Assignment2:
Maze Wall Follower and the Subsumption Architecture
Due: Tues, March 14, demo in class
10 points

You and your partner should build a basic subsumption architecture to code a maze solving robot.

The type of maze solving you should use is wall following. In particular, your robot should keep the wall on its left at all times. If there is an opening to the left it needs to follow it. If there is a wall in front it should turn right. You may assume that the maze consists of 90 degree turns only (your robot might not make accurate turns though!). The maze will consist of wood walls that are approximately 9" high. I will build a maze in class for the demo, but you can test on almost any wall/doorway. You should use the sonar sensor to 'see' to your left. You should use the touch sensor to 'see' in front of you.

For the subsumption architecture, you want to think about what your behaviors are. Some, like wall hitting with the touch sensor are obvious. However, there are some decisions you need to make in terms of wall following in particular (is it a single behavior, or is it several smaller sub-behaviors). You should also include a behavior that will allow the robot to stop running when one of the buttons on the robot brick is pressed. In your writeup, you should describe the behavior choices you made.

As far as the basic subsumption architecture framework goes, you should use the built-in classes provided by lejos. These are Behavior and Arbitrator in the subsumption package.

For the ultrasonic and touch sensor, make sure you use the sensor framework with the SampleProviders as discussed in class, as opposed to older ways of accessing the sensors.

On the due date, you will turn in a hard-copy of your writeup (described in the section above), an electronic copy of your code in the W: drive drop-box, and demo your robot running through a maze of my design during the live in-class demo.