

CMPE1250 – ICA #8, Serial Communication Interface (SCI)

Built a new library (compilation unit), according to the header *“sci.h”* provided. You are required to provide an implementation of the basic functions described in the header file.

This assignment verifies the functions in the library and introduces you to SCI operation and interfacing with a terminal.

Part 1

Locate and run a Terminal. To begin with, use the 9600 baud communication rate and default settings for the rest (8 data bits, no parity, 1 stop bit, no flow control). Write a program that allows the micro to receive a string from the terminal (i.e. the computer keyboard) via SCI0, and then returns the string, character by character to the terminal program via the SCI0. This will involve the use of *sci0_rxByte()* (non-blocking), *sci0_txByte()*, and *sci0_txStr()*. If you are using *Tera Term*, go to *setup->Terminal* and make sure the *Local echo* function is enabled.

Part 2

For this part, keep the baud rate at 9600. Add code that will perform the following:

- Pressing the LEFT switch will turn the RED LED ON and send the message: "LEFT pressed\r\n" to the sci0. Releasing the LEFT switch will turn the RED LED OFF and send the message: "LEFT released\r\n" to the sci0.
- Pressing the CENTER switch will turn the YELLOW LED ON and send the message: "CENTER pressed\r\n" to the sci0. Releasing the CENTER switch will turn the YELLOW LED OFF and send the message: "CENTER released\r\n" to the sci0.
- Pressing the RIGHT switch will turn the GREEN LED ON and send the message: "RIGHT pressed\r\n" to the sci0. Releasing the CENTER switch will turn the GREEN LED OFF and send the message: " RIGHT released\r\n" to the sci0.

Please note that for this part to work properly you need to track the “state” of the switch, so it performs the operation only once per press and once per release.

Answer the following questions as comments in main.c:

Why do we add “\r\n” at the end of the message?

What happens if we do not add those or if we add only one of them?