

Learning Goals:

- Be able to have two Arduinos communicate with each other.

Lab: Due Wednesday 3/20/19

For this lab, you may work with a partner. If you have two Arduino devices, you can work alone.

For this lab:

- connect two Arduino's via a hardwired serial connection (no usb cable) (digital pins 0 and 1)
- connect a button and an external LED to each device
- pressing the button on one Arduino should cause the other Arduino's LED to change state (on to off, or off to on)
- Button press on one Arduino should toggle the state of the LED on the other (on/off) and not keep the LED lit while being pressed
- utilize the 16x2 display for debugging
- refer to lab 6 for all the info about serial communication and lab2 for maintaining led states with button presses .

Hints:

- Both boards have to share the same ground in order for the serial communication to work properly

The same code **MUST** run on both Arduinos. You and your partner may submit the same code, if you both have worked on it together. You may do this via a single group submission in Gradescope. Both of you are to demonstrate the lab together.

To be considered completed “on time”, this Lab needs to be demonstrated by end of Lab on Wednesday 3/20/2019. Your code must be submitted to Gradescope **BEFORE** you demo your lab!

Late Policy

- Late Submission - Submitted and/or demonstrated later that week (before Friday 3/22/19 11:59pm) 25% Penalty
- Late submission – Submitted and/or demonstrated during the following week (before Friday 4/5/19 11:59pm) 50% Penalty

What should I include with my .ino Code File?

As with any code file, it should be written in Good Coding Style: in a manner that will help other people read and understand the intent, purpose, operation of the code. So your code must include:

- Name the .ino file with your NetId and Lab Number
 - I.E. something like: ptroy4Lab2.ino
- Header Comments (including the following)

- // FirstName LastName, UIN and NetID
- // Lab x - Title
- // Description - what is this code supposed to do?
- // Include any assumptions you may have made, what do you expect from the hardware, pinouts, particular arduino versions, etc.
- // References - where did you find code snippets, ideas, inspirations? if no references used say: "no references used"
- Code is well documented/formatted with comments, indentations, and descriptive variable names
- Actual code - the functions in the cpp/ino file

Academic Integrity Guidelines:

You may use any resources linked from this lab, or posted by the professor or TAs on piazza/class web page/etc. You should not look at any other internet resources for this. This is an individual assignment, and should be completed on your own. You should not show anyone your code, or look at anyone else's code.