CMSC 143: Introduction to Object-Oriented Programming with Robots

Assignment 5: Robo-Cockroach
Due December 4, 2009

In this lab, we will create an autonomous robot creature; we'll turn the scribbler into a robot cockroach. Your goal is to create a robot program that will run as long as possible without any intervention – to make the robot autonomous. You can add as many levels of behavior as you like, but at the very least your cockroach should:

1. Scurry about randomly looking for food.

2. Avoid running into things.

3. Run away from light.

You might add one or more of these behaviors:

1. Locate its nest (something bright green) and head home when it it gets tired (batteries run low).

2. Allow a user to drive the cockroach with the gamepad.

3. Interact with other cockroaches.

Learning Objectives

∘ Program Robot Behaviors   ∘ Design Modular Programs

Deliverables

cmsc143_cockroach_LASTNAME_FIRSTNAME.py – Your cockroach program.

Your program should be designed and implemented in a modular fashion. We should be able to add and remove each level of behavior easily (i.e. you should not create one loop with a bunch of if-statements). You should develop your program one behavior at a time. After each level is completed, you should write a paragraph (as a multi-line comment) describing how it works and how well it works.