Assignment 5 Arduino Application

Released Date: Nov 13th

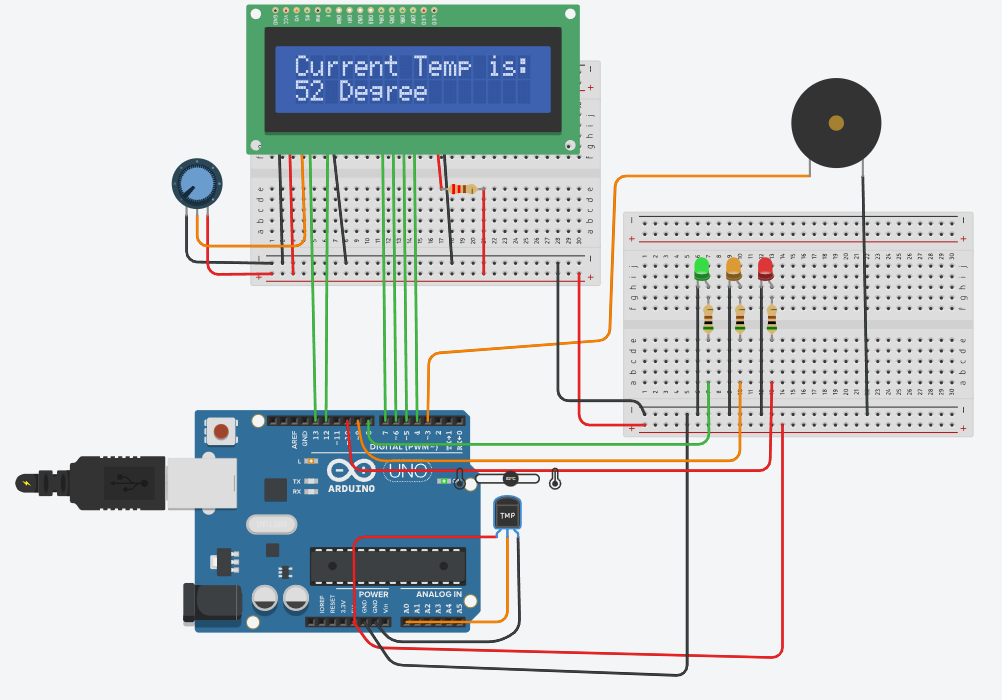
Version 1.0

Format: Name the document in the combination of name、ID and No. of Assignment.

**Example: Ping Yi\_23\_Assignment1.doc**

**Email the document to “pingy@wxit.edu.cn” before Nov 20th.**

**Task** Design a circuit using a temperature sensor, three LEDs indicate different levels of temperature stages, the detailed information will be displayed on LCD1602. Once the simulated temperature is over the 60 degrees Celsius, then the piezo will give an alarm to indicate overheating.



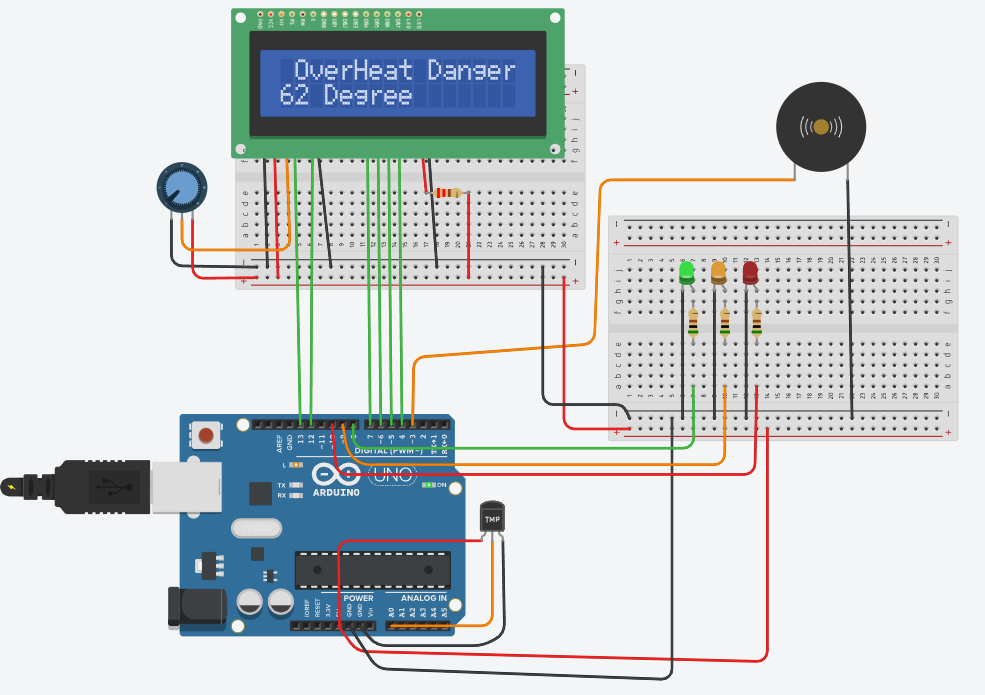


Figure 1 Application Structure and Requirement

1. #include <LiquidCrystal.h>
2. LiquidCrystal lcd(13, 12, 7, 6, 5, 4);
3. **int** baselineTemp=0;
4. **int** celsius=0;
5. **int** fahremheit=0;
6. unsigned **long** tepTimer ;
7. String ledColor[3]={"Red","Yellow","Blue"};
9. **void** setup(){
10. Serial.begin(9600);
11. pinMode(3,OUTPUT);
12. pinMode(8,OUTPUT);
13. pinMode(9,OUTPUT);
14. pinMode(10,OUTPUT);
15. lcd.begin(16,2);
16. lcd.setCursor(0,0);
17. lcd.print("Current Temp is:");
18. }
20. **void** loop(){
21. celsius = map(((analogRead(A0)-20)\*3.04), 0, 1023, -40, 125);
22. fahremheit = ((celsius \* 9)/5 + 32);
23. lcd.setCursor(0,1);
24. lcd.print(celsius);
25. lcd.setCursor(4,1);
26. lcd.print("Degree");
28. Serial.print(celsius);
29. Serial.print(" C, ");
30. Serial.print(fahremheit);
31. Serial.println(" F");
33. **if**(celsius<50){
34. lcd.setCursor(0,0);
35. lcd.print("Current Temp is:");
36. digitalWrite(8,HIGH);
37. digitalWrite(9,LOW);
38. digitalWrite(10,LOW);
39. digitalWrite(3,LOW);
41. }
42. **if**(celsius>=50&&celsius<60){
43. lcd.setCursor(0,0);
44. lcd.print("Current Temp is:");
45. digitalWrite(8,HIGH);
46. digitalWrite(9,HIGH);
47. digitalWrite(10,LOW);
48. digitalWrite(3,LOW);
50. }
51. **if**(celsius>=60){
52. lcd.setCursor(0,0);
53. lcd.print("Current Temp is:");
54. digitalWrite(8,HIGH);
55. digitalWrite(9,HIGH);
56. digitalWrite(10,HIGH);
57. digitalWrite(3,HIGH);
59. }
60. }