Alameda, Khaiza R.

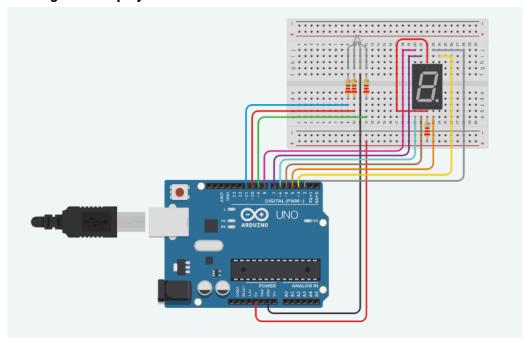
Jul 26, 2025

BSITFS-A

ITELEC3 - IT Elective 3

Combination Project

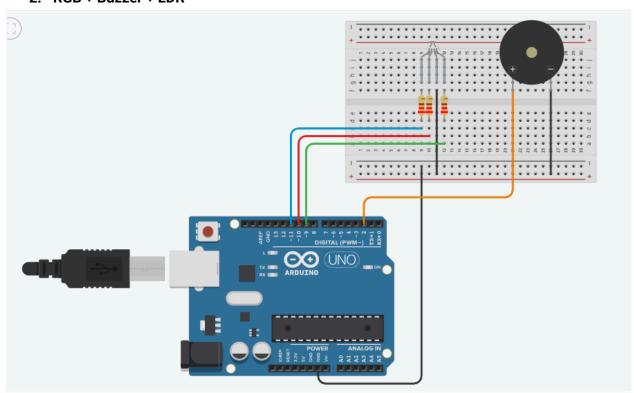
1. RGB + 7 Segment Display



```
// Display 4
 1 int pinA = 2;
                                                 33
                                                       digitalWrite(pinA, HIGH);
 2 int pinB = 3;
                                                 34
                                                       digitalWrite(pinB, LOW);
 3 int pinC = 4;
                                                  35
                                                       digitalWrite(pinC, LOW);
 4 int pinD = 5;
                                                       digitalWrite(pinD, HIGH);
                                                  36
 5 int pinE = 6;
                                                 37
                                                       digitalWrite(pinE, HIGH);
 6 int pinF = 7;
                                                       digitalWrite(pinF, LOW);
digitalWrite(pinG, LOW);
                                                  38
   int pinG = 8;
                                                  39
                                                 40
                                                       delay(1000);
9 int RED PIN = 9;
                                                  41
10 int GREEN_PIN = 10;
                                                       // Blue (turn off red, blue on)
                                                 42
11 int BLUE_PIN = 11;
                                                 43
                                                       digitalWrite(RED PIN, LOW);
                                                       digitalWrite (GREEN PIN, LOW);
13 void setup() {
                                                       digitalWrite(BLUE_PIN, HIGH);
    pinMode(pinA, OUTPUT);
                                                       // Display 3
1.5
    pinMode(pinB, OUTPUT);
                                                       digitalWrite(pinA, LOW);
    pinMode(pinC, OUTPUT);
16
                                                       digitalWrite(pinB, LOW);
17
     pinMode(pinD, OUTPUT);
                                                       digitalWrite(pinC, LOW);
    pinMode(pinE, OUTPUT);
18
                                                       digitalWrite(pinD, LOW);
19
    pinMode(pinF, OUTPUT);
                                                       digitalWrite(pinE, HIGH);
    pinMode(pinG, OUTPUT);
                                                       digitalWrite(pinF, HIGH);
    pinMode(RED_PIN, OUTPUT);
21
                                                       digitalWrite(pinG, LOW);
22
     pinMode (GREEN PIN, OUTPUT);
                                                       delay(1000);
23
     pinMode (BLUE_PIN, OUTPUT);
24 }
                                                        // Yellow (turn red and green on)
25
                                                       digitalWrite (RED PIN, HIGH);
26 void loop() {
                                                 59
                                                       digitalWrite (GREEN PIN, HIGH);
    // Red (just the red LED on)
2.7
                                                  60
                                                       digitalWrite(BLUE_PIN, LOW);
28
    digitalWrite(GREEN PIN, LOW);
                                                  61
29
     digitalWrite(BLUE_PIN, LOW);
                                                 62
                                                       // Display 1
30
     digitalWrite(RED_PIN, HIGH);
                                                Serial Monitor
31
```

```
61
 62
       // Display 1
                                              Text
                                                                              +
 63
       digitalWrite(pinA, HIGH);
 64
       digitalWrite(pinB, LOW);
                                              79
                                                    digitalWrite(pinB, HIGH);
 65
       digitalWrite(pinC, LOW);
                                              80
                                                    digitalWrite(pinC, LOW);
       digitalWrite(pinD, HIGH);
 66
                                              81
                                                    digitalWrite(pinD, LOW);
 67
       digitalWrite(pinE, HIGH);
                                              82
                                                    digitalWrite(pinE, HIGH);
       digitalWrite(pinF, HIGH);
 68
                                              83
                                                    digitalWrite(pinF, LOW);
                                              84
                                                    digitalWrite(pinG, LOW);
      digitalWrite(pinG, HIGH);
 69
                                              85
                                                    delay(1000);
 70
       delay(1000);
                                              86
 71
                                              87
                                                    // Display 4
 72
       // Green (just the green LED on)
                                                    digitalWrite(pinF, LOW);
                                              88
 73
       digitalWrite(RED PIN, LOW);
                                              89
                                                    digitalWrite(pinG, LOW);
 74
       digitalWrite(GREEN_PIN, HIGH);
                                              90
                                                    delay(1000);
 75
       digitalWrite(BLUE PIN, LOW);
                                              91
 76
                                                    // Display 4 again
digitalWrite(pinA, HIGH);
                                              92
 77
       // Display 5
                                              93
 78
      digitalWrite(pinA, LOW);
digitalWrite(pinB, HIGH);
                                              94
                                                    digitalWrite(pinE, HIGH);
 79
                                              95
                                                    delay(1000);
                                              96
 80
      digitalWrite(pinC, LOW);
                                              97
                                                    // Display 3
81
       digitalWrite(pinD, LOW);
                                              98
                                                    digitalWrite(pinD, LOW);
 82
       digitalWrite(pinE, HIGH);
                                              99
                                                   delay(1000);
       digitalWrite(pinF, LOW);
 83
 84
       digitalWrite(pinG, LOW);
                                                    // Display 2
 85
       delay(1000);
                                             102
                                                    digitalWrite(pinF, HIGH);
                                                    delay(1000);
86
                                            104
 87
       // Display 4
                                            105
      digitalWrite(pinF, LOW);
                                                    // Display 1
88
                                            106
                                                    digitalWrite(pinB, LOW);
 89
       digitalWrite(pinG, LOW);
                                            107
                                                    delay(1000);
 90
      delay(1000);
                                            108 }
 91
                                            109
 92
      // Display 4 again
                                            " Serial Monitor
" Serial Monitor
```

2. RGB + Buzzer + LDR



```
▼ 🙀 🖨 🗚 ▼ 1 (Arduino Uno R3)
 Text
  1 int buzzer = 2;
  2 int RED_PIN = 9;
  3 int GREEN_PIN = 10;
  4 int BLUE_PIN = 11;
  6 int ldrPin = A0; // LDR analog pin
7 int ldrValue = 0; // Variable to store LDR reading
  9 void setup() {
      pinMode(buzzer, OUTPUT);
      pinMode (RED_PIN, OUTPUT);
       pinMode (GREEN_PIN, OUTPUT);
      pinMode(BLUE_PIN, OUTPUT);
       Serial.begin(9600); // Optional: For debugging the LDR reading
 15 }
    void loop() {
      ldrValue = analogRead(ldrPin); // Read LDR value
                                            // Debug: Print LDR value
 19
       Serial.println(ldrValue);
 20
       if (ldrValue < 500) { // Dark environment digitalWrite(buzzer, HIGH); // Buzzer ON
 21
 23
 24
          // RED
         digitalWrite (RED PIN, HIGH);
         digitalWrite(GREEN_PIN, LOW);
         digitalWrite(BLUE_PIN, LOW);
         delay(500);
         digitalWrite(buzzer, LOW); // Buzzer OFF
Serial Monitor
                                                                               ø
  Text
                                               AA =
                                                          1 (Arduino Uno R3)
                                   <u>+</u>
     void loop() {
        ldrValue = analogRead(ldrFin); // Read LDR value
Serial.println(ldrValue); // Debug: Print LDR value
 19
        if (ldrValue < 500) { // Dark environment
  digitalWrite(buzzer, HIGH); // Buzzer ON</pre>
 23
 24
          // RED
          digitalWrite(RED PIN, HIGH);
          digitalWrite(GREEN_PIN, LOW);
 26
          digitalWrite(BLUE PIN, LOW);
          delay(500);
 29
          digitalWrite(buzzer, LOW); // Buzzer OFF
           // GREEN
  33
          digitalWrite(RED_PIN, LOW);
 34
          digitalWrite(GREEN_PIN, HIGH);
          digitalWrite(BLUE_PIN, LOW);
          delay(500);
        } else { // Bright environment // BLUE only, no sound
 37
  39
          digitalWrite(RED_PIN, LOW);
 40
          digitalWrite(GREEN_PIN, LOW);
          digitalWrite(BLUE_PIN, HIGH);
digitalWrite(buzzer, LOW);
 41
 42
```

delay(100); // Small delay to reduce flickering

43

" Serial Monitor