CPE/EE 421/521: Laboratory Assignment 3

Purpose: To study MSP430 and write C programs utilizing Digital I/O

Assignment #1: Toggle LED on the MSP430 EasyWeb2
Write a C program that toggles the status LED on the EasyWeb2 development board with frequency of 0.5 Hz (approx. 1s is on, and 1s is off). Use the software delay. Change parameters to increase toggle frequency to 2Hz and to decrease it to 0.25Hz.

Assignment #2: Blink the Status LED using WDT
Write a C program that toggles the status LED on the EasyWeb2 development board with frequency of 0.5 Hz (approx. 1s is on, and 1s is off). Use the high frequency crystal for MCLK (8 MHz) and ACLK (1 MHz), and watchdog timer in the interval-timer mode. The watchdog timer is clocked by ACLK. Change parameters to increase toggle frequency to 2Hz and to decrease it to 0.25Hz.

Assignment #3: Interfacing buttons on the MSP430 EasyWeb2
Write a C program that scans the buttons of the EasyWeb2 board and responds as described below. The buttons B1, B2, B3, and B4 are connected to P4.4 – P4.7.

- If the yellow button (B1) is pressed (port P4.4), blinks the status LED (port P2.1) with frequency of 4 Hz.
- If the red button (B2) is pressed (port P4.5), toggle Relay 2 (connected to the port P1.6).
- If the white button (B3) is pressed (port P4.6), toggle Relay 1 every 5 seconds. Relay 1 is connected to the port P1.5.

Submission: Check lab submission policy at the course Web site: http://www.ece.uah.edu/~milenka/cpe421-07F/.