

16x62: Lab0

Due: Tuesday, Week 2

Introduction

The purpose of this lab is to familiarize you with the robots (i.e., force you to read the Robot Manual) and with your team members (i.e. force you to meet them). Not to worry, it's really easy!

For each assignment, create a button on your java console:

- (1) We will click the button.
- (2) Your assignment code starts running and continues running until we exit the application (you'll tell us how best to exit).

Assignment 0.0: The Dumb Wanderer

Write `DumbWander`

When called, this will cause the robot to move forward at least 12.5 cm per second as long as its sonars do not detect an obstacle in its path. Before it hits anything that it can see in its path, the robot should stop. If you remove the obstacle, it should start to move again. Ad nauseum.

Note that this assignment involves no robot rotation and that the obstacles are usually going to be tall and slender things called human legs, although they will at times be the walls and chairs.

Evaluation:

- Moves no obstacle (1)
- Stops when obstacle (1)
- Moves when obstacle removed (1)
- Stops when off-center obstacle in path / Moves when it is just off the edge (1)

Assignment 0.1: The Head-Turner

Write `TurnClosest`

When this is called, the robot should exhibit the behavior of rotating toward the closest object that its sonars detect.

With some care, your solution can look smooth and intelligent. For instance, it is a good idea for the robot to turn faster if a person is ninety degrees from its front compared to twenty degrees. We'll be testing this by walking around your robot as it sits in an empty, open space.

Evaluation

- Control Works? (2) (-1 if overshoots; -1 if oscillates seriously)
- Efficient (1) (Goes shortest way to goal)
- Speeds up? (2) (1 if increases speed with angle, 1 if able to keep up with fast human)