**Homework 3**

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| **ECE 346 Microcontrollers - Spring 2009**  **Homework 3**  **Due: Sunday, April  5, 2009 @ 11:59 PM**  **Report due: Monday April 6, 2009 @ Noon**  **Program:**      Write a program which will drive an LED on PortA pin 6 (OC2) with the signal portrayed by the figure below.  [http://sites.google.com/site/ece346s09/_/rsrc/1238396126610/homeworks/homework-3/hw3-graphL1.jpg](http://sites.google.com/site/ece346s09/homeworks/homework-3/hw3-graphL1.jpg?attredirects=0)      Your program implementation must not write directly to Port A pin 6, but rather use the appropriate output compare functions  to generate the appropriate signal on OC2. A correct solution will make proper use of the OMx,OLx output compare pin control  bits and advanced output pin control using OC1 to generate the PWM signal. An additional OC interrupt will be employed to  control the timing of the PWM signal.  **Report:**      Your report is to follow the same format used until now.      Additionally, make sure to address the following points In your report:   1. Describe how you approximated the output voltage values, and provide all relevant calculations. 2. Provide a calculation of the error introduced by your solution. 3. Describe the relationship between the main program body and the interrupts you used. What are the messages exchanged? 4. Describe the details of how you controlled the voltage of the PWM signal, and the associated timing.   **Submission:**      Submit a hard-copy of your report  to the instructor. Archive (zip) and E-mail your program files (.asm, .lst, and .s19 files) to the instructor.  Work on this assignment must be individual. You may ask questions and have assignment discussions only with the instructor.  Include a signed honor pledge with this assignment.  ***Late assignments will not be accepted.*** |