**PRACTICAL – 7**

**Q. Write a program to use Ultrasonic sensor with LCD to get output on its screen.**

**Hardware:-**

* Raspberry pi
* Ultrasonic Sensor HC-SR04
* LCD Display
* 10k ohm potentiometer
* Breadboard and wires

**Connection:-**

**Ultrasonic Sensor HC-SR04:**

The HC-SR04 Ultrasonic Module has 4 pins, Ground, VCC, Trig and Echo. The Ground and the VCC pins of the module needs to be connected to the Ground and the 5 volts pins on the Arduino Board respectively and the trig and echo pins to any Digital I/O pin on the Arduino Board.

* The HC-SR04 sensor attach to the Breadboard
* The Sensor VCC connect to the Raspberry pi +5V
* The Sensor GND connect to the GND
* The Sensor Trig connect to the Raspberry pi I/O 9
* The Sensor Echo connect to the Raspberry pi I/O 10

**Code:-**

import Rpi.GPIO as GPIO

import time

GPIO.setmode(GPIO.BCM)

GPIO\_TRIGGER=18

GPIO\_ECHO24

GPIO.setup(GPIO\_TRIGGER,GPIO.OUT)

GPIO.setup(GPIO\_-ECHO,GPIO.IN)

Def distance():

GPIO.output(GPIO\_TRIGGER,True)

Time.sleep(0.0001)

GPIO.output(GPIO\_TRIGGER,False)

StartTime=time.time()

StopTime=time.time()

while GPIO.input(GPIO\_ECHO) == 0:

StartTime = time.time()

while GPIO.inut(GPIO\_ECHO) ==1:

StopTime=time.time()

TimeElapsed=StopTime-StartTime

distance=(TimeElapsed \* 34300)/2

Return distance

if\_\_name\_\_ == ‘\_\_main\_\_:

try:

while True:

distance=distance()

print(“Me91asured Distance=%.1f cm”%dist)

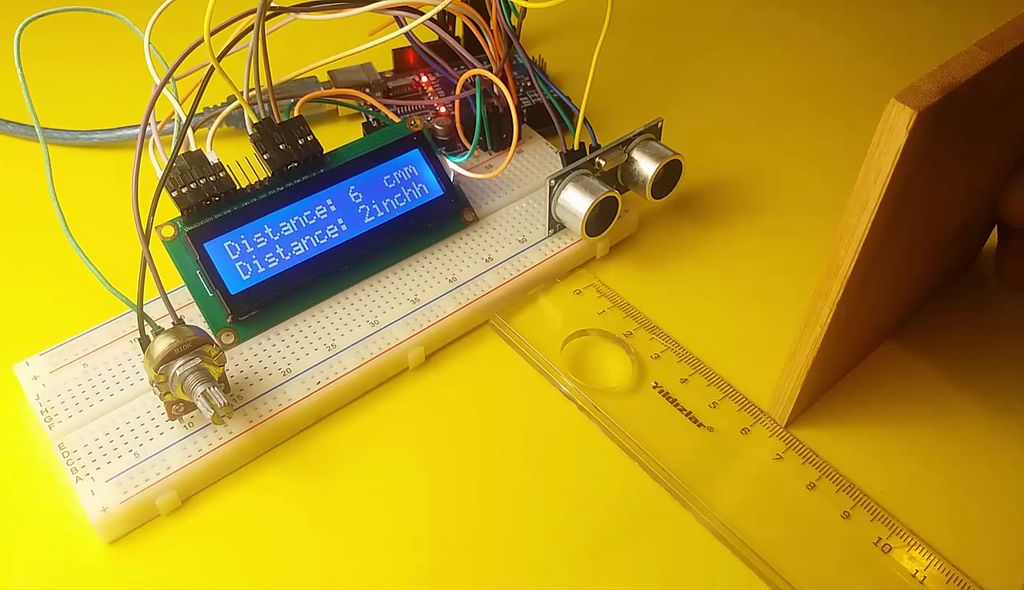
time.sleep(1)

except KeyboardInterrupt:

print(“Measur9ement stopped by user”)

GPIO.cleanup()

**OutPut:-**

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