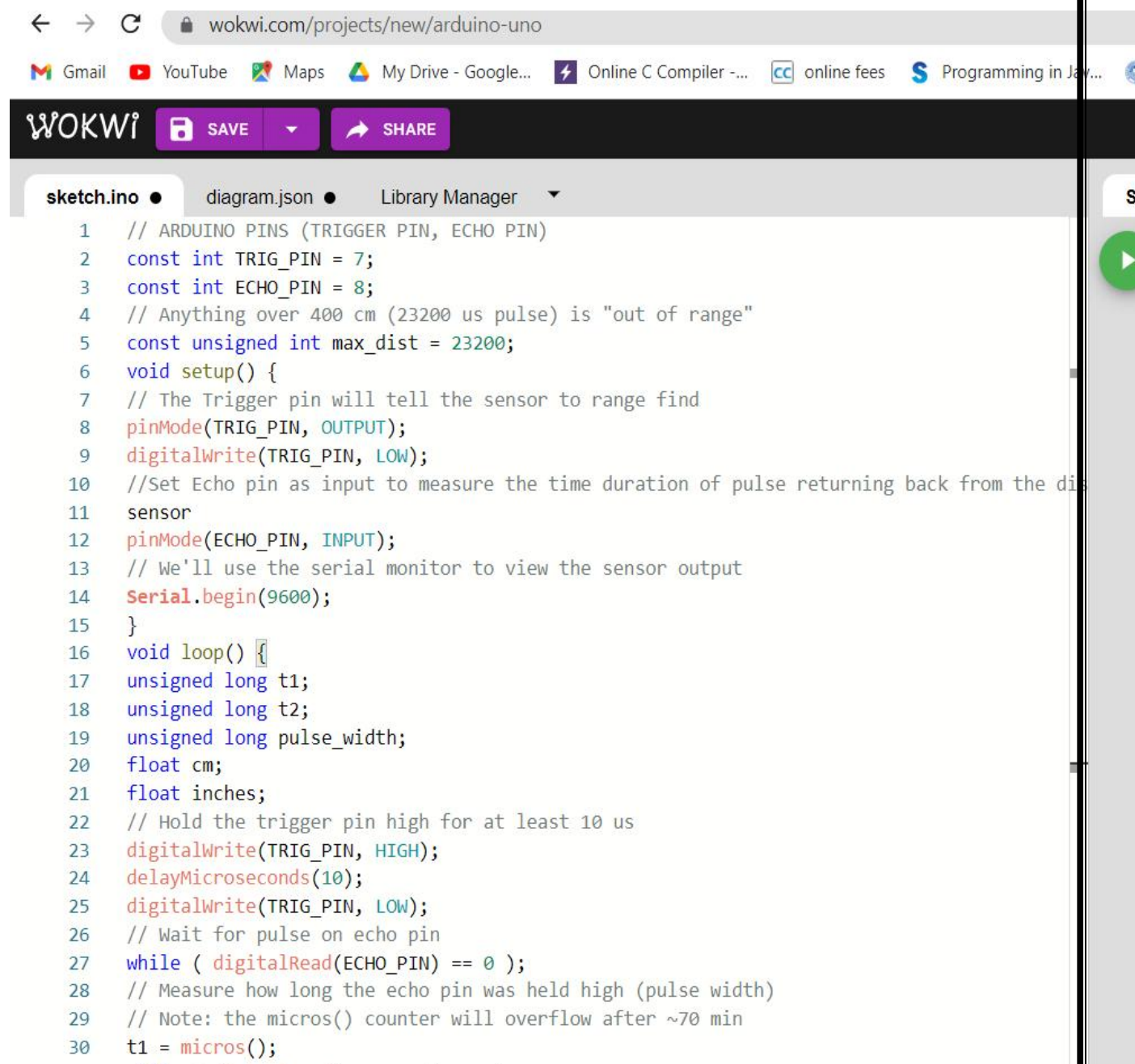
ASSIGNMENT-4

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Screenshot :



```
1 // ARDUINO PINS (TRIGGER PIN, ECHO PIN)
2 const int TRIG_PIN = 7;
3 const int ECHO_PIN = 8;
4 // Anything over 400 cm (23200 us pulse) is "out of range"
5 const unsigned int max_dist = 23200;
6 void setup() {
7 // The Trigger pin will tell the sensor to range find
8 pinMode(TRIG_PIN, OUTPUT);
9 digitalWrite(TRIG_PIN, LOW);
10 //Set Echo pin as input to measure the time duration of pulse returning back from the dis
11 sensor
12 pinMode(ECHO_PIN, INPUT);
13 // We'll use the serial monitor to view the sensor output
14 Serial.begin(9600);
15 }
16 void loop() {
17 unsigned long t1;
18 unsigned long t2;
19 unsigned long pulse_width;
20 float cm;
21 float inches;
22 // Hold the trigger pin high for at least 10 us
23 digitalWrite(TRIG_PIN, HIGH);
24 delayMicroseconds(10);
25 digitalWrite(TRIG_PIN, LOW);
26 // Wait for pulse on echo pin
27 while ( digitalRead(ECHO_PIN) == 0 );
28 // Measure how long the echo pin was held high (pulse width)
29 // Note: the micros() counter will overflow after ~70 min
30 t1 = micros();
```

Code:

```
// ARDUINO PINS (TRIGGER PIN, ECHO PIN)

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 time duration of pulse returning 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("Out of range!!!");
} else{
  Serial.println("*****");
  Serial.print("Distance Measured (cm) : ");
  Serial.println(cm);
  if(cm<100){
    // while(true){
    Serial.println("Alert!!!");
    // }
  }
  Serial.print("*****");
}
// Wait at least 1000ms before next measurement
delay(1000);
}

```

Output:

Distance Measured (cm) : 2.09

Alert!!!

Distance Measured (cm) : 2.02

Alert!!!