Defuse the Bomb

Information

Preliminaries

A few important notes:

- **See the rubric for more information!**
- You will work in groups (a maximum of three students).
- You will have a good bit of class time to work on this project. Undoubtedly, you will also spend a good bit of time outside of class. Since you cannot take your “bomb” prototypes home, all activities that require it will occur in class (or at scheduled times outside of class – but in specified classrooms).
- You will be able to use the Makerspace to work on your project, including design, fabrication, assembly, etc.
- All source code must be written in Python unless approval otherwise is obtained from your instructor.
- You must use Github as the main repository for your project's source code, write-ups, and other files. It must be regularly updated as you progress through the project. Your instructor will periodically check it during the academic term.
- All of what you have come to expect regarding source code is important (e.g., comment your source code appropriately, include an informative header at the top, use good coding style, use meaningful variable and constant names, the overall structure of your programs should be logical, use the object-oriented paradigm when appropriate, etc).
- You will have the opportunity to evaluate your team members (anonymously).

Note that a portion of your final project will be graded **competitively**! This means that what you submit will be compared to that of other submissions in the class. Yours may be better or worse than others, and a portion of your score will be assigned accordingly. It is absolutely true that every single final project could merit an “A”, for example; however, one will be ranked at the top, another at the bottom, and others somewhere in between.

Deliverables

All deliverables are due on **Fri 5 May at 9pm**. This includes the following:

- A *Defuse the Bomb* manual (in PDF format). See your instructor's version for reference.
- A final write-up (in PDF format).
- An updated (**and organized**) Github repository that includes all of your source code (even any parts that were provided by your instructor). Feel free to include your manual and write-up sources, presentation materials, etc, if you wish.
- All presentation materials (e.g., slides, notes, etc).

Schedule

Since this project is literally being designed during the term (i.e., you're a part of an important ongoing pilot), the schedule is a bit nebulous. That being said, there are some hard deadlines:

- You will demonstrate a working prototype at the **CS event** on **Thu 20 Apr from 4-6pm**. Your prototypes should be working at this point – both hardware and software – perhaps minus a few tweaks that don't affect core functionality. Your manual should also effectively be complete (since it will be used by those trying out your prototypes at the event).
- You will formally present your project in class during our normal final exam time (which is **Fri 5 May from 11am-1pm**). Details regarding the presentation are provided below.

Presentation

During the final exam period, you will briefly present your version of this project. Your presentation should address the following:

- Keep your presentation to no more than **10 minutes** in total. During your presentation, I will raise a yellow card when your presentation has reached 9 minutes (i.e., you have 1 minute left). I will raise a red card when your presentation has reached 10 minutes. I will interrupt your presentation and ask you to go back to your seats when/if your presentation has reached 11 minutes. **Every team member needs to contribute during the presentation.** Please don't focus on slide development. Lastly, your presentation should last **at least 7 minutes** (if you adequately address everything below).
- Discuss anything unique that your team implemented. This should include any specific goals and objectives that may differ from the other teams. Talk a bit about how you met your goals, how the team members interacted, etc. Basically, give us a window into your team's dynamics throughout the project. This part should take approximately 2 minutes.

- Discuss any ideas that your team has regarding future development plans. If you had another term to work on this, what would you do? How would you improve it? This part should take approximately 1 minute.
- Discuss any ideas that your team has regarding lessons learned. How has this project helped you? How do you think it will help you in other courses? This part should take approximately 1 minute.
- If you had the freedom to redesign this project as you see fit, what would you do? Basically, how would you improve this project for future students? This part should take approximately 1 minute.
- A demonstration of your project. Obviously, the prototypes will work similarly across all teams. So focus on how yours is different. Take us through those differences during your demonstration. This part should take approximately 5 minutes.
- Feel free to discuss anything else that you think is relevant!