**Artificial Intelligence**

**CW**

**(Assignment 1)**

This coursework extends the behaviour of the Auto-Car.

You are to modify the program so that the car will do the following:

1. The car is placed in a **square walled area** and should follow the walls in a clock-wise fashion. It should stay within the edging zone (the yellow corridor) at all times. You will need to modify the behaviour of the car when it bumps into the wall.

2. Create a new **breed** of car that will move around the walled area in an **anticlockwise** manner, with the nearest wall on its right.

3. Program the car to avoid obstacles in the edging zone. Obstacles should be rectangular and red. To draw an obstacle, use the commented out code in the *setup* procedure.

Advanced Tasks

4. Adapt the code so that two cars can be in the area at the same time, one moving clockwise and the other anticlockwise. They should avoid each other when they meet.

5. Try and program the car to do general wall following and obstacle avoidance using both left- and right ultrasound sensors so that it can follow a wall on either side.

Notes:

1. Your car should be able to tolerate some noise in its sensors and motors

2. You must do this coursework in pairs.

3. You work will be evaluated in a short demonstration of your simulation during the practicals in the week starting at the 13th of November. You should bring with you the printed out and signed Assignment Briefing Sheet which is now on StudyNet.