EECS C106A/206A / BIOE C106A

Final Project Presentation/Demo/Report Instructions

Fall 2019

Due Date Reminders

- **Presentations/Demos**: Thursday, Deccember 12 and Friday, December 13, 111 Cory, schedule below
- **Reports**: due Friday, December 20, 11:59p, submitted via online survey

1 Presentations/Demos

On the final presentation day (12/12, 12/13), each group will give a two-part presentation of their final project, including *a)* a $\sim$ 5 min talk (with slides) and *b)* a working demo. Finally there will be a *c)* 5 min session for questions. Because there are so many of you (41 groups!), we will be splitting you up into 6 blocks of 7 teams each over two days. **Each team will be granted a 10min slot for the combined presentation and demo, and all team members will be expected to remain as audience members for the other teams in their block.** The overall schedule is as follows:

Thursday	
9:00-11:30a	BLOCK 1
11:30a-12:30p	*lunch*
12:30-3:00	BLOCK 2
3:00-3:30p	*coffee/snack break*
3:30-6:00p	BLOCK 3

Friday	
9:00-11:30a	BLOCK 4
11:30a-12:30p	*lunch*
12:30-3:00	BLOCK 5
3:00-3:30p	*coffee/snack break*
3:30-6:00p	BLOCK 6

Lunch will be provided, and snacks will be available during the indicated coffee breaks. A Google form has been announced on Piazza to allow you to indicate scheduling preferences and resource needs related to presentation day. A detailed presentation schedule will be generated based on these preferences. We will do our best to schedule presentations such that each team has both adequate space and sufficient setup time. **Between the slide deck talk and the demo, all team members are expected to have a speaking role in the presentation.**

Specific expectations for each presentation element are described below.

1.1 Slide Deck Presentation

Your presentation should give a brief overview of:

- the original goals for the project;
- what your project does (ideally, illustrated with system design and operation diagrams);
- difficulties your encountered; and
- improvements/extensions you would make if you had more time.

To avoid wasting time on laptop/projector troubleshooting, we'll ask you to send us the presentation slides by 11:59p on 12/11 so we can collect them all on one computer (google form forthcoming). Your presentations are required to use google slides.

1.2 Demo

The second part of your presentation will be a (working!) demo of your system. While it does need to be completely polished or finalized, you should demonstrate the basic idea of your project on your real hardware and show that it is functional. You may also include a short video if it enhances your presentation (e.g., a sped-up video showing the completion of a usually slow task).

If you're using any other hardware, you'll need to bring it to the demo along with any equipment necessary to make it work (e.g., power adapters). While we'll do our best to order presentations such that teams have adequate time to set up (e.g., not scheduling two projects using the same robot back-to-back), **you shouldn't plan on having much more than the 10min slot of the presentation before yours to get everything ready to go** and should design your system accordingly. By the same token, **make sure any changes you make to the setup of lab equipment will be easy to undo** to allow the next team using the hardware a clean slate.

2 Report (website & video)

Your final reports will take the form of a **website**, the address of which should be submitted to the provided survey by 12/20 at 11:59p (information forthcoming). Your website should show off all aspects of your project, and it should be something you're proud of and can show off during job interviews. Your website should also link to your **video(s)**, in which you should describe the purpose of your project and show your project in action. You may have one single video or multiple videos; it's up to you.

You may use any platform you like to host the website; Google Sites, Wordpress, and Weebly are options. Github Sites is likely the most professional option, and you can connect it to your github repo, so I recommend using it. You may host videos on Youtube or any other service.

Your website should include the following sections:

1. **Introduction**
   (a) Describe the end goal of your project.
   (b) Why is this an interesting project? What interesting problems do you need to solve to make your solution work?
   (c) In what real-world robotics applications could the work from your project be useful?
2. **Design**
   (a) What design criteria must your project meet? What is the desired functionality?
   (b) Describe the design you chose.
   (c) What design choices did you make when you formulated your design? What trade-offs did you have to make?
   (d) How do these design choices impact how well the project meets design criteria that would be encountered in a real engineering application, such as robustness, durability, and efficiency?
3. **Implementation**
   (a) Describe any hardware you used or built. Illustrate with pictures and diagrams.
   (b) What parts did you use to build your solution?
   (c) Describe any software you wrote in detail. Illustrate with diagrams, flow charts, and/or other appropriate visuals. This includes launch files, URDFs, etc.
   (d) How does your complete system work? Describe each step.
4. **Results**
   (a) How well did your project work? What tasks did it perform?
   (b) Illustrate with pictures and **at least one** video.
5. **Conclusion**
   (a) Discuss your results. How well did your finished solution meet your design criteria?

(b) Did you encounter any particular difficulties?

(c) Does your solution have any flaws or hacks? What improvements would you make if you had additional time?

6. **Team**

   (a) Include names and short bios of each member of your project group.

   (b) Describe the major contributions of each team member.

7. **Additional materials**

   (a) code, URDFs, and launch files you wrote

   (b) CAD models for any hardware you designed

   (c) data sheets for components used in your system

   (d) any additional videos, images, or data from your finished solution

   (e) links to other public sites (e.g., GitHub), if that is where your files are stored

Tips for a Successful Project

- Make your system as modular as possible. Work toward a minimal functional system first, then augment different modules as time permits.
- Tackle limiting steps (e.g., hardware construction) first.
- **Talk to us beforehand if you fear you will miss a deadline** — in general, late project deliverables will not be accepted. We understand that life happens, but you must reach out to us before the deadline is missed.
- Use **version control**! Maintain a code repository in GitHub, Bitbucket, or your favorite alternative.
- Take lots of pictures and videos at every stage of your project, and keep other records of your progress.
- **Post your technical questions to Piazza**, and better yet, help answer your classmates' questions! You're likely to be solving some of the same problems, and they might be problems the course staff has never seen before.
- If you're tired of project emails clogging your inbox, try making a team Slack.