

ROOMBA Project #2
Introduction to Artificial Intelligence
CSCE 4310
Spring 2007

Distributed: Tuesday, 24 April

Due: Thursday, 3 May

What are you to do?

Start with the system that you completed for project 1. The robot goes to a goal coordinate then returns. Modify the implementation so that it performs a similar task or the current one better.

Suggestions on what you can do

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1. If the first version is not able to identify “unreachable” goals, modify it so that it does recognize such conditions and gives a signal.
 2. Give the robot two goals – when it reaches the first, it must proceed directly to the second. (An alternative would be to have it return to “home” and then embark to the second goal.)
 3. Instead of a goal consisting of a numeric coordinate, have the robot search for a landmark such as a wall/barrier, or better yet, a corner; the robot could be constrained to search within a limited region.
 4. If the current version does not permit the robot to circumnavigate barriers, change it so that it will.

The above is not an exhaustive list. You may have an idea not expressed in the list. If so, make sure you can justify it as having “A.I.” component.

What to hand in

Submit on the due date:

- The computer code
- A document that contains:
 - Your name (two names if you are working with a partner using the iRobot platform)
 - A statement of the objective of the revision
 - A statement of how the revision differs from the original
 - A short high-level description that covers how the agent/robot maintains an internal state, which actions it can select at each step, and the action selection function
 - A description of the software in whatever form (e.g., block diagrams, flowcharts) you wish

I expect the report to be about three pages - more or fewer is o.k.