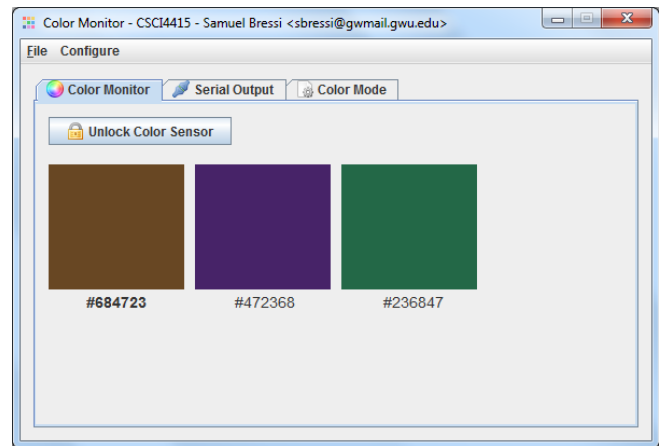


Project Abstract

The goal of this project is to utilize a color light sensor to capture analog wavelengths of red, green, and blue light and visually display them on a computer monitor. In addition, a mechanism is in place to analyze the color and perform complex color theory mathematics to calculate analogous, complementary, monochromatic, split complementary, and triadic color groups.

A Zilog® ZNEO™ Z16F microcontroller interfaces with the I²C color light sensor¹ and communicates to a graphical user interface on a PC through a serial connection.

Final Project



Hardware Schematic

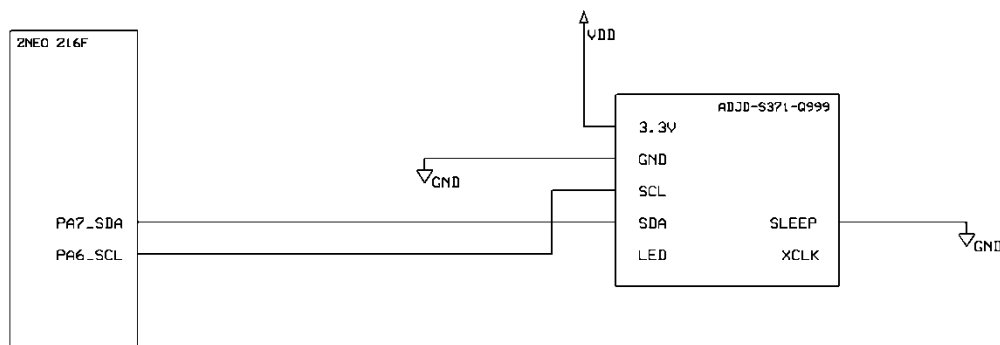


Figure 1: Hardware Schematic

¹ Color light sensor purchased from <http://www.sparkfun.com/products/8663>. Additional product information is available on page.

Lessons Learned

The following embedded systems fundamentals were used in this project.

- I²C interaction with the light sensor
- Serial communication between the ZNEO and the Java user interface
- Continuous timers to manage the LED array
- Button polling and debouncing techniques