EET4340

Lab 1

The USART

Use usart.c as the starting point for this lab.

1. Make a project with usart.c and the LCD code. Program the PIC and connect it to a PC with either a serial cable or the USB bridge. Make sure the jumpers are correct for the connection you are using. Test out the firmware and make sure you understand how it works.
2. Change the firmware to a baud rate of 19200 and test it.
3. Modify the firmware so the Hello World string is only transmitted when the button is pressed. Don’t transmit it continuously. There is an empty section of code for detecting the button in the main loop.
4. Modify the firmware so the keystrokes from the terminal are echoed on the terminal. That means that as each character is received by the PIC it should be transmitted back to the PC. You will want to disable the tx interrupt first so you can see the echoed text.
5. Create a simple command processor. When the PIC receives a character of your choice is should execute a simple command. For example you could set it so an ‘m’ displays a message on the display and an ‘L’ toggles one of the LEDs. You should have at least two or three commands. You should delete the code that displays the text on the LCD and replace it with your command code.