**Executive Summary: Powder Scale and Dispenser**

ECEN 399

Dale Andreoli

4/4/2022

# Technical Contributions

The aspects of the project that I worked on the most was the functionality and rough layout of the user interface. We were given a desired user interface by Creedmoor’s graphic designer. Once we were given what they wanted, I was able to start creating the various modules and pages used by the user interface. I created a number pad module that we were able to use in the final interface. I also created a keyboard module that was changed and improved in the final interface. I created the home, load, save view and settings pages. I connected them by having buttons on the home page lower all pages except for the one that had its button pressed. I created a pseudo backend that all backend functions eventually were placed in. Some backend features were fully implemented in this pseudo backend. I assisted Austin with connecting actual backend events with the user interface.

# Team Contributions

I was an effective team member. I always made time to make progress on my assigned parts of the project. I communicated effectively with Jonathan so that we could coordinate our efforts on the user interface. I reported to Austin with updates on how the user interface was progressing. We worked together to ensure that the user interface would be ready for whatever backend functions needed to be tested.

# Final Report Contributions

I wrote the documentation for the software part of the final report. This involved documenting the design decisions of the interface and the necessary library used to create it. I also made significant efforts to comment the code for those who come after us. I also created slides for the oral presentation. This involved gathering screenshots of each page to demonstrate the user interface. In the oral presentation, I spoke during these slides and gave a walkthrough of the user interface: what is happening on each page and what each button does.

# Suggestions for Future Work on the Project

Some planned features of the user interface were not fully implemented. Due to hardware issues, we were not able to fully implement some backend features. Since the backend is designed for the BeagleBone, it cannot be run and tested on a typical computer. This prevented us from implementing certain backend functionalities as the BeagleBone was often out of order throughout the semester. Some of the settings need to be fully implemented on the backend, as well as some of the custom profile features. The forward and back buttons next to the home and power buttons also require additional work to implement.

# Time Table

|  |  |  |
| --- | --- | --- |
| **Week** | **Hours** | **Major Task** |
| Week 1 | 12 | Initial research and reading given documentation |
| Week 2 | 4 | Database research, UI mockup, tkinter research |
| Week 3 | 11 | UI number pad, UI design and mockup |
| Week 4 | 12 | Initial UI module implementation |
| Week 5 | 14 | Keyboard research and implementation |
| Week 6 | 14 | Load page, home page, remake homepage |
| Week 7 | 13 | Load page, save page, settings page |
| Week 8 | 13 | Save page, settings and sub settings pages |
| Week 9 | 13 | Connect UI to backend, View page |
| Week 10 | 13 | Setting sub pages and save page to backend, pseudo backend |
| Week 11 | 13 | Settings sub pages to backend, merge codebases |
| Week 12 | 11 | Finalize layout, comments, test backend |
| Week 13 | 12 | Comments, documentation, report, presentation |
| **Total** | **155** |  |