Comments regarding CPTR-480 completion

As stated in the syllabus, (un)fortunately there is no final exam. However, as is also stated in the syllabus you are required to attend our final class period, i.e. final exam time, 12noon to 2pm Wednesday June 8. Because there is no final I expect that you have been and are working on the project.

Project due time

I earlier stated that the project was due anytime on Wednesday (11:59pm is still Wednesday) and that is still true. I also said that if needed it is likely that I would allow additional time if requested.

Project software

The previously posted "Project Information" document together with my comments in class/lab define required functionality. From earlier assignments you have functions to read data from sensors and create motor control signals. The big new thing in the project is creating a control function that will take data from sensors and calculate motor control signals that will keep the vehicle on a desired path. As mentioned in class, a simple overall structure is a modified round-robin approach where a sequence of functions are called to get sensor data, compute control, and update motor pulse lengths.

I suggest completing this sequence once every 10ms (100 times a second). Program the PIT to generate an interrupt every 10ms. In the PIT interrupt handler set a flag (i.e. set a global variable to one). That is all the interrupt handler does. The last action in the code sequence that makes up the round-robin approach is to poll the flag and wait for it to be set. When it again is set, reset the flag and begin another round. This way when you add more functionality, such as adding reading the distance sensor, the timing of the control loop remains fixed and operation of the control loop is consistent not needing tweaking as you make changes that affect loop timing.

Project report

A formal report is not required for this project. BUT, I do expect the following deliverables:

1) A summary of what you accomplished, what works, what doesn't work, and any comments you wish to make about the project. Seems like this can be done in a paragraph or two and less than a page (although I am not imposing a limit). Turn in as a pdf file.
2) Your source code. Source code should comply with the "code requirements" document which is the bottom document under Labs on the class web page. In particular there should be a comment header at the top of each source file filled in with appropriate information, at the top of every function you create there must be one or two dashed lines enclosing a brief statement of function and listing who wrote it, and function or variable names should chosen and used in a way that makes it easier rather than harder to follow the flow and logic of the program.

D2L submission

Zip up your complete project and submit to the drop box. Also submit your project summary to the drop box.

During final exam time I desire to see what your vehicle is doing, even if it is not yet behaving as you want it to.