

# CS148

## Building Intelligent Robots

### Final Project

*Out: 29 Nov 2004*

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### Introduction

For the next four weeks, you will be working on a project of your own invention. Proposals for this final project will be handled informally between your group and the instructor. The final demonstration will most likely consist of two parts: you will have a chance to demonstrate all of the specific behaviors of your robot to the course staff, and then there will be a ‘Talent Show,’ open to the public, where you can show off your robot in all of its glory.

We are making a couple of provisions to allow you more freedom with this project than you have had previously: we realize that it is difficult to be restricted to the limited hardware of one brick, two motors, two touch sensors, etc., and so we will distribute the small amount of extra materials that we have to groups based on need. For projects that require more resources than the issued robot kits, there are several robots with a generic configuration available for use in the ai lab. We will determine if this is workable once we look at the project proposals.

The important dates are as follows:

- |                                |                                       |
|--------------------------------|---------------------------------------|
| • Thursday, November 18, 10pm  | <b>Informal Proposals Due</b>         |
| • Tuesday, December 7, 3pm–5pm | <b>Final Presentation/Talent Show</b> |
| • Thursday, December 9, 10pm   | <b>Final Report Due</b>               |

**Note that the final paper handin deadline is firm.** We are giving you some time after the final demonstration for you to add finishing touches and clearly describe all the work you did in the last few days, so we expect them to be handed in on time so that we can begin grading them. Please submit your final report, final project source code, and any accompanying material (e.g., slides) via the handin script under the assignment “final”.

### Proposal

Your proposal should describe the premise of your project and give a detailed description of the tasks your robot will complete. This description will give the course staff a basis for suggesting the scope of the final project and starting point for implementation. If your proposal is too vague, we will try to point you in the right direction.

For the final project, each group should select a TA to serve as an advisor to the project. The TA assigned to your group will be the one who tracks your work most closely and who most critically evaluates you at the final demonstration.

demonstrate the basic behaviors of your robot that you have detailed in your proposal. This will be informal and only the TA assigned to your group will be evaluating you.

## Talent Show

The Final Presentation/“Talent Show” is still not entirely planned since we don’t know yet what projects there will be and how much time it will take to demonstrate and evaluate them. In general, there will be two sections. Each group will have a designated period of time to demonstrate their robot in detail to the course staff (this is the basis of your grade), followed by a more general demonstration to the public. As the day approaches, we will ask each group for an estimate of how long it will take to demo their robot so that we can plan out the exact schedule.

## Final Report

As was the case with every other project this semester, each of you will be required to hand in an individual writeup for the final. This writeup should begin with the conception of your project idea, and continue with a thorough and comprehensive account of the steps by which you achieved your final product. Note the various ideas you had, experiments—both successful and failed—special algorithms, hardware designs, and overall theories behind your project. Additionally, you should present ideas for extending the project to address the limitations and extend the functionality of the robot.

There is no specific format that the final report must follow. You must decide what material and discussion is pertinent and appropriate in discussing the project. Given the significance of the report, it would be to your advantage to err towards including more detail and discussion.

This project is your time to shine, so make sure we know everything you went through during this month!

## Grading

The breakdown of your grade is as follows:

Writeup	50%
Final demo	50%
<b>Total</b>	<b>100%</b>