Lab 2: Arduino 02
Due: September 15th, 2019 11:55pm
20 Points

Name _____

**Purpose:** This is the first lab where you will combine a basic electronic circuit that you create on the breadboard with code that you write for the Arduino. For this lab the code you will be using is provided for you in the book. In future labs some pieces of code may be provided in the book that you can use but you will need to write your own code to bring them together into a working project. By the time we get to the projects later in the course the code you write will be entirely your own. Arduino programming is done in C/C++ syntax and style you can read more about it here: https://www.arduino.cc/en/Main/FAQ under the "Arduino Software" heading.

**Preparatory**: You should have complete lab 0 and 1 successfully (lab 00 and 01 in your green and white book). You will need your arduino kit to perform the lab and you will also read through the entire lab in the book (page 32 to 41)

**Warning! Remember that LEDs will burn out if used without a resistor! You need a 220 ohm resistor (see page 41 in the book for help). Also remember that LEDs are directional and the long leg (anode) must go to power (+) and the shorter leg ground! You will use a 1 10k (10000) ohm resistor for your switch circuit.**

**Submission:** There are 2 components you must turn-in for this lab:

1. Your entire code (attached as a file is preferable).
2. The answer to the questions below (you may hand write them on this sheet and turn in class, at the next lab, or enter the answers in iLearn)

You may submit the questions through iLearn by typing the questions and answers below into the submission box or attaching a document or you may also turn in a paper copy of your answers to me. Either way, you should still attach your code to the iLearn assignment and submit.

## Questions:

1. What happens when you change the number in the delay() functions? Describe numbers that you tried and how it affected the lights.

2. In the circuit that includes the switch, you have a jumper going from the 5v vertical power rail to one lead of the switch, then on the other side of the switch you have a wire going to pin 2 on the arduino and a resistor going to the ground strip. If you remove the resistor while there is power to the circuit (for the switch circuit, this is safe to do) what happens? **Describe** in your own words why removing the resistor causes this behavior.