Description of Library
The library "joh19042_lab5_LCDlib_v002" was written for the lab 05 assignment in the spring 2021 section of EE 2361 at the University of Minnesota Twin Cities to demonstrate the I2C protocol knowledge obtained in the course. In order to present a working knowledge of I2C, this library's purpose is to be able to print a string to an LCD screen as if it were scrolling across the screen from row to row.

Supported Microprocessor and LCD
This library was designed for the PIC24FJ64GA002 in combination with the AQM0802A-RN-GBW LCD display + chip.

Required Libraries
There are two required libraries: "joh19042_lab_LCDlib_v002.c" which is the LCD library which also defines the behavior of the I2C protocol, and "joh19042_lab5_Timerlib.c" which contains the Timer1 initialization function and the Timer1 interrupt protocol.

void lcd_init(void)
Configures I2C for the LCD and then the LCD itself.
- I2C
    - Configured to clock frequency of 100 MHz
    - Interrupt flag configured and reset
- LCD
    - Display configured
    - Display turned on and cleared

void lcd_setCursor(char x, char y)
Takes two parameters and sends an 8-bit command to the LCD chip telling it which row and column to set the cursor to.
- Parameters
    - char y is the row where the cursor needs to be set
    - char x is the column where the cursor needs to be set
- General Function
    - 0x40 is multiplied by y where 0 makes first row and 1 makes second row
    - x is added, x will be between 0 and 7 where 0 is the leftmost place of the LCD

void lcd_printChar(char myChar)
Prints the given character to the screen. Sends start and stop bits before and after the character data is sent. This character data can be found on the datasheet.

void lcd_printStr(const char s[])
Prints the list of characters by incrementing the column and row as characters are printed.