

Goals:

- Configure USART to send and receive to PC
- Read USART status flags and act upon them
- Implement button debounce
- Work with string buffers

Setup:

Use the built-in LEDs

Blue built-in push button is connected to PC13 (verify on schematic)

Requirements:

- Write a program to enable LPUART1 to send and receive data from PC (use the tool [realTerm](#), or any other serial terminal). UART should run using 57600 baud rate, 8 bit word, 1 stop bit, and no parity.
- User will type:
 - 'g' or 'G' to toggle GREEN LED
 - 'r' or 'R' to toggle RED LED
 - 'b' or 'B' to toggle BLUE LED
 - Anything else will turn all LEDs off
- Create a character buffer with your full name in it.
- Upon pushing the (user) blue button, a single character from the character buffer will be sent to the PC. Next character will be sent on the next push. Data should wraparound when buffer end is reached.
 - Note that you will need to apply a debouncing algorithm so that a single push doesn't cause printing multiple characters.
- Do not use any prebuilt high-level functions. Like what you learned in class, write your program in a register level abstraction.
- Your code will be used in future labs. Structure your code to have functions (LPUART1init, LPUART1rx, LPUART1tx, ... etc.)
- Add comments to each line in your code.