

Final Project

Overview

For the final project, each team will implement an object-grabbing task with their robot. The robot should be able to find an object placed in the environment, grab it, return the object to the origin of the map, and release it. The robot should do this task three times with three different objects placed in the environment.

The robot will start at the center of a 10cm square region – the “drop zone.” The robot should drop off the objects in the drop zone. The full environment space expands beyond the drop zone. The objects should be randomly placed in the environment – the robot will have to discover where they are rather than relying on hard-coded positions for the objects.

The way you implement and achieve the task is open-ended. You can choose whatever objects you want. You can also place any aids in the environment that you want, such as printed markers and/or walls.

Deliverables

Each team should prepare a report on how they solved the problem. Include diagrams, photographs and source code snippets as appropriate. Also include your complete source code with the report.

Each team will also demonstrate their solution during the final exam period, Thursday, May 10, 12:40-2:40pm. Teams should bring everything necessary for the demonstration, including the objects to be grabbed and any environmental aids. All teams will set up and prepare to run their demos at the same time; I will come around to each team at some point during the two-hour period to see the demo and talk to you about your solution. (I am hoping to find a bigger room for the final exam to accommodate this.)

Grading

The final project is worth 200 points: 100 points for the implementation, and 100 points for the project report and demonstration. Points will be awarded not based on whether the solution works perfectly, but instead on whether the effort represents a thoughtful and informed analysis of the problem and the proposed solution.