

Wandering Due October 14, 2005

You must form a group of two and, together, design and implement an algorithm that will cause Twonky the robot to “wander.” There are a few hard design specifications:

- Twonky cannot strike any obstacles (at least none that could be seen with its sonar).
- Your algorithm can use only the sonar and bump sensors (and not the camera or other remote information).
- It must be able to operate in environments it has not previously encountered.

There are also some soft specifications:

- Your algorithm should keep as little internal state as possible.
- Twonky should explore (by travelling) as much of its environment as possible.
- Twonky should not get stuck in “loops.”

You should use the simulation environment to initially test out your algorithm. Construct different maps and see how it behaves. When you feel confident in your algorithm, you should test it on the real robot and make any modifications necessary to ensure that it works well in both simulation and on the real robot.

You will submit the code for the assignment (source code only, no objects please) and a write-up of the work via the “turn-in” system. Your write-up should contain at least

- Your names,
- An explanation of the algorithm and how it works,
- Any necessary details on how to compile and run the software, and
- An analysis of how the real robot differed from the simulation for this project.

I would expect such a document to take up approximately one or two pages.

The entire project will be graded based on the following criteria.

- Creativity/Novelty (20%)
- Performance (30%)
- Code Readability/Maintainability (30%)
- Writing (20%)