CSE 512 Homework Project 1 – Winter 2012

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(10 points)

Complete your Python program from lab1 so that a robot `R` is able to make a specified number `K` random moves (up, down, left, right) within the gridworld. The grid world should contain some amount of impenetrable wall space. While moving, your robot should (a) not wander beyond the boundaries of the grid, and (b) not move into any cell that is part of a wall. E.g., when your robot is given the instruction to move up when the cell above it is either outside the grid or wall, let your robot stay in place.

Use Python's function `random.randint(n1, n2)` which generates a random integer between `n1` and `n2-1`.

It will be advantageous if you implement the robot's eight sensors (s1, ...,s8) as separate functions that return 1 if the sensed cell is wall, 0 if it is free, and -1 if it is outside the grid.

Test your program by instructing the robot to make a larger number of moves (e.g., 200). Print out the new gridworld after each move so that you can monitor the path that the robots takes.

Hand in: (1) A hardcopy of your Python source code (your .py file), and (2) a script that shows the **last 10 moves** that your robot makes. Feel free produce the script by cutting and pasting the relevant portions from the Python Shell window.