CS 1301 – Fall 2008

Homework 5 – Scribbler, Phone Home!

Due: Monday, October 27th, at 6 PM EST (10% off if turned in before Wednesday, October 29th, at 6PM)

Out of 100 points

Files to submit: hw5.py

For Help:
- TA Helpdesk – Schedule posted on class website.
- Email TAs

Notes:
- **Don't forget to include the required comments and collaboration statement (as outlined on the course syllabus).**
- **Do not wait until the last minute to do this assignment in case you run into problems.**
- **If you find a significant error in the homework assignment, please let a TA know immediately.**

_____

Part I --- Introduction

Well, now you've spent some time getting to know your robot. Perhaps you even gave it a name and a back story. Now that we've gotten familiar with the Robot Arena, let's get a bit more involved.

This assignment is based around the previous one, so keep in mind all the methods/sensors you used in Homework 4.

Mission:

Using Pair Programming (in the same groups you had from HW 4), you will need to satisfy the following: Your robot will be randomly placed in an arena of size 5 x 3 (Unit: 11 in) that will have one red wall segment (11" long). The wall will also have a white piece of floor in front of it (See the Robot Arena construction guide for more information.) You need to write a program to get your robot to touch the red wall segment within two (2) minutes without hitting walls of other colors. The robot needs to be moving at a minimum 1/3 speed. Once the robot has **touched** the wall, it should celebrate. Again, how it celebrates is up to you. Your robot should move around and beep at a minimum.

Note: A small part of your demo grade will be based on how quickly the robot makes it to the red wall. This is to discourage, but not disallow, random-walk solutions.

HINT: The camera and line sensors can detect changes in scenery.

If you need help with the move functions, go to
<http://cs.brynmawr.edu/~dkumar/Myro/Text/Fall08/PDF/Chapter2.pdf>

Part Two --- Turning it in, and Demo.

Be sure to put the lines from myro import * and initialize() or init() at the beginning of the file (after the required comments). Be sure not to specify the port parameter in your initialize command, such as initialize("com4"). This makes it very time consuming to grade if we have to go into your code and change the com port to the one that works on our specific system.

Reminder on collaboration statement:
This is a group assignment. **Each group member** needs to turn in hw5.py to T-square before the deadline. Please include your name, and all your group members' name in the collaboration statement.

Demo:
Each group (**Both members**) needs to come to the TA's help desk to demo the program to one of the TAs, **preferably your grading TA**. You will be asked questions regarding your code as well. If one of the group members is not present for the demo, his/her grade will be based ONLY on the code portion (a possible 40 points) UNTIL they come see a TA to answer questions relating to the code. *Print out and bring a grading sheet (next page) to your demo.*

Grading Criteria:

Demo (TA's Discretion)	**60 pt**
File named correctly	**5 pt**
Demonstrates correct use of iteration	**5 pt**
Detects obstacles	**10 pt**
Detects/identifies surroundings	**10 pt**
Celebration in the end	**10 pt**

Written By Bobby Lee and Melody Nailor, Fall 2008

Robot Navigation Assignment
TA Demonstration Grading Sheet

Group Members: _____

_____

_____

Demo TA: _____

Grading TA (if different): _____

5pts _____ Speed (5pts for 0-30sec, 4pts for 30-45 sec, 3 pts for 45-60sec, 2 pts for 60-90 sec, 1pt for 90-120 seconds)

10 pts _____ Robot navigated *without hitting obstacles*!

15 pts _____ Robot located/touched the red wall segment!

30 pts _____ All group members understood and could explain the code.

Total: _____ / 60