ECE-412
Spring 2022
Lab 3 Check List

Name:_____ Date:_____

On demo day, have the tasks listed for each of the following parts ready to demonstrate. Have your demonstration code open and ready to execute. Your demonstration code should be your own code where applicable. Practice your demonstration and knowledge of these tasks before the actual demo. I suggest that you create your demonstration code as a single project, demonstrating each task in your own original order and manner. Comment every line of your demonstration code and list your code in your report under software heading.

Part 1) Virtual COM Port and ATMega328PB USART (see C code for more details)

- Can configure the USART to change to a different baud rate, #of data bits, parity, and # of stop bits during runtime via a new 'USART' command. (2pts)

Part 2) 10-Bit Analog to Digital Converter (see C code for more details)

- Can re-engineer the ADC subroutine to display temperature in degrees Celsius using a 10K NTC B3950 thermistor. See Lab3_DEMO schematic. (3pts)
- The ADC is set in free running mode for this part. (3pts)
- The command line displays the temperature at a static position. (1pt)

Part 3) EEPROM (see C code for more details)

- Can re-engineer the EEPROM subroutine to ask user for an EEPROM address and 8-bit data then store the data, via command line. (2pts)
- Can read back data from EEPROM at a specified address, via command line. (2pt)

Part 4) Liquid Crystal Display Module, GPIO, and LCD MCU.

- Can re-engineer this subroutine to configure the LCD module to display the Team's name in a scrolling marquee, scrolling vertically or horizontally. (2pts)