ME 477 Embedded Computing

Laboratory Procedures

Before coming to the laboratory, complete the pre-lab preparation. That is, study the appropriate material and write the required programs. To make effective use of your lab time, you must first well understand how the experiment is intended to work, and have written the necessary programs.

Code Documentation

Place a "comment block" at the beginning of every subprogram (including `main()`). This should include: the subprogram name, the purpose of the subprogram, and a list of all parameters, including direction of information transfer (into this routine, out from the routine back to the calling routine, or both), and their purposes. Be sure to include your name in the header of the main program.

Indent bodies of subprograms, loops and IF statements, and do so with a consistent style.

Use comments! The comments should describe what is happening, how it is being done, what parameters mean, and any restrictions or bugs. Comments should not state what is obvious from the source code; they should succinctly be informative about the purpose of the code. Short comments should be *what*-comments, such as "mean value", rather than *how*-comments such as "sum of values divided by n."

Reports

Laboratory reports should be typed, and submitted only as pdf files. The use of LaTeX is strongly encouraged. Reports should be brief, consisting of the following parts:

1. Description: Briefly describe the major tasks performed by the program, including any limitations in the program's capability. Explain the functions of the main program and of each subfunction. Graph the hierarchical structure, showing how subprograms are called and how in turn further subprograms are called. Explain any algorithms.

2. Testing: State precisely the complete procedure for testing the program. The tests should not be unnecessarily extensive, but should be adequate to confirm that all major functions perform correctly. A code tester will attempt to follow your test procedure exactly. Each step should be explained with enough detail that someone knowing nothing about the experiment could carry it out. For each step, state what results should occur. For example, state what keyboard or electrical inputs should be applied, and how when and what outputs should be observed to confirm the program function. If the results are not as desired, state what they should be.

3. Results: Briefly discuss the results of your experiment. State how successfully the program runs, noting any unsolved problems. Answer any specific questions suggested in the assignment. Include the results (plots, etc.) of any required analysis. Suggest possible improvements, such as extensions to the program beyond what is required, that might be made with more time.

Source Code

You will also submit your source code file (`main.c`) along with your lab report. Don't submit the entire project; just (`main.c`). Note that all of the functions that you write must be within (`main.c`).

Submission

Typically, labs will be assigned on a Friday, and are due at 11:59 PM on the subsequent Friday.
See Laboratory Report Submission

Please, do not submit reports in any other way.

Late Penalties

The grade will be reduced by 10% per workday late. A report submitted after 11:59 PM Friday and before 11:59 PM Monday is one day late. The maximum late penalty is 50%.