Lab 5:

For Lab 5 with installed the Driver Library within our folder in our workspace. Initially for the lab I used some functions provided for the library. I first started by getting the LED lights to work, then implementing the UART functions last. The first function I used was GPIO_setAsInputWithPullUpRessistor with the pin Port 1, and 0x012 which gives the 1's to pin 1 and 4 which represents the buttons. This is the abstracted version, the code behind its setups uses the select lines from the multiplexors as a simple I/O port. Then it changes the direction register to input. Afterwards, it enables the pull resistor, and allowing the voltage by selecting the DVCC. We then used GPIO_setAsOutputPin with Port 2, 0x07. The 7 bits represent the RGB light red, green and blue. Behind the scenes, this function is using the selection to set 0's which sets as an output. Then changing the direction to an output. I then created a while loop which repeats infinitely. This while loop contains two variables which two variables which reads the IN registers value and its corresponding pins, this tells us wether if the button is pressed. We then added if statements wether to check if buttons are pressed, change the LED's color. When running this it worked fine, but I did notice that it checks too frequently then I added it a delay to pervent debounce. This stopped checking frequently I deselect one button, after holding both. The code worked fine, however when I implemented the UART functions it didn't print. I asked for help, and I figured out that my UART configurations were wrong. That's when professor posted the code, and I figured the reason I got my configurations wrong was because the configurations are based on the clock rate over the baud rate. Depending on the number of this fraction, and its decimal points the clock prescalar, and oversampling as well as registers will change. I also noticed that didn't set the ports and pins as inputs for UART mode, as well as to enable it.