

FP1: Final Project Planning

CSCI 3302: Introduction to Robotics

Group Formation due Friday 11/6/20 @ 11:59pm

Initial Proposal due Tuesday 11/10/20 @ 11:59pm

The goals of this assignment are:

- Organize your final project group (using Piazza) and define a final project proposal
- Create a plan for the next month, including deliverables and interim deadlines
- Create a list of equipment (robots, sensors, etc.) that you intend to use within Webots
 - <https://cyberbotics.com/doc/guide/robots>

Part 1: Project Proposal

1. Create/Share a Google Doc (<http://docs.google.com/>) that your entire team can edit.
2. Add each team member's name and e-mail to the top of the document, along with the name of your project.
3. Add sections for:
 - a. Abstract
 - b. Equipment
 - c. Deliverables and Implementation Plan
 - d. Demo
4. Write a succinct (1 paragraph) abstract describing what you're creating. This should be a high level description that is readable by anyone with a general Computer Science or engineering background.
5. Create a list of **deliverables**, where each deliverable is a component of your final project. You are **strongly** encouraged to subdivide deliverables into more actionable steps, such as:
 - a. ☐ Create Vision System – Lead: _____ Deadline: _____
 - i. ☐ Install OpenCV Python Package & Verify it works with simulated webcam
 - ii. ☐ Capture images of target objects and identify their color ranges
 - iii. ☐ Write color threshold algorithm to locate colored objects
 - b. ☐ Implement robot-side controller – Lead: _____ Deadline: _____
 - i. ☐ Create state machine with states for "Listen for command" and "Navigate to Pose"
 - ii. ☐ Verify that commands are being received over the robot's Serial port
6. For each higher level deliverable, write an **implementation plan** detailing the steps necessary to go from design document to implemented product.
Include a target completion date and a designated 'lead developer' on your team for each item.
It is often helpful to specify tests for each major deliverable, indicating that you have come up with a way to determine if a particular component is working or not.
7. Write a short script detailing how you will demonstrate your final project once it is completed, in such a way as to showcase its various components.

What makes for a good project proposal? Combine the components that you've learned about in class with some novel sensors or scenarios to create an autonomous robotic system. The most important thing to consider is scope and feasibility: ensure that you have graceful fallbacks in case some technical components don't end up panning out.

Have everyone in your team join the same Final Project Team on Canvas and have ONE person submit a copy of your team's project proposal to the "Final Project Proposal" assignment on Canvas. Report any issues directly to the professor/TA via Piazza or E-mail, particularly in cases where a teammate did not contribute or where consensus couldn't be reached for teammate roles/responsibilities so we can unblock you as efficiently as possible.