Course Name: ECE372A
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Date:
Project Name: Lab3

Description
In this lab, you will interface with an LCD to display various characters. You will need to create a microsecond delay that will work up to at least 2000 microseconds using timer 1. Using bit shifting and masking you will send commands to the LCD.

Instructions
Examine comments in lcd.cpp, main.cpp, and timer.cpp and complete the described functions. You will need to create a circuit using your breadboard, jumper wires and LCD. **You will need to solder the LCD** - this is done as part of the **soldering workshop**. Please attend one as soon as possible if you haven't already.

Requirements
Overall
1. The project must follow good coding practices and be well commented.
2. Arduino libraries are not allowed at all for this lab with the exception of debug functionality using Serial.println.
3. The LCD must display Hello! and have a flashing cursor at the end of the printed line.

lcd.cpp
1. All functions provided must be used in the implementation of the LCD interface according to their descriptions
2. PORTA0, PORTA1, PORTA2, and PORTA3 must be used for the data pins on the LCD with PORTA0 corresponding to the least significant bit
3. PORTB4 and PORTB6 must be used for the enable pin and RS pin respectively.
4. When four bits need to be assigned to PORTA, it must be done in **one line of code**. There are times where you need to send four bits twice, in this case, you need two lines of code.

timer.cpp
1. Implement a precise microsecond timer using timer 1.

main.cpp
1. main.cpp can and should remain as it is as you implement the related LCD functions.

Extra Credit worth 10 pts:
Display on the first line “My name is:” followed by
Display on the second line your first name and initial of your last name.