**UNCC, Department of Electrical and Computer Engineering**
**ECGR4101/5101, Fall 2007, Homework #10, Due: 11/26/07, at the beginning of class (20 points)**

1. How long did this homework take you? (1 point)
2. Read the Michael Barr article "Introduction to Counter/Timers". In three sentences of correct English, summarize the general concept presented in the article. (4 points)
3. Read the article Reentrancy by Jack Ganssle. In 4 lines of correct English, describe why Mr. Ganssle thinks you may find "60 Minutes" knocking on your door. (4 points)
4. Fill in the table below to show which tasks the processor will execute and when, as well as scheduler table contents. Assume that timer tick interrupts occur every 1 millisecond, all tasks take 750 microseconds to complete, and initialTimerValue for tasks A, B and C are 2, 3 and 4 respectively. Note that the entries in the table in column "Right before n" (e.g. timer, run, enabled) show the variable's value right before the timer tick interrupt occurs. This means that a task will run on the tick when its timer reaches 0 (but show the value after the tick and after the ISR executes). Assume task A has the highest priority, followed by task B and then C. (11 points)

**Tick Number**

| **Task Name** | | **Right before n** | **n** | **n+1** | **n+2** | **n+3** | **n+4** | **n+5** | **n+6** | **n+7** | **n+8** | **n+9** | **n+10** | **n+11** | **n+12** | **n+13** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | **timer** | 2 | 1 | | | | | | | | | | | | | |
| | **run** | 0 | 0 | | | | | | | | | | | | | |
| | **enabled** | 1 | 1 | | | | | | | | | | | | | |
| **B** | **timer** | 3 | 2 | | | | | | | | | | | | | |
| | **run** | 0 | 0 | | | | | | | | | | | | | |
| | **enabled** | 1 | 1 | | | | | | | | | | | | | |
| **C** | **timer** | 1 | 4 | | | | | | | | | | | | | |
| | **run** | 0 | 1 | | | | | | | | | | | | | |
| | **enabled** | 1 | 1 | | | | | | | | | | | | | |
| | **Activity** | --- | C | | | | | | | | | | | | | |