Lab 3: Cricket cars

Lab professor: Holly Yanco

Start in lab: Thursday 2/10 or Tuesday 2/15

Due: At start of lab on Thursday 2/17 or Tuesday 2/22 (due Tuesday for Tuesday lab students; Thursday for Thursday lab students)

Overview: In this lab, you are given a small, round mobile robot that carries around the cricket. The robot has two motors—one driving the left wheel, and one driving the right wheel. Your task is to program the robot to do one of two things (or both, if you have time):
   1. Back up and turn when the touch sensor on the front of your robot is hit.
   2. Draw a pattern on the paper in the provided arena.

Materials (provided): Robot car, super cricket, touch sensor (same as the switch sensor), markers.

Process:
1. Get a cricket car from Holly. (You’ll need to return the car in lab next week, but can take it home with you, if you’d like.)
2. Put your cricket into the car (can be secured with a rubber band; if not secured, be careful when moving your car). Plug in the motors.
3. Determine where you want to place the bump sensor. You may want to design a larger bumper to attach to the bump sensor. Add it to the robot car.
4. Write the code for each of the tasks. Show Holly your robot when it is working.
5. If you’re done with the first task with over a half hour left in the lab, try the other task.
6. Remove your cricket and sensors from the robot car before turning it in (either at the end of the lab period or next week).
7. Document your process (Lab write-up)

Lab write-up: Your write up should include the following:
1. Your name
2. A description of how you modified the robot (which sensor(s) you added and where, for example)
3. A discussion of how your model performs
4. A copy of your final running code (e-mail this to Holly as well).
5. Any other thoughts or ideas.