

ASSIGNMENT-4

Assignment Date	26 October 2022
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Maximum Marks	
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Wokwi code:

```
//Define pins for ultrasonic sensor
#define trig 7
#define echo 6
void setup() {
    // put your setup code here, to run once:
    Serial.begin(9600); //set the baud rate of serial communication to 9600
    pinMode(trig, OUTPUT); //trig will have output pulses
    pinMode(echo, INPUT); //echo will input pulses
}
void loop() {
    // Duration will be the input pulse and distance will be
    // the distance to the obstacle in centimetres
    int duration, distance;
    digitalWrite(trig, HIGH);
    delay(1); //Output pulse with 1ms width on trig
    digitalWrite(trig, LOW);
    //Measure the pulse input in echo pin
    duration=pulseIn(echo, HIGH); //blocks the program to ewait
    // for the echo to go HIGH
    //Distance is half the duration multilplied by 0.342 cm/μs
    distance=(duration*0.0343/2);
    //waiting 60 ms
    delay (60);
    Serial.print("Distance :");
    Serial.print (distance);
```

```
Serial.println("cm");
```

```
}
```

CODE IMAGES:

The screenshot shows the Wokwi IDE interface. On the left, the code for 'wokwiultrasonic.ino' is displayed. The code defines pins for an ultrasonic sensor (trig at 7, echo at 6) and uses the pulseIn function to measure the distance. The loop prints the distance every 60ms. On the right, the 'Simulation' window shows a 3D model of an Arduino Uno connected to an HC-SR04 ultrasonic sensor. The output console shows a series of 'Distance : 399cm' readings.

```
1 //Define pins for ultrasonic sensor
2 #define trig 7
3 #define echo 6
4 void setup() {
5   // put your setup code here, to run once:
6   Serial.begin(9600); //set the baud rate of serial communication to 9600
7   pinMode(trig, OUTPUT); //trig will have output pulses
8   pinMode(echo, INPUT); //echo will input pulses
9 }
10 void loop() {
11   // Duration will be the input pulse and distance will be
12   // the distance to the obstacle in centimetres
13   int duration, distance;
14   digitalWrite(trig, HIGH);
15   delay(1); //Output pulse with 1ms width on trig
16   digitalWrite(trig, LOW);
17   //Measure the pulse input in echo pin
18   duration=pulseIn(echo, HIGH); //blocks the program to await
19   // for the echo to go HIGH
20   //Distance is half the duration multiplied by 0.342 cm/us
21   distance=(duration*0.0343/2);
22   //waiting 60 ms
23   delay (60);
24   Serial.print("Distance :");
25   Serial.print (distance);
26   Serial.println("cm");
27 }
28 }
```

Simulation

Distance : 399cm
Distance : 399cm
Distance : 399cm
Distance : 399cm
Distance : 399cm
Distance : 399cm
Distance : 399cm

The screenshot shows the Wokwi IDE interface. On the left, the code for 'wokwiultrasonic.ino' is displayed. The code defines pins for an ultrasonic sensor (trig at 7, echo at 6) and uses the pulseIn function to measure the distance. The loop prints the distance every 60ms. On the right, the 'Simulation' window shows a 3D model of an Arduino Uno connected to an HC-SR04 ultrasonic sensor. The output console shows a series of 'Distance : 15cm' readings.

```
1 //Define pins for ultrasonic sensor
2 #define trig 7
3 #define echo 6
4 void setup() {
5   // put your setup code here, to run once:
6   Serial.begin(9600); //set the baud rate of serial communication to 9600
7   pinMode(trig, OUTPUT); //trig will have output pulses
8   pinMode(echo, INPUT); //echo will input pulses
9 }
10 void loop() {
11   // Duration will be the input pulse and distance will be
12   // the distance to the obstacle in centimetres
13   int duration, distance;
14   digitalWrite(trig, HIGH);
15   delay(1); //Output pulse with 1ms width on trig
16   digitalWrite(trig, LOW);
17   //Measure the pulse input in echo pin
18   duration=pulseIn(echo, HIGH); //blocks the program to await
19   // for the echo to go HIGH
20   //Distance is half the duration multiplied by 0.342 cm/us
21   distance=(duration*0.0343/2);
22   //waiting 60 ms
23   delay (60);
24   Serial.print("Distance :");
25   Serial.print (distance);
26   Serial.println("cm");
27 }
28 }
```

Simulation

Distance : 15cm
Distance : 15cm
Distance : 15cm
Distance : 15cm
Distance : 15cm
Distance : 15cm
Distance : 15cm

LINK:

<https://wokwi.com/projects/347054264215929428>

