6.270 Team Assignment 2

Released: Friday, January 12, 2001 Due: Friday, January 19, 2001 5PM
Course website: `http://web.mit.edu/6.270/`

Timely and satisfactory completion of this assignment is required for you to pass 6.270.

Purpose

The goal of this assignment is to teach you to integrate your kit elements into a basic robot.

After you've completed this assignment, you will know how to:

- wire a sensor or two
- wire motors
- build simple gear boxes
- connect sensors and actuators to board
- download code to the board
- run IC
- do basic programming of your robot

Deliverables

2.1 Basic Robot Functionality

This week, your task is to build a basic demo robot capable of responding to its environment. The robot should be capable of moving forward and backward, as well as turning. It should also have some higher functionality, preferably something that shows reaction to its environment. You are free to implement whatever you feel is appropriate. You might consider using buttons as bumpers, using LEDs and photoresistors to orient yourself in the starting position ... you get the idea.

Be creative, and make sure any observer can tell that your robot is making some decisions based on the environment. For instance, if you are implementing bumper sensors, have your robot turn and go another direction (or something else appropriate).

You should not need to spend too much time on this assignment. This assignment may or may not have anything to do with your final robot, we do not care. We just want to be sure that you are capable of making a full robot. It does not have to be large; a minimal robot is just fine as long as it supports the weight of the battery and controller board.

That notwithstanding, feel free to make some music, too. =) Info about the beeper is in 5.7.4 of the HB Manual ... and if you are feeling especially sedulous, you're welcome to multitask (5.8) it.

2.2 Documentation

Write down a few sentences about what you did for 2.1. We have bad memories; a hard copy will help us make sure you get credit for this assignment.

2.3 Presentation

In advance, arrange a meeting for your team, organizer, and TA. If your team is expeditious, an earlier meeting time is probably beneficial to your robot. Keep in mind that Friday is the absolute due date, not a recommended meeting date. Hand in your documentation. Give a short, impromptu presentation. Expect some short questions afterward. If things are in order, your organizer will check you off and clear you to work on Team Assignment 3.

Help and Advice

As always, if you have questions, feel free to email your staff pair, use the zephyr instance, or email all of us at `6.270-staff@mit.edu`. Good luck!