Shaan Subbaiah B C - 1BM18CS096

Program no – 11

Program Title – Measure distance using an Ultrasonic Sensor, LCD

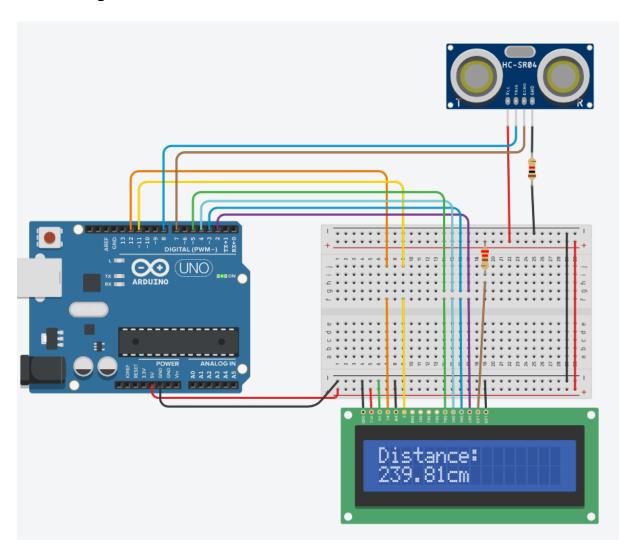
Aim

To display distance measured of an object on the LCD panel using an Ultrasonic Sensor.

Hardware Required

- Arduino Board
- Ultrasonic Sensor HC-SR04
- 16x2 LCD
- 2x 240 Ohm Resistor

Circuit Diagram



#include < liquid (vystal.h) Liquid Crystal .lcd (12,11, 5, 4, 3, 2); Void .setup () { lcd.begin (16,2); lcd.peint ("Distance:"); pin Mode (7, INPUT); pin Mode (8, OUTPUT); Serial.begin (9600); Void .loop () { lcd.set(vstor (0,1); digital/vite (8, M(spH); digital/vite (8, M(spH); digital/vite (8, LOW); float duration = pulse In (7, H(spH); float duration = duration * 0.034 /2; lcd.print ((String) dust + "cm"); Serial.printlin ((String) dust + "cm");	Shaa	n Subbaiah	16M18CS096	Classmate Date Page
Void setup () { lcd.begin (16,2); lcd.print ("Distance:"); pin Mode (7, INPUT); pin Mode (8, OUTPUT); Serial.begin (9600); Void loop () { lcd.set (user (0,1); digital Write (8, H(SH); delay Microseconds (10); digital Write (8, LOW); float duration = pulse In (7, H(SH); float dist = duration * 0.034/2; lcd.print ((String) dist + "Cm");	#inc	lude < liqu	id Crystal . h>	
pin Mode (7, INPUT); pin Mode (8, OUTPUT); Serial begin (9600); Void loop () { Led set (ursor (0,1); digital Write (8, HIGH); delay Microseconds (10); digital Write (8, LOW); float duration = pulse In (7, HIGH); float dist = duration * 0.034 /2; Led paint ((String) dist + "cm");	Liqu	id Crystal	ded (12, 11, 5	, 4, 3, 2);
pin Mode (7, INPUT); pin Mode (8, OUTPUT); Serial begin (9600); Void loop () { Led set (ursor (0,1); digital Write (8, HIGH); delay Microseconds (10); digital Write (8, LOW); float duration = pulse In (7, HIGH); float dist = duration * 0.034 /2; Led paint ((String) dist + "cm");	void	setup () {	, ,	+
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delay Microseconds (10); digital Write (8, LOW); float duration = pulse In (7, HIGH); float dist = duration * 0.034/2; led. print ((String) dist + "cm");		Icd. set Curs	vor (0,1);	
float duration = pulse In (7, HIGH); float dist = duration * 0.034/2; lcd. print ((String) dist + "cm");		dela Micro	(8, H(GH);	
lcd. print ((String) diet + "cni");		digital Wit	i (8, LOW);	
lcd. print ((String) diet + "cni");		float du	sation = pulse	In (7, 416H);
·		float di	it = diretie	m * 0.034/2;
Serial . println ((String) dist + "cm");		lcd. pri	nt ((String) die	t + "cm");
	y	Serial.p	wintln ((String)	dist + "cm");

Code:

```
// Shaan Subbaiah B C - 1BM18CS096
// Distance using HC-SR04
/*
 The circuit:
* LCD RS pin to digital pin 12
* LCD Enable pin to digital pin 11
* LCD D4 pin to digital pin 5
* LCD D5 pin to digital pin 4
* LCD D6 pin to digital pin 3
* LCD D7 pin to digital pin 2
* LCD R/W pin to ground
* LCD VSS pin to ground
* LCD VCC pin to 5V
* 10K resistor:
* ends to +5V and ground
* wiper to LCD VO pin (pin 3)
*/
#include <LiquidCrystal.h>
// initialize the library with the numbers of the interface pins
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
void setup() {
 // set up the LCD's number of columns and rows:
 Icd.begin(16, 2);
 // Print a message to the LCD.
 lcd.print("Distance:");
 pinMode(7, INPUT);
 pinMode(8, OUTPUT);
 Serial.begin(9600);
}
void loop() {
 // set the cursor to column 0, line 1
 // (note: line 1 is the second row, since counting begins with 0):
 lcd.setCursor(0, 1);
 digitalWrite(8, HIGH);
```

```
delayMicroseconds(10);
digitalWrite(8, LOW);

float duration = pulseIn(7, HIGH);
float dist = duration*0.034/2;

lcd.print((String)dist+"cm");
Serial.println((String)dist+"cm");
}
```

Observation / Output

Distance is displayed on the LCD panel.