

Assignment date	07 November 2022
Student Name	Ms.M.Dhanalakshmi
Student Roll Number	821719106010
Maximum Marks	2 Marks

Question-4

Write code and connections in wokwi for the ultrasonic sensor

Code

```

/*
  Ultrasonic Simple
  Prints the distance read by an ultrasonic sensor in
  centimeters. They are supported to four pins ultrasound
  sensors (like HC-SC04) and three pins (like PING))
  and Seed Studio sensors).

  The circuit:
  * * Module HC-SC04 (four pins) or PING))) (and other with
    three pins), attached to digital pins as follows:

  -----
  | HC-SC04 | Arduino |   | 3 pins | Arduino |
  -----
  |   Vcc   |   5V    |   |   Vcc   |   5V    |
  |   Trig  |   12    | OR |   SIG  |   13    |
  |   Echo  |   13    |   |   Gnd   |   GND    |
  |   Gnd   |   GND   |   | -----
  -----

  Note: You do not obligatorily need to use the pins defined above

  By default, the distance returned by the read()
  method is in centimeters. To get the distance in inches,
  pass INC as a parameter.
  Example: ultrasonic.read(INC)

  created 3 Apr 2014
  by Erick Simões (github: @ErickSimoes | twitter: @AloErickSimoes)
  modified 23 Jan 2017
  by Erick Simões (github: @ErickSimoes | twitter: @AloErickSimoes)
  modified 03 Mar 2017
  by Erick Simões (github: @ErickSimoes | twitter: @AloErickSimoes)
  modified 11 Jun 2018
  by Erick Simões (github: @ErickSimoes | twitter: @AloErickSimoes)

  This example code is released into the MIT License.
*/

#include "Ultrasonic.h"

/*
  Pass as a parameter the trigger and echo pin, respectively,
  or only the signal pin (for sensors 3 pins), like:
  Ultrasonic ultrasonic(13);
*/
Ultrasonic ultrasonic(12, 13);
int distance;

```

```

void setup() {
  Serial.begin(9600);
}

void loop() {
  // Pass INC as a parameter to get the distance in inches

  distance = ultrasonic.read(CM);

  Serial.print("Distance in CM: ");
  Serial.println(distance);

  distance = ultrasonic.read(INC);

  Serial.print("Distance in Inches: ");
  Serial.println(distance);

  delay(1000);
}

```

Output

The screenshot shows the Wokwi IDE interface. On the left, the code for 'hc-sr04-Ultrasonic-Simulation.ino' is displayed. It includes the 'Ultrasonic' library and uses the 'read' method with 'CM' and 'INC' parameters to measure distance. The 'setup' function initializes the serial port at 9600 baud. The 'loop' function reads the distance in centimeters, prints it, then reads the distance in inches, prints it, and delays for 1000ms before repeating.

The simulation window on the right shows an Arduino Uno board connected to an HC-SR04 ultrasonic sensor. The sensor's trigger pin is connected to digital pin 12, and its echo pin is connected to digital pin 13. The console output shows the following sequence of results:

```

Distance in Inches: 41
Distance in CM: 104
Distance in Inches: 41
Distance in CM: 105
Distance in Inches: 41
Distance in CM: 105
Distance in Inches: 41

```

The simulation is running at 65% speed, and the elapsed time is 00:11.331.