Laboratory Worksheet #4
Timer overflow interrupts

The following is an exercise on Timer overflow interrupts and will serve as good starting point for Lab 1.2. The hardware used for this activity should already be ready on your board from Lab 1.1.

The sample code, *worksheet_4.c*, is available on the LMS website under the "Sample Code" section. Compile, assemble, download and run this program. This program counts number of timer overflows occurring while the slide switch is in Off position.

Questions:
What is the frequency of system clock?

The program comfigures T0 to use SYSCLK/12 as its source. Since T0 is a 16-bit register, after how much time (in seconds) will it cause a timer overflow interrupt?

The variable *counts* keeps track of number of timer overflows and this value is printed on the terminal. Modify this printf statement to also print out the corresponding time period in seconds. See if this displayed time period matches with the actual time the switch was in Off position.

When complete, insert Worksheet 4 in your laboratory notebook. Worksheets are required when the notebooks are graded. Perform any necessary calculations on the left page of the notebook where the worksheet is placed. Keep individual copies of the worksheet for your own records.