Lab 8: Final Project Planning

CSCI 3302: Introduction to Robotics

Report due 4/14/20 @ 11:59pm

(Early turn-in bonus: +2pts extra credit per day up to max of 14pts)

The goals of this lab are:

- Meet with your final project group, define a final project proposal
- Create a plan for the next weeks, including deliverables and interim deadlines
- Create a list of resources (robots, sensors, etc.) needed for your project

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. 3. Add sections for:
    a. Abstract
    b. Equipment
    c. Deliverables and Implementation Plan
    d. Demo
4. Write a succinct (1 paragraph) abstract describing what your project is/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 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. 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
c. [ ] Implement laptop-side controller – Lead: ____ Deadline: ____
    i. i. …

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.
8. Sign up for a First and Second meeting using the links on the course Moodle.

Part 2: Lab report

Submit a copy of your team’s project proposal to the course Moodle. Report any issues directly to the professor via e-mail, particularly in cases where a teammate did not contribute or where consensus couldn't be reached for teammate roles/responsibilities.

To be (optionally) submitted separately via e-mail to Prof. Roncone: aroncone@colorado.edu

(Optional, confidential, not for credit) A brief description of any problems (either technical or collaborative) encountered while performing this lab (e.g., issues with the clarity of instructions, clarity of documentation, lab colleague’s behavior, etc.)