

RGUKT BASAR

Nirmal (dist.), Telangana-504107

Distance Measurement Device Using Arduino UNO

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ASSIGNMENT REPORT

Instrumentation and Control System [ME2202]

(Department of Mechanical Engineering)

Submitted To: Mr. Anpat Rahul M. (HOD, Mechanical Engineering)

Distance Measurement Device Using Arduino UNO

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(from Department of Mechanical Engineering)

Submitted To:

Mr. Anpath Rahul M.
(HOD ,Mechanical Engineering)

Components Used

S.No.	Components	Quantity	Price
1.	Arduino UNO	x1	₹ 700
2.	USB 2.0 Printer Cable	x1	₹90
3.	LCD 16x2	x1	₹ 190
4.	Ultrasonic Distance Sensor	x1	₹170
5.	Potentiometer 10 Ω	x1	₹10
6.	Breadboard	x1	₹125
7.	Jumper wire(male-male)	x10	₹40
8.	Resistor 1k Ω	x1	₹2
9.	Connecting wires	-	-
		Total	₹ 1327

Circuit and Schematics diagrams

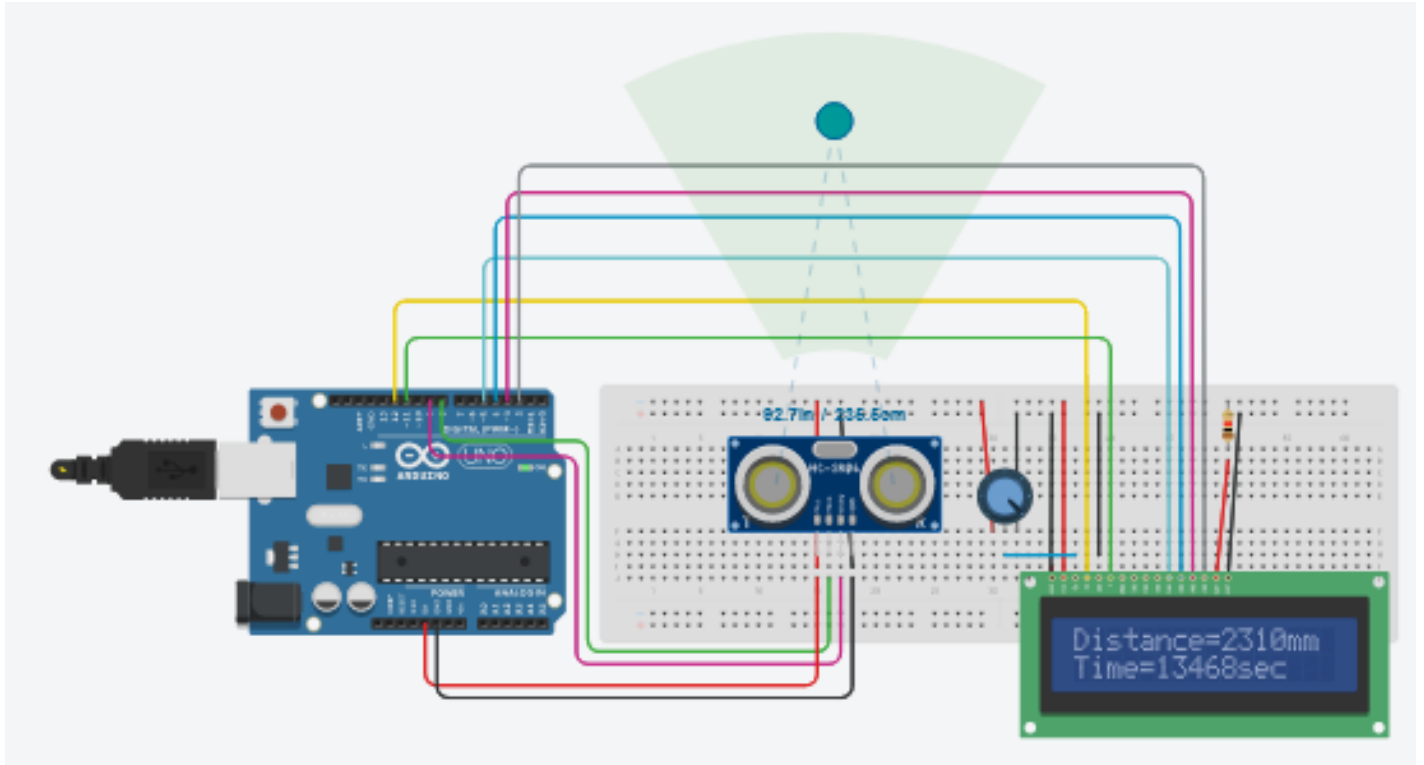


Fig 1. Circuit View

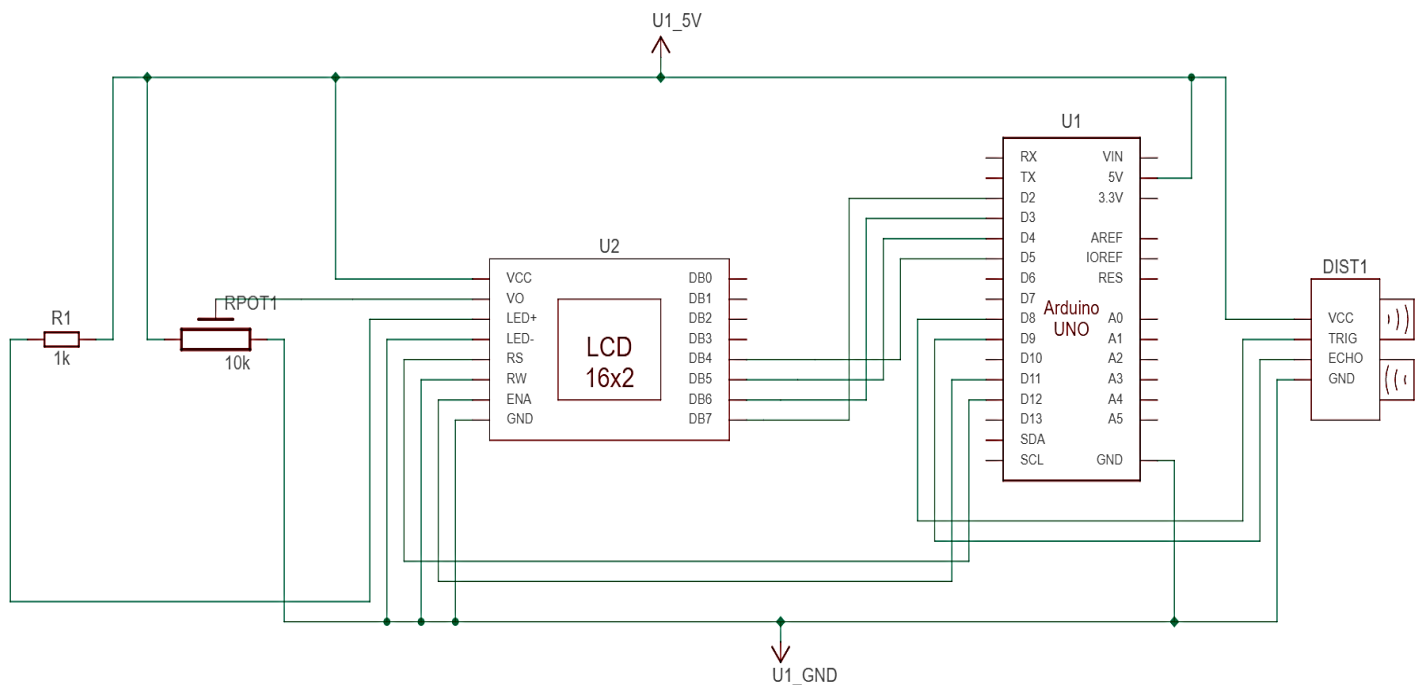


Fig 2. Schematic View

Code :

```
/*DISTANCE MEASUREMENT USING ULTRASONIC SENSOR AND ARDUINO*/  
#include <LiquidCrystal.h>  
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);  
const int trigPin=8 ;  
const int echoPin=9;  
long Duration,Distance;  
void setup(){  
  lcd.begin(16, 2);  
  lcd.setCursor(0,0);  
  pinMode(trigPin, OUTPUT);  
  pinMode(echoPin, INPUT);  
  Serial.begin (9600);  
}  
void loop() {  
  digitalWrite(trigPin,HIGH);  
  delayMicroseconds(20);  
  digitalWrite(trigPin, LOW);  
  delayMicroseconds(20);  
  Duration = pulseIn(echoPin, HIGH);  
  Distance = ((Duration/2)/29.1);  
  
  lcd.clear();  
  lcd.setCursor(0,0);  
  lcd.print("Distance=");  
  lcd.print(Distance*10);  
  lcd.print("mm");  
  
  lcd.setCursor(0,1);  
  lcd.print("Time=");  
  lcd.print(Duration);  
  lcd.print("sec");  
  delay(500);  
  
  Serial.print("Distance in cm =");  
  Serial.println(Distance);  
}
```

Team Members:

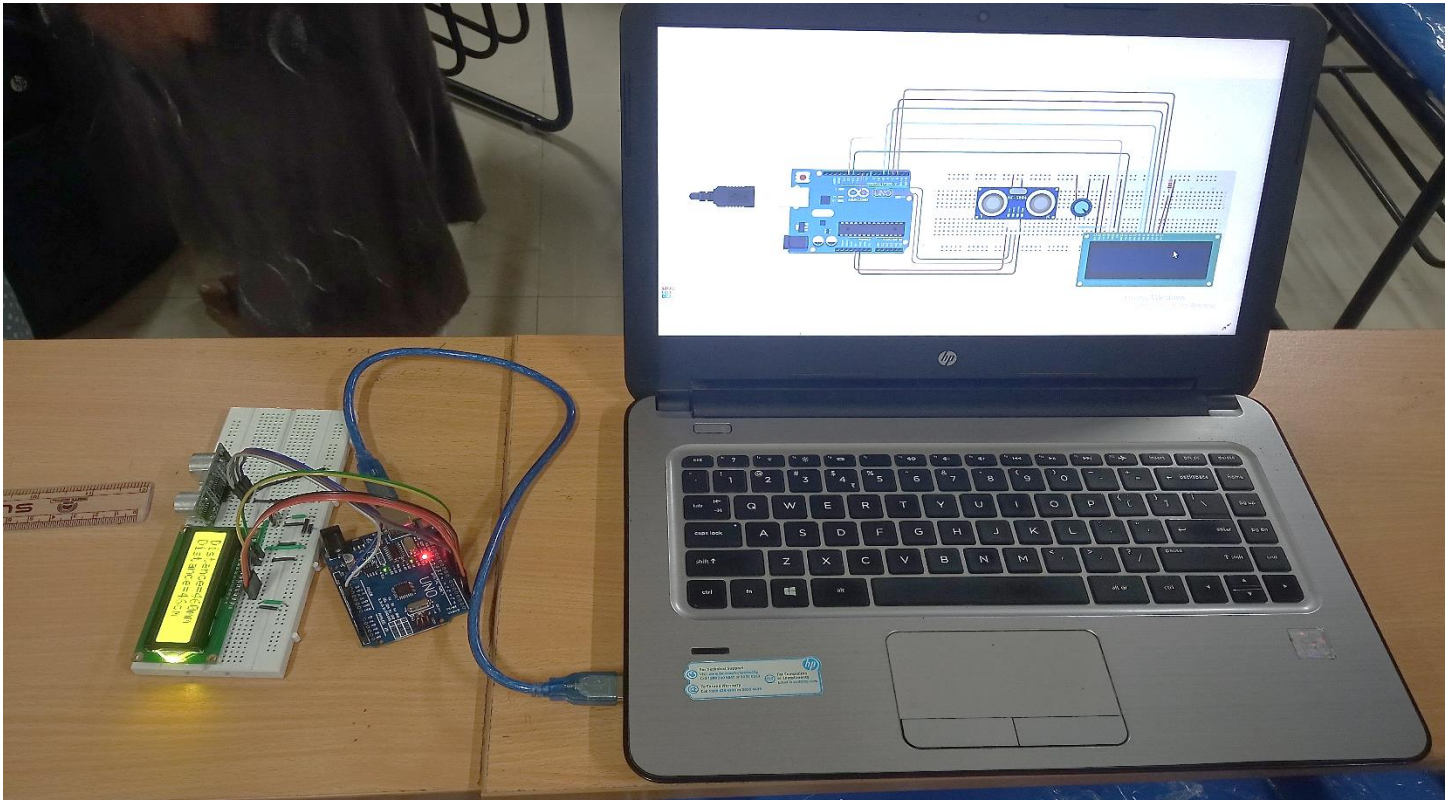


Fig 3.Distance Measurement device using Arduino Assembly.

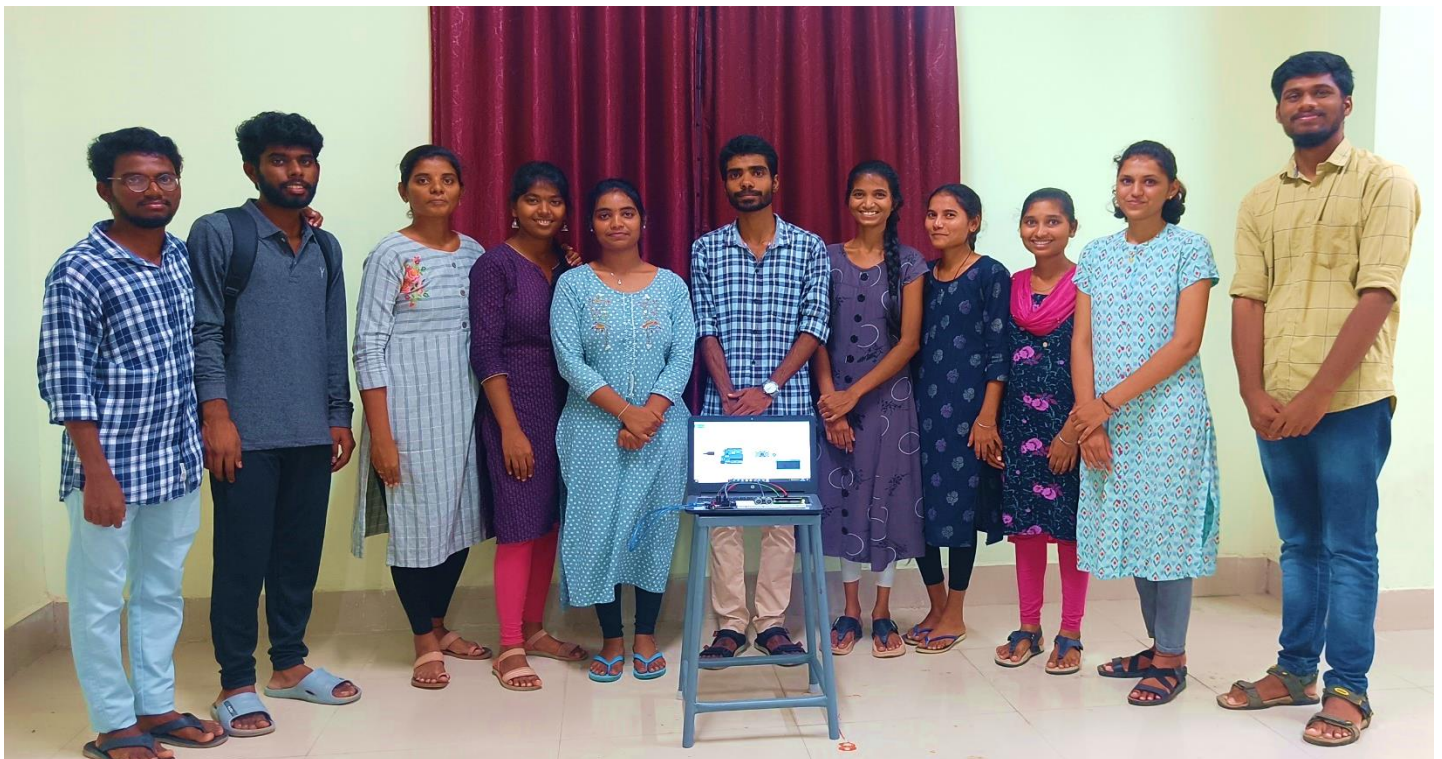


Fig 4. Gaddala Sridhar Babu ; Kopparthi Stevenkanth ; Kunta bhavitha ; Chidem Anitha ; Vinoothna Nadikatla ; Ravi Shankar Sharma ; Samara Pravalika ;Bargedi Srilatha ; Dhanrekula Anjali ; Gokula Vaishnavi ; Pasunuri Shivaram

Reference:

- ✓ Tinker Cad:
https://www.tinkercad.com/things/duQoa0H3JyH?sharecode=b_eDbakqZszPPoulH_fyR_CcRTOx30j_knb31ny6Y9M
- ✓ Arduino IDLE :
<https://www.arduino.cc/en/software>
- ✓ Arduino-Display Interference :
<https://www.arduino.cc/en/Tutorial/LibraryExamples/HelloWorld>
- ✓ Arduino-Ultrasonic sensor Interference :
<https://docs.arduino.cc/built-in-examples/sensors/Ping>