# The Challenge Lap

Programming Assignment #2
CSC 481 – Spring '10

Problem Setting

The problem setup is the same as in the "Warm-up Lap" with the added goals:
(1)   to make your code as general as possible
(2)   to perform a domain analysis using goal based problem decomposition
(3)   to use the insights from the problem decomposition in the structure of your code
(4)   to use your knowledge of IPC
(5)   to use knowledge representation techniques if appropriate

As before, you are to write a program with the Java API that directs a quagent to walk once around the perimeter of a room. More specifically, once your quagent has spawned, walk straight to a wall. Upon reaching the wall, turn left. Walk until you reach the end of this wall then turn left again. Continue to walk along the perimeter of the room until you are back at the point where you first encountered the wall. The following diagram illustrates a typical path.
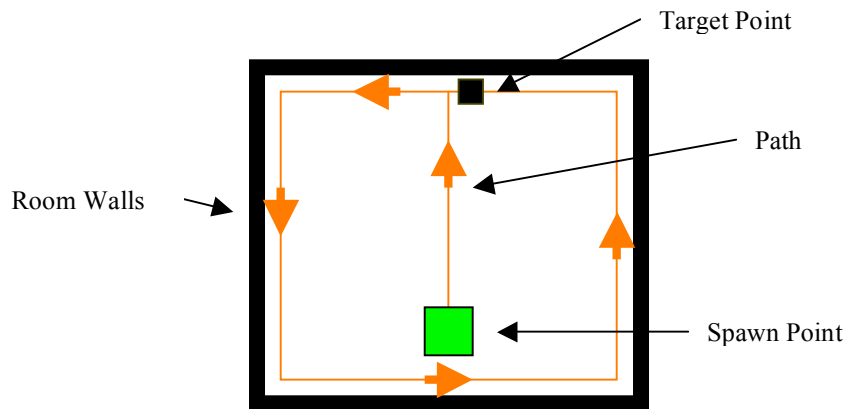
Once you reach the target point simply abandon the quagent (that is, call the 'close' command).

Additional rooms for testing your code are available on the website. NOTE: do not hard code room dimensions or spawn point coordinates, we will be testing your code on rooms that you will not have seen!

Deliverables

(1)   a zip file with your Java source code and the compiled Java class files
(2)   a report on your problem decomposition and program design

Submitting your Project

Submit your work by email to hamel@cs.uri.edu by **Monday February 15th 10pm**.

GRADING:
20% - domain analysis report
40% - structure of the code/implementation of the goal-based problem decomposition
40% - correct execution of the program in various rooms

NOTE: teamwork is encouraged during the design phase, but you have to submit your own report and program (these have to be your own work and NOT shared among your team).