

# CONNECTION IN WOKWI FOR ULTRASONIC SENSOR

## ASSIGNMENT – 4

### PROGRAM AND BLOCK DIAGRAM IN WOKWI

WOKWI

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```
1 const int TRIG_PIN = 27 ;
2 const int ECHO_PIN = 14;
3 const unsigned int MAX_DIST = 23200;
4 void setup() {
5   pinMode(TRIG_PIN, OUTPUT);
6   digitalWrite(TRIG_PIN, LOW);
7   pinMode(ECHO_PIN, INPUT );
8   Serial.begin(9600);
9 }
10 void loop() {
11   unsigned long t1;
12   unsigned long t2;
13   unsigned long pulse_width;
14   float cm;
15   float inches;
16   digitalWrite(TRIG_PIN, HIGH);
17   delayMicroseconds(10);
18   digitalWrite(TRIG_PIN, LOW);
19   while (digitalRead( ECHO_PIN )!=0 );
20   t1= micros ();
21   while (digitalRead(ECHO_PIN) == 1);
22   t2= micros ();
23   pulse_width = t2-t1;
24   cm=pulse_width / 58 ;
25   inches = pulse_width/148.0;
26   if (pulse_width >MAX_DIST){
27     Serial.println("Out of range");
28   } else {
29     Serial.println("*****");
30     Serial.print("The Measured Distance in cm: ");
31     Serial.print(cm);
32     Serial.println();
33   }
34 }
```

Simulation

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Out of range  
Out of range  
Out of range

WOKWI

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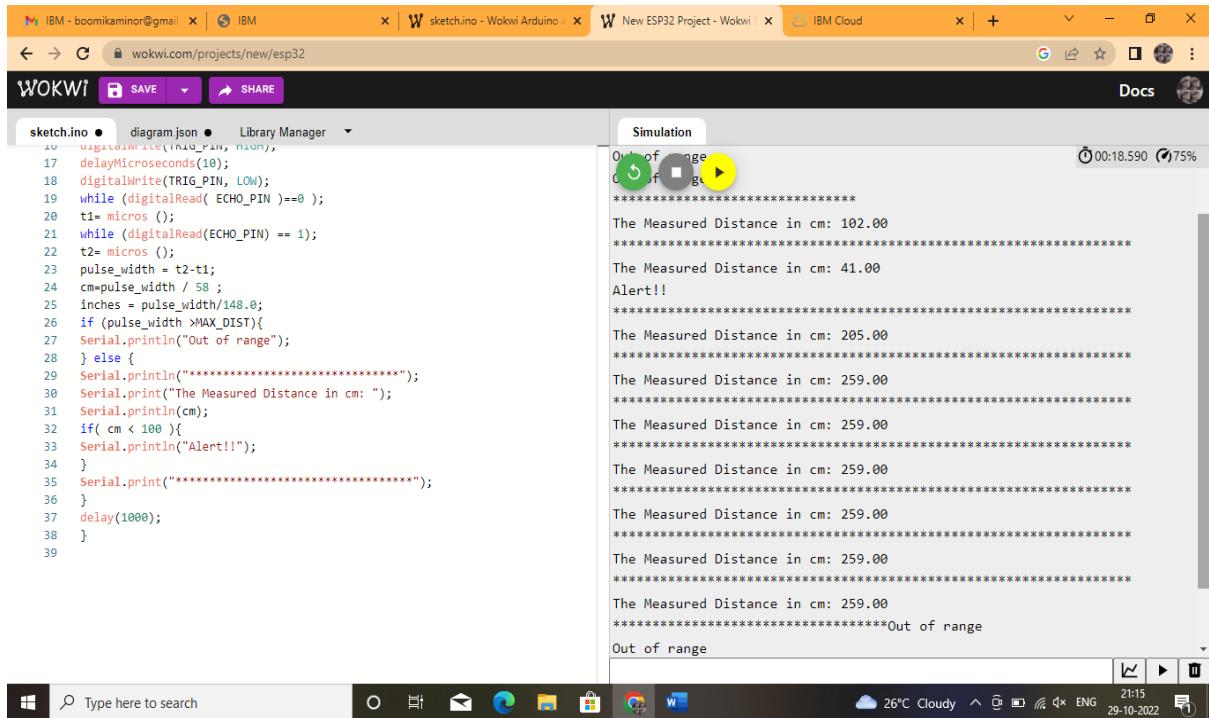
```
10 digitalWrite(TRIG_PIN, HIGH);
11 delayMicroseconds(10);
12 digitalWrite(TRIG_PIN, LOW);
13 while (digitalRead( ECHO_PIN )!=0 );
14 t1= micros ();
15 while (digitalRead(ECHO_PIN) == 1);
16 t2= micros ();
17 pulse_width = t2-t1;
18 cm=pulse_width / 58 ;
19 inches = pulse_width/148.0;
20 if (pulse_width >MAX_DIST){
21   Serial.println("Out of range");
22 } else {
23   Serial.println("*****");
24   Serial.print("The Measured Distance in cm: ");
25   Serial.print(cm);
26   Serial.println();
27   if( cm < 100 ){
28     Serial.println("Alert!!");
29   }
30   Serial.print("*****");
31 }
32 delay(1000);
33 }
```

Simulation

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Out of range  
Out of range  
Out of range

## OUTPUT



LINK FOR WOKWI : <https://wokwi.com/projects/346868456965014098>

## CODE

```
const int TRIG_PIN = 7 ;
const int ECHO_PIN = 8;
const unsigned int MAX_DIST = 23200;
void setup() {
  pinMode(TRIG_PIN, OUTPUT);
  digitalWrite(TRIG_PIN, LOW);
  pinMode(ECHO_PIN, INPUT ) ;
  Serial.begin(9600);
}
void loop() {
  unsigned long t1;
  unsigned long t2;
  unsigned long pulse_width;
  float cm;
  float inches;
```

```

digitalWrite(TRIG_PIN, HIGH);
delayMicroseconds(10);
digitalWrite(TRIG_PIN, LOW);
while (digitalRead( ECHO_PIN )==0 );
t1= micros ();
while (digitalRead(ECHO_PIN) == 1);
t2= micros ();
pulse_width = t2-t1;
cm=pulse_width / 58 ;
inches = pulse_width/148.0;
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("*****");
}
delay(1000);
}

```

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