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Reads an analog input on pin A0, scales it to 0-255 range for use in setting RGB LED to different colors; prints the result to the serial monitor.

Attach the center pin of a potentiometer to pin A0, and the outside pins to +5V and ground.

Attach RGB to pins 9,10,11 using 220 ohm resitors and the common pin to ground.

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// Global variables

int redLED = 9; // red LED connected to pin 9

int greenLED = 10; // green LED connected to pin 10

int blueLED = 11; // blue LED connected to pin 11

int onBoardLED = 13; // onboard LED is connected to pin 13

int potPin = A0; // potentiometer is connected to analog pin A0

int redLevel = 0; // create variables to hold brightness levels

int greenLevel = 0;

int blueLevel = 0;

int potValue; // create variable to hold potentiometer value read from potPin

void setup() {

Serial.begin(9600); // turn on the serial port for monitoring as needed

pinMode(redLED, OUTPUT); // set LED pins as OUTPUT

pinMode(greenLED, OUTPUT);

pinMode(blueLED, OUTPUT);

pinMode(onBoardLED, OUTPUT);

pinMode(potPin, INPUT); // set potentiometer pin as input

digitalWrite(onBoardLED, LOW); // make sure the onboard LED is off

}

void loop() {

potValue = analogRead(potPin); // read value from potentiometer

// if potValue 0-341 change redLevel by adjusting potentiometer to fit LED scale

if (potValue >= 0 && potValue <= 341) {

redLevel = map(potValue, 0, 1023, 0, 255); // set new hue of redLED

greenLevel = 0; // turn off greenLED

blueLevel = 0; // turn off blueLED

}

// if potValue 342-682 - change greenLevel

if (potValue >= 342 && potValue <= 682) {

redLevel = 0;

greenLevel = map(potValue, 0, 1023, 0, 255); // set new hue of greenLED

blueLevel = 0;

}

// if potValue 682-1023 - change blueLevel

if (potValue >= 683 && potValue <= 1023) {

redLevel = 0;

greenLevel = 0;

blueLevel = map(potValue, 0, 1023, 0, 255); // set new hue of blueLED

}

analogWrite(redLED, redLevel); // set redLED to scaled potentiometer value

analogWrite(greenLED, greenLevel); // set greenLED to scaled potentiometer value

analogWrite(blueLED, blueLevel); // set blueLED to scaled potentiometer value

Serial.print("RGB level is: "); // print data to serial monitor for debugging

Serial.print(redLevel); Serial.print(",");

Serial.print(greenLevel); Serial.print(",");

Serial.print(blueLevel); Serial.print("; ");

Serial.print("POT Value is: "); Serial.println(potValue);

// sample output: "RGB level is: 0,245,0; POT Value is: 500"

}