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 a button is pressed. Don’t transmit it continuously. You may want to look at the Lab0 code to get hints on the button code.
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.
5. Create a simple command processor. When the PIC receives a digit 0-7 from the PC it should toggle the corresponding LED. Any other character can be ignored (but should still be echoed.) You will want to remove the existing lines that toggle LED 0 and 1 on receive.
6. For those who like a challenge: (not required ☺) Change the receive code so it is interrupt driven instead of polling. You can do this for any of the parts above. Your choice.