**EE360 Exam 2, Spring 2017**

Using C, write a program to display the following sequence of digits with each sequence lasting

1 second on the seven-segment displays on the Dragon-12 board,

0000, 0A0A, A0A0, FE45, ABCD, DCBA, FEED, DEAD, BEEF

After displaying these 9 sequences once, sequence will repeat forever until a push-button switch is pressed (say, SW5 on the Dragon-12 board which is connected to Port H pin 0 – PH0). (Note: the push-button number on the light version of the dragon-12 boards may be different, choose any of the push-buttons on the board that is connected to Port H)

The push-button can be used at any time to STOP the display from changing. The 7-segment display will continue to show the current stopped sequence of digits and the system will simultaneously generate a four-tone siren using the PTT5 (Port T pin 5) with each tone lasting for 0.25 second, 1 second, 1.5 seconds and 2 seconds, respectively. The frequencies of these four tones are 1480 Hz, 1245 Hz, 1108 Hz and 555 Hz. After playing it twice, the siren should stop. The PTT5 pin is connected to a buzzer via a jumper on the Dragon12-Plus demo board.

If the push-button (SW5) is pressed the next time, the display will continue to operate (RUN) in the normal manner starting from the currently stopped sequence. The push-button SW5 can be used to switch the system between these two modes of operation (RUN and STOP). The operation cycle can be repeated forever.

In this project you can only use RTI interrupts and interrupts on Port H since the push-buttons are connected to this port. You must use the SetClk8() function to use the PLL clock. However, the delay functions provided by the author of the textbook for EE360 must not be used.

There will be an oral exam for this exam when you demo the project. Please upload a team report in Moodle before you demo your project.

The report should indicate all deviations from the specifications given in this document.

Present the measured results as well as the expected values in a tabular form and calculate the percent errors. Explain the reason for such deviations. The report should also include the number of bytes contained in the S-RECORD file (.s19).

Please make an appointment using the following link

<https://people.clarkson.edu/~akhondke/Appointments/>

One important rule for this exam is that you can only work with your partners. If there are evidences of collaboration between groups, everyone in the groups will get a zero in Exam 2.