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BSITFS-A

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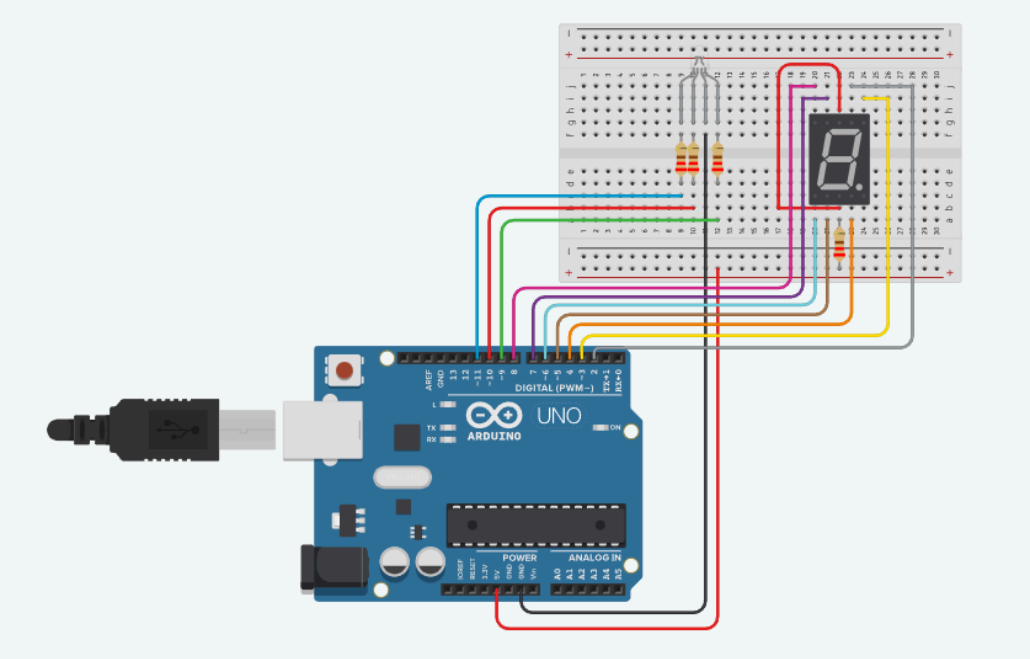
ITELEC3 - IT Elective 3

Combination Project

1. **RGB + 7 Segment Display**




```
int pinA = 2;
int pinB = 3;
int pinC = 4;
int pinD = 5;
int pinE = 6;
int pinF = 7;
int pinG = 8;

int RED_PIN = 9;
int GREEN_PIN = 10;
int BLUE_PIN = 11;

void setup() {
  pinMode(pinA, OUTPUT);
  pinMode(pinB, OUTPUT);
  pinMode(pinC, OUTPUT);
  pinMode(pinD, OUTPUT);
  pinMode(pinE, OUTPUT);
  pinMode(pinF, OUTPUT);
  pinMode(pinG, OUTPUT);
  pinMode(RED_PIN, OUTPUT);
  pinMode(GREEN_PIN, OUTPUT);
  pinMode(BLUE_PIN, OUTPUT);
}

void loop() {
  // Red (just the red LED on)
  digitalWrite(GREEN_PIN, LOW);
  digitalWrite(BLUE_PIN, LOW);
  digitalWrite(RED_PIN, HIGH);

  // Display 4
  digitalWrite(pinA, HIGH);
  digitalWrite(pinB, LOW);
  digitalWrite(pinC, LOW);
  digitalWrite(pinD, HIGH);
  digitalWrite(pinE, HIGH);
  digitalWrite(pinF, LOW);
  digitalWrite(pinG, LOW);
  delay(1000);

  // Blue (turn off red, blue on)
  digitalWrite(RED_PIN, LOW);
  digitalWrite(GREEN_PIN, LOW);
  digitalWrite(BLUE_PIN, HIGH);

  // Display 3
  digitalWrite(pinA, LOW);
  digitalWrite(pinB, LOW);
  digitalWrite(pinC, LOW);
  digitalWrite(pinD, LOW);
  digitalWrite(pinE, HIGH);
  digitalWrite(pinF, HIGH);
  digitalWrite(pinG, LOW);
  delay(1000);

  // Yellow (turn red and green on)
  digitalWrite(RED_PIN, HIGH);
  digitalWrite(GREEN_PIN, HIGH);
  digitalWrite(BLUE_PIN, LOW);

  // Display 1
```

Serial Monitor

```
61
62    // Display 1
63    digitalWrite(pinA, HIGH);
64    digitalWrite(pinB, LOW);
65    digitalWrite(pinC, LOW);
66    digitalWrite(pinD, HIGH);
67    digitalWrite(pinE, HIGH);
68    digitalWrite(pinF, HIGH);
69    digitalWrite(pinG, HIGH);
70    delay(1000);
71
72    // Green (just the green LED on)
73    digitalWrite(RED_PIN, LOW);
74    digitalWrite(GREEN_PIN, HIGH);
75    digitalWrite(BLUE_PIN, LOW);
76
77    // Display 5
78    digitalWrite(pinA, LOW);
79    digitalWrite(pinB, HIGH);
80    digitalWrite(pinC, LOW);
81    digitalWrite(pinD, LOW);
82    digitalWrite(pinE, HIGH);
83    digitalWrite(pinF, LOW);
84    digitalWrite(pinG, LOW);
85    delay(1000);
86
87    // Display 4
88    digitalWrite(pinF, LOW);
89    digitalWrite(pinG, LOW);
90    delay(1000);
91
92    // Display 4 again
```

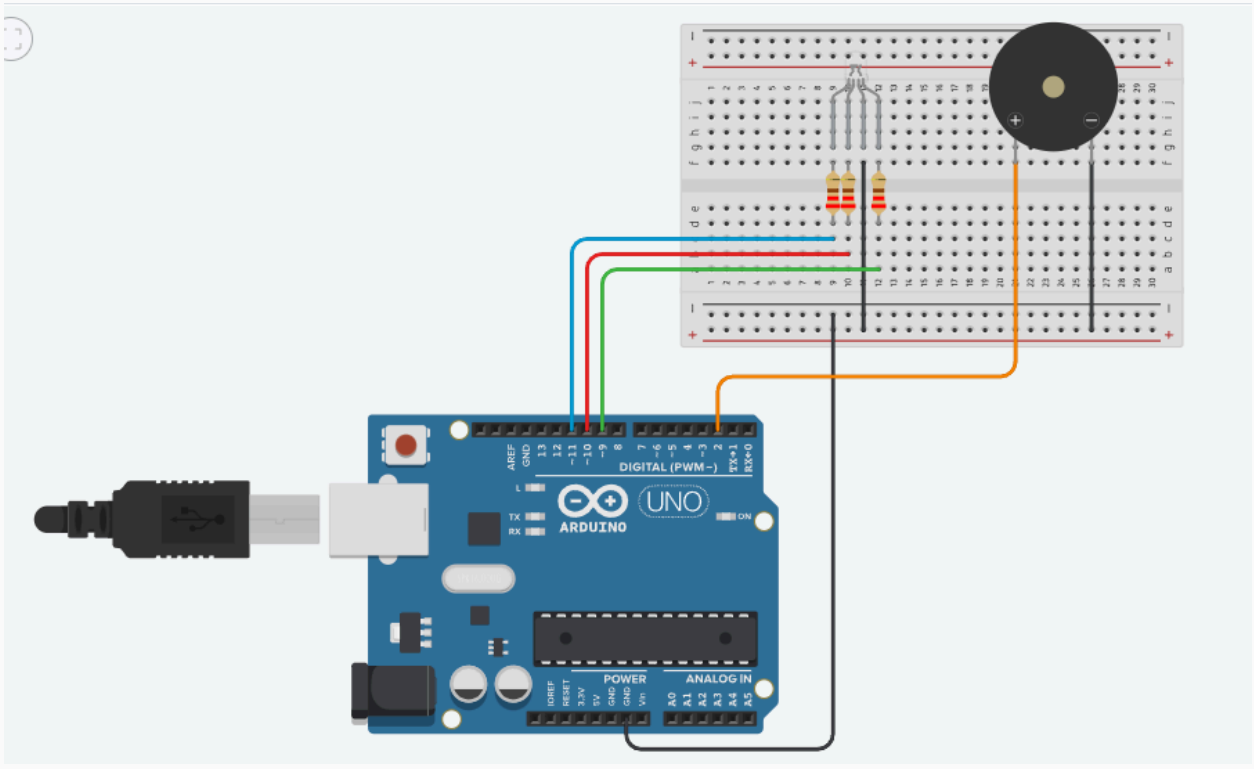
Serial Monitor

Text

```
79    digitalWrite(pinB, HIGH);
80    digitalWrite(pinC, LOW);
81    digitalWrite(pinD, LOW);
82    digitalWrite(pinE, HIGH);
83    digitalWrite(pinF, LOW);
84    digitalWrite(pinG, LOW);
85    delay(1000);
86
87    // Display 4
88    digitalWrite(pinF, LOW);
89    digitalWrite(pinG, LOW);
90    delay(1000);
91
92    // Display 4 again
93    digitalWrite(pinA, HIGH);
94    digitalWrite(pinE, HIGH);
95    delay(1000);
96
97    // Display 3
98    digitalWrite(pinD, LOW);
99    delay(1000);
100
101   // Display 2
102   digitalWrite(pinF, HIGH);
103   delay(1000);
104
105   // Display 1
106   digitalWrite(pinB, LOW);
107   delay(1000);
108 }
109
```

Serial Monitor

2. RGB + Buzzer + LDR



Text

1 (Arduino Uno R3)

```
int buzzer = 2;
int RED_PIN = 9;
int GREEN_PIN = 10;
int BLUE_PIN = 11;

int ldrPin = A0;   // LDR analog pin
int ldrValue = 0;  // Variable to store LDR reading

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
}

void loop() {
  ldrValue = analogRead(ldrPin);  // Read LDR value
  Serial.println(ldrValue);       // Debug: Print LDR value

  if (ldrValue < 500) { // Dark environment
    digitalWrite(buzzer, HIGH); // Buzzer ON

    // RED
    digitalWrite(RED_PIN, HIGH);
    digitalWrite(GREEN_PIN, LOW);
    digitalWrite(BLUE_PIN, LOW);
    delay(500);

    digitalWrite(buzzer, LOW); // Buzzer OFF
```

Serial Monitor

Text

1 (Arduino Uno R3)

```
void loop() {
  ldrValue = analogRead(ldrPin);  // Read LDR value
  Serial.println(ldrValue);       // Debug: Print LDR value

  if (ldrValue < 500) { // Dark environment
    digitalWrite(buzzer, HIGH); // Buzzer ON

    // RED
    digitalWrite(RED_PIN, HIGH);
    digitalWrite(GREEN_PIN, LOW);
    digitalWrite(BLUE_PIN, LOW);
    delay(500);

    digitalWrite(buzzer, LOW); // Buzzer OFF

    // GREEN
    digitalWrite(RED_PIN, LOW);
    digitalWrite(GREEN_PIN, HIGH);
    digitalWrite(BLUE_PIN, LOW);
    delay(500);
  } else { // Bright environment
    // BLUE only, no sound
    digitalWrite(RED_PIN, LOW);
    digitalWrite(GREEN_PIN, LOW);
    digitalWrite(BLUE_PIN, HIGH);
    digitalWrite(buzzer, LOW);
  }

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

Serial Monitor