Gabriel Gorospe
ece103L Thursday Section
Lab 4 report
Due: 5/10/2023

4.2

Code Files:

- *dfrobot_c_funcs.c*
    - Defines the i2c_master_init() function
- *Dfrobot_c_lib.h*
    - extern “C” used
    - Has prototype for i2c_master_init() function using
- *DFRobot_LCD.cpp*
    - Removes any Arduino.h and Print.h functionality (stuff that uses Wire) replacing with i2c functionality.
    - Similar structure to the i2c_write() function in my lab 3 code for the setReg() and send() functions, taking into account that the data* variable has the register at data[0] and the data body in data[1] through data[length of data - 1].
    - Implements i2c_write() function which is called by send() in a for loop.
    - printstr() writes characters to the LCD with a for loop implementing the setCursor and write() class functions for each character.
- *DFRobot_LCD.h*
    - Adjusted to handle i2c rather than arduino
    - Added i2c_write() function
- *lab4_2.cpp*
    - Uses extern “C” on app_main
    - Calls printstr() two times one for each row of the display

Citations:

- https://stackoverflow.com/questions/2796796/when-to-use-extern-c-in-simple-words

4.3

Code Files:

- *dfrobot_c_funcs.c*
    - Same as 4.2
- *Dfrobot_c_lib.h*
    - Same as 4.2
- *DFRobot_LCD.cpp*
    - Same as 4.2 with additions
    - T_H_display() class function displays the temperature in celsius and humidity as specified by the lab doc.
        - Uses lab2.2 functionality, but rather than printing to the terminal, it displays to the LCD using sprintf() to format with buffers and printstr() to display.
- *DFRobot_LCD.h*
    - Same as 4.2 but added T_H_display()
- *lab4_2.cpp*
    - Same as 4.2 but calls T_H_display() in app_main() instead.

Citations:

- https://www.tutorialspoint.com/c_standard_library/c_function_sprintf.htm