ECE353 In-Class Exercise

GPIO Pins – General Purpose Timers

Problem 9A Objectives

- Configure a General Purpose timer to be a 32-bit, one-shot, count down timer.
- Set the RELOAD register of a General Purpose Register with a value that sets the timeout period to be 1 second.

1. Modify timers.c

Complete the wait routine for a General Purpose Timer. The timer should be configured to be a 32-bit, one-shot, count down timer. The function accepts the base address of the timer being utilized along with the number of clock cycles to wait for before returning from the function.

Follow the initialization instruction provided in the ECE353 virtual book.

2. Modify main.c

Add code to main.c that prints out the number of seconds that the board has been powered on. This count should continue on until power is removed. Call the wait routine that you finished in timers.c Open a Serial Debug Interface @ 115200.

a. Press each of the push buttons
b. The PS2 button is pressed by pressing the joystick down in the Z direction.
c. Verify the readings of the X and Y direction change as you move the PS2 joystick.

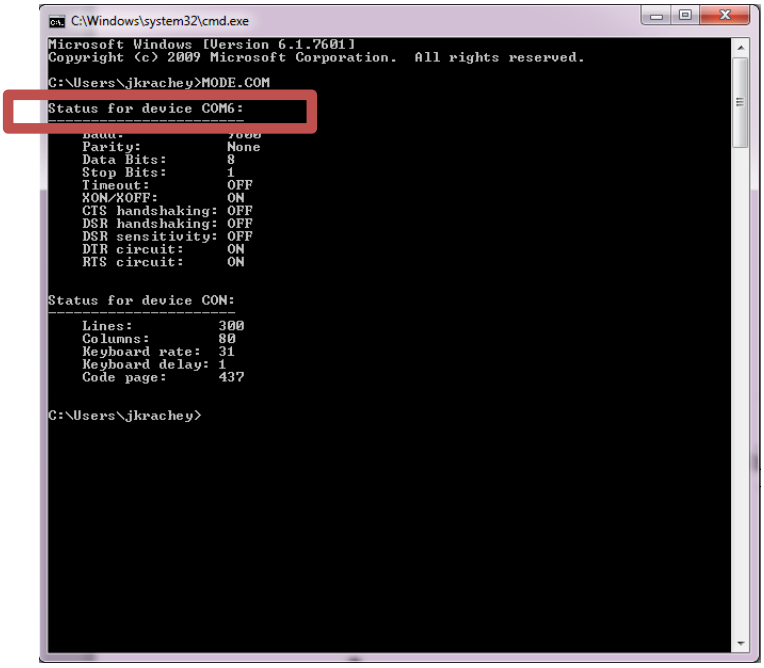
3. What to Turn In

Turn in **`timers.c`** to the dropbox on the course website.

Setting Up Serial Debug Port

We will use the serial debug port on the Tiva Launchpad so that you can use printf statements to display information to the user. In order to use the serial debug port, you will need to determine which COM port your Tiva Launchpad has been assigned by Windows.

Open a windows command prompt issue the command **MODE.COM.** In the example below, we see that the Launchpad is connected to COM6. Your Launchpad will show up as a COM port greater than 3.



Now that you have determined your COM port, open Putty. Click the Windows Start button  , then type “putty” into the search box.

In Putty, click on the serial radio button, enter the COM port above, and set the baud rate to 115200.