

**EE 308 – LAB 3****C Language Programming, Interrupts and Timer Hardware (Week 1)****Pre-Lab**

1. Write an assembly language timer overflow interrupt service routine to increment the lower four bits of PORTB, while leaving the upper four bits of PORTB unchanged.
2. Write an assembly language real time interrupt ISR to implement a rotating bit on the upper four bits of PORTB, while leaving the lower four bits of PORTB unchanged.
3. Write an assembly language program to have the system generate a timer overflow interrupt every 175 ms, and a real time interrupt every 66 ms. Add the two ISR's from (1) and (2) to complete the assembly language program.
4. Repeat (1) through (3) in C.
5. With a 175 ms timer overflow rate, how long will it take for the lower four bits of PORTB to overflow?