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/*
 * Arduino tutorial: State of Mind for the Arduino
 *
 * This program has 3 States:
 * - dark - LED is red
 * - dim - LED is green
 * - bright - LED is blue
 *
 */

int redPin = 9; // R pin on RGB LED module connected to digital pin 9
int greenPin = 6; // G pin on RGB LED module connected to digital pin 6
int bluePin = 3; // B pin on RGB LED module connected to digital pin 3
String state = "dim"; // Current state of mind for the program
int lightvalue = 0; // Variable to remember light value

void setup() // run once
{
    pinMode(redPin, OUTPUT); // sets the redPin to be an output
    pinMode(greenPin, OUTPUT); // sets the greenPin to be an output
    pinMode(bluePin, OUTPUT); // sets the bluePin to be an output
    Serial.begin(9600); // start the serial output
    Serial.println(state);
}

void loop() // run over and over again
{
    lightvalue = analogRead(A0);
    Serial.println(lightvalue);
    // Check if state is dim
    if( state == "dim" ) {
        // If light is dark -> get dark
        if(lightvalue < 500) {
            state = "dark";
            RGBred();
        }
        // If light is bright -> get bright
    } else {
        state = "bright";
        RGBblue();
    }
}
// Check if state is dark
if( state == "dark" ) {
    // If light is bright -> get dim
    if( lightvalue > 500 ) {
        state = "dim";
        RGBgreen();
    }
}
// Check if state is bright
if( state == "bright" ) {
    // If light is dark -> get dim

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        if( lightvalue < 500 ) {
            state ="dim";
            RGBgreen();
        }
    }
    Serial.println(state); // Print the current state
    delay(2000); // Wait 2 seconds
}

void RGBred()// Function to turn the RGB LED red
{
    digitalWrite(redPin, HIGH);
    digitalWrite(greenPin, LOW);
    digitalWrite(bluePin, LOW);
}

void RGBgreen()// Function to turn the RGB LED green
{
    digitalWrite(redPin, LOW);
    digitalWrite(greenPin, HIGH);
    digitalWrite(bluePin, LOW);
}

void RGBblue()// Function to turn the RGB LED blue
{
    digitalWrite(redPin, LOW);
    digitalWrite(greenPin, LOW);
    digitalWrite(bluePin, HIGH);
}

void RGBoff()// Function to turn the RGB LED off
{
    digitalWrite(redPin, LOW);
    digitalWrite(greenPin, LOW);
    digitalWrite(bluePin, LOW);
}

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