

Arduino Lab 6: Talking to the Cloud

Peace Love Arduino

Name: _____ Signature _____

Intro

In lab 5 we sent information from the Arduino to your PC via the serial port. In this lab we will be going in the reverse direction--sending information from your PC to your Arduino. Like in the previous lab, this lab will consist of a Processing program running on your PC and a program running on the Arduino. This lab is from "Getting Started with Arduino" by Massimo Banzi.

Brief Description

The Processing sketch grabs text from a website (the default website is <http://zacharski.org/peaceLoveArduino>). It counts the number of occurrences of the words *peace*, *love*, and *Arduino* and converts those counts into values for red, green, and blue (RGB). The Processing sketch sends these RGB values to the Arduino. The Arduino uses them to alter the brightness of a red, green, and blue led.

The lab combines a lot of what we already worked on:

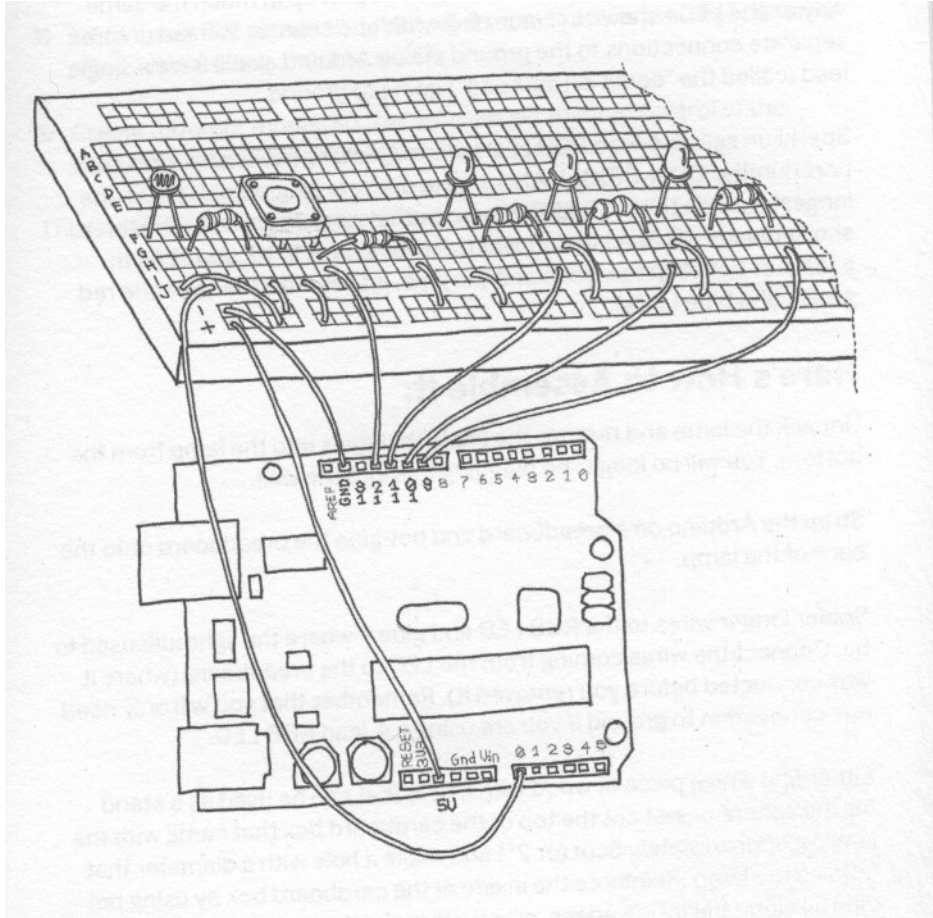
- the pushbutton (lab 2)
- the light sensor (lab 4)
- PWM LED control (lab 3-out)
- serial communication (lab 5)

The Processing Component

Copy the Processing Code from our website to a blank Processing editing window and save it. Before you can run the sketch you will need to generate the font it uses. To do this, while the sketch is still open, select from the Tools menu *Create Font*. Select the HelveticaNeue-bold font and select 32 for the font size and click ok.

The Arduino Component:

Hardware:



Software:

Copy the Arduino Wiring code from our website

Part 1 sign off (80 points)

Instructor sign off: _____

Questions:

1) Which color (of RGB) is associated with which word?

2) What does the button do?

3) What is the Arduino pin number associated with each color?

4) Are the LEDs in this project controlled by digitalWrite, digitalRead, analogWrite, or analogRead?

5) What does the variable old_button do?

Part 2: (10 Points)

Just change the Processing code to use 3 different words from a different site.

Instructor sign off: _____

Part 3: (10 Points)

Just change the Processing code to use some web information that doesn't involve counting occurrences of words (for ex., stock market info, # of email msgs or tweets, etc)

Instructor sign off: _____