# Assignment 8 – Sensors

## Problem 1

Write a program for your robot which uses a touch sensor (or multiple touch sensors) to correct its path when encountering obstacles. In particular, your robot should do the following:

- Begin by traveling forward.
- The touch sensor(s) should be placed so that it is pressed when the robot runs into a wall or other obstacle. When this happens, the robot should back up a short distance, then turn ninety degrees to the left.
- The robot should now start traveling forward again until it hits another wall, and so on indefinitely.

Don't forget that you can always kill a running program by pressing the enter and escape buttons (the orange button and the one below it) at the same time.

## Problem 2

Write a program for your robot that uses a sound sensor to react to loud noises. Your robot should do the following:

- Begin by traveling forward.
- Whenever the robot hears a loud sound, such as you shouting at it, it should stop moving, then turn ninety degrees to the right, then start moving again.

Part of this problem is figuring out what exactly should count as a "loud noise." Ideally, the robot should be fairly sensitive to sounds, but not so sensitive that the noise of its own motors or ambient sounds causes it to make durns.

## Challenge problem

Combine the two behaviors from the previous parts into a single program. That is, the robot should move forward indefinitely, but whenever it encounters a wall it should turn left, and whenever it hears a loud noise it turns right.

Now design an obstacle course by putting up barriers and choosing a start and finish location. To complete the course, you must navigate the robot through the course by making noises as necessary to tell it to turn.

Let other groups try out your obstacle course by controlling your robot with sound. You can have other groups compete to finish your course in the shortest time.