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Autonomous Embedded Systems
Summer 2018

Assignment 4

Assignment issued on Thursday, May 3, 2018

Honor code: Work on the assignments is to be carried out in the assigned groups of two or three students. You're welcome to talk to classmates about assignments conceptually, but the implementation must be your own unless otherwise noted. For example, speaking with a classmate about why some bug might be present in your program is okay as long as your classmate doesn't share with you a program that fixes your bug. You should not use any existing code that we don't supply, whether it is online or otherwise. Further, copying code from places like Stack Exchange is prohibited: you will learn much more if you write your own programs.

4.1 Digital Compass

We want to enable our robot to perform directional nagivation. This can be achieved by using the digital compass module CMPS10, which is connected to the robot using a serial interface (UART).

- Develop functions to read and write characters via the UART interface UART1. Remember to configure the related pins (P2.0 and P2.1) correctly and to configure the correct baud rate for the transmission (9600 bps, 8 data bits, **2** stop bits).
- Write functions to read the values for direction, pitch and roll from the compass module
- Display the parameters on the LCD (optional: implement a graphical display)