UNIVERSITY OF INFORMATION TECHNOLOGY & SCIENCES

(UITS)

ASSIGNMENT
on
INTERNET OF THINGS LAB

Submitted To

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Submitted By

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Batch	50
Section	7B1
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Signature

Temperature and Ultrasonic Sensor

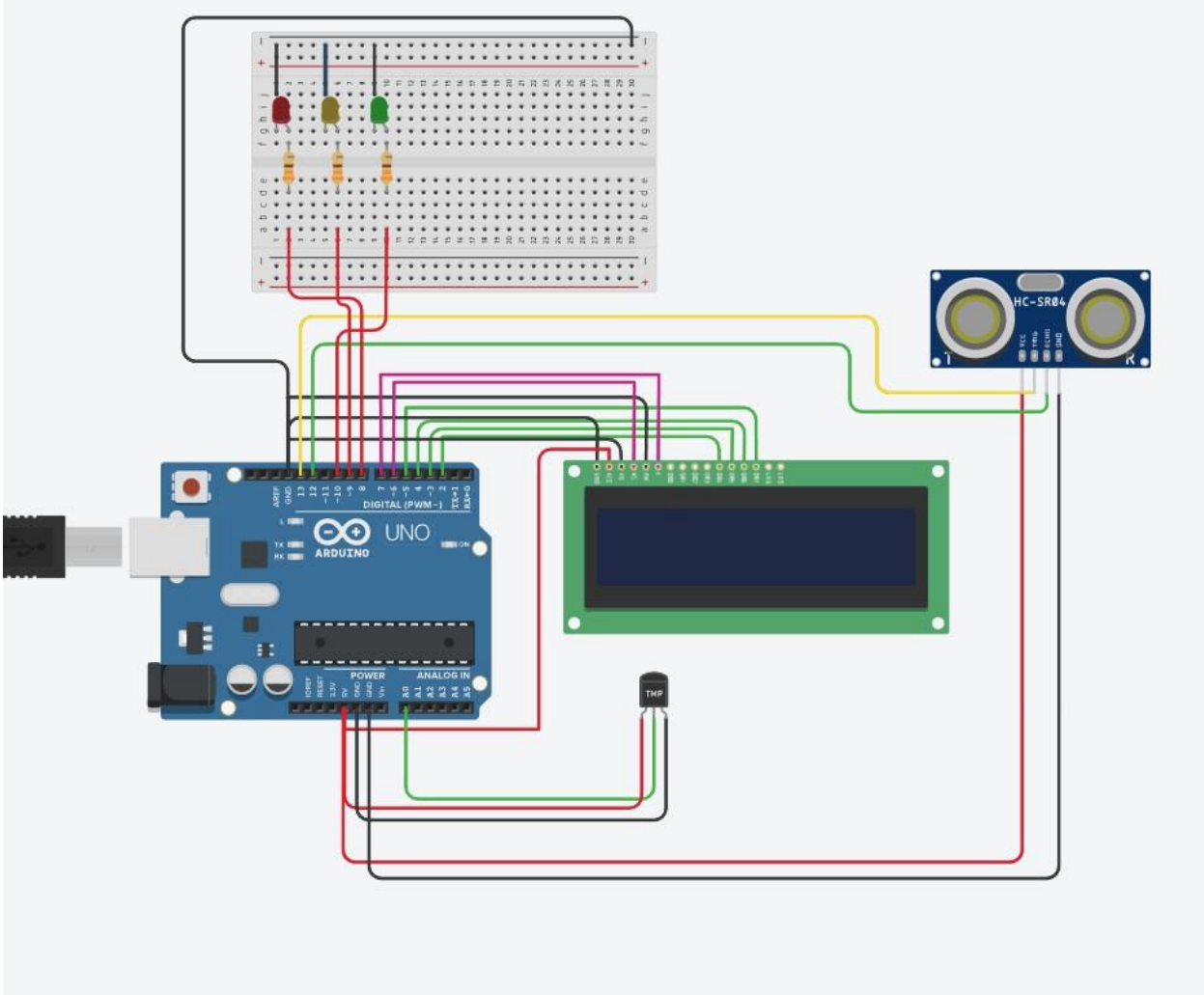
Title: Take input from ultrasonic sensor and temperature sensor. Show the distance in cm and temperature in celsius in LCD. Also show the distance and temperature in serial monitor.

Necessary Equipment:

1. Arduino UNO R3
2. Breadboard
3. 330 Ohm resistor
4. 3 LED
5. Ultrasonic distance sensor
6. LCD

Objectives:

1. Temperature >= 75 degree celsius and Distance>=175 cm, Turn on RED LED only.
2. Temperature >= 50 and <75 and Distance >=150 cm and <175 cm, Turn on YELLOW LED only.
3. Temperature <50 and Distance<150 cm, Turn on GREEN LED only.



Code:

```
#include <LiquidCrystal.h>
char temp[]
="Temprature_c:"; char
dist[] = "Distance: ";
int trigPin=13;
int
echoPin=12;
int ledPin[] = {8,9,10};
int pinCount = 3;
LiquidCrystal lcd(6,7,2,3,4,5); // Rs, E, D4, D5 D6, D7

void setup()
{
  pinMode(A0,INPUT);
```

```
 pinMode(trigPin,
 OUTPUT);
 pinMode(echoPin,
 INPUT);

 for(int i=0;i<pinCount;i++){
 pinMode(ledPin[i],
 OUTPUT);
 }

 lcd.begin(16,2);
 Serial.begin(9600);
 delay(1000);
}

void loop()
{

 int sensorValue =
 analogRead(A0); float
 mV=(sensorValue/1023.0)*5000;
 int tempCel=mV/10;
 Serial.println(tempCel);


 digitalWrite(trigPin,
 LOW);
 delayMicroseconds(2);
 digitalWrite(trigPin,
 HIGH);
 delayMicroseconds(10);
 digitalWrite(trigPin,
 LOW);

 long duration = pulseIn(echoPin, HIGH);
 float distance = (0.0332*duration)/2;


 if(tempCel >= 75 && distance >=
  175){ digitalWrite(ledPin[0],
  HIGH); delay(500);
  digitalWrite(ledPin[0], LOW);

 }else if(tempCel >= 50 && distance >= 150){
```

```
  digitalWrite(ledPin[1],
  HIGH); delay(500);
  digitalWrite(ledPin[1],
  LOW);
 }else{
  digitalWrite(ledPin[2],
  HIGH); delay(500);
  digitalWrite(ledPin[2],
  LOW);
 }


 lcd.setCursor(0,0);
 lcd.print(temp);

 lcd.setCursor(13,0);
 lcd.print(tempCel);

 Serial.println(temp);
 lcd.setCursor(0,1);
 lcd.print(dist);

 lcd.setCursor(9,1);
 lcd.print(distance);

 Serial.println(distance);
 delay(1000);

}
```