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/*
Adafruit Arduino - Lesson 9. Sensing Light - LEDs Shows a
photo resistor can control a red, yellow and green LED,
with more LEDs lit the brighter the light. Also shows
Serial_Monitor from Arduino to IDE; "const" and "byte".
This inspired by the Adafruit Arduino Lesson 9.
$Id: arduino_lesson_09_sensing_light_APL_VERSION.ino,v 1.13 2014/04/05
19:30:44 gralimjl Exp gralimjl $
*/

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const byte lightPin = 0;
const int lightMin = 275; // The smallest value measured
const int lightMax = 902; // The largest value measured
const byte redPin = 8;
const byte yellowPin = 6;
const byte greenPin = 4;
const float senseMax = 1023.0; // The largest value possible
const float senseMin = 0.0; // The smallest value possible
const float numLEDs = 3.0; // How many LEDs we have.
const int stepSize = int(senseMax/(numLEDs + 1.0));

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void setup()
{
  pinMode(redPin, OUTPUT);
  pinMode(yellowPin, OUTPUT);
  pinMode(greenPin, OUTPUT);
  all_off;
  Serial.begin(9600);
}

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void loop()
{
  int reading = analogRead(lightPin);
  int compensatedReading
    = map (reading, lightMin, lightMax, senseMin, senseMax);
  if (true)
  {
    Serial.print("reading := ");
    Serial.print(reading);
    Serial.print("; compensatedReading := ");
    Serial.print(compensatedReading);
    Serial.println();
  }
  if (compensatedReading >= stepSize) {
    digitalWrite(greenPin,HIGH);
    if (compensatedReading >= (stepSize<<1)) {
      digitalWrite(yellowPin,HIGH);
      if (compensatedReading >= (3*stepSize)) {
        digitalWrite(redPin,HIGH);
      }
    }
  }
  delay (300);
  all_off ();
}

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```
}  
  
void all_off () {  
    digitalWrite(redPin, LOW);  
    digitalWrite(yellowPin, LOW);  
    digitalWrite(greenPin, LOW);  
}
```