Project Assignment

EE475   Fall 2004

Assigned: Thursday, November 4, 2004
Completed project reports are due AT THE START OF CLASS on **Tuesday, December 7, 2004**

Project requirements:

(a) The projects must incorporate real-time operating system features implemented on the HC12 or HC08 processor.

(b) The project MUST use the Analog-to-digital and digital-to-analog features of the I/O board, **OR** involve an attached peripheral such as a keypad or LCD display, **OR** involve a task that is pre-approved by the instructor.

(c) Examples of suitable topics are given below, and other ideas will be discussed in class.

(d) Project teams may have one to three people. In any case, each student must solve a unique portion of the overall problem.

(e) One written project report is required for each team. Each report must demonstrate and document the unique contributions of the individual students in completing the project.

(f) Each team will give a brief (3-4 minute) demonstration during the regularly scheduled lab on Tuesday, December 7.

Project ideas:

1) Make a simple hardware interface to the HC12 I/O board, such as a temperature sensor or optical detector, and write software for control and display functions.

2) Use the hardware timer features of the HC12 to estimate the speed of a moving object.

3) Determine the procedure for storing a program in FLASH memory on the Axiom boards and make a boot-loaded program.

4) Develop an extensive Code Warrior project with real time A/D and D/A via the I/O board.

5) Use the PC-based port of microC/OS-II to demonstrate semaphores and mailbox messaging, as well as using task creation, suspension, and deletion.