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ECE 49022

Team 17: Blind Mice

Weeks 1 – 4 (January 13 – January 31)

Week 1: 1/13 – 1/17

1/16: Team 5 met for the first time, but I was absent

1/17: Worked on design document 1 user story, making sure requirements are supported by user story, and proofreading.

Week 2: 1/20 – 1/24

1/20: Assisted in brainstorming ideas for the high-level block diagram

1/21: Took down meeting notes regarding the need for an interview with a potential user for our product who reads braille, adjusting product specifics, deciding between 6 or 8-key braille, solenoid actuator experimentation, and deciding on each team member’s roles for subsystems and presentation.

1/22: Worked on the Team Members Introduction and Elevator Pitch slides

1/23: Presentations

1/24: Figured out that we need a more powerful microcontroller that has enough on-board memory/RAM to store the text to speech conversion and saving all the translated braille. Also concluded that the project should include an SD card that can store converted braille characters permanently while the Flash memory of the microcontroller would refresh its information.

Week 3: 1/27 – 1/31

1/27: Interviewed a real-life braille reader named Dave and took down meeting notes for future reference regarding the modifications we should make to our project to better suit the needs of the targeted user.

1/28: Made revisions to Design Document 1.1 such as editing the user story to reflect new knowledge of user preferences from interview with Dave, editing the requirements, adding/changing button functionalities, and helped to revise the system block diagram. Also created a task list document that has a list of subsystems that each team member is assigned to do. Also checked out an STM32F413ZH Microcontroller from the ECE Shop

1/29: Worked on Design Document 2’s user story, requirements, executive description, and worked on my own subsystem consisting of the following design tasks:

* Memory
* USB port
* File Storage
* Mode Button - Push Button Active High
* Play Button - Push Button Active High
* Where am I Button - SPST Push Button Active High
* File/Chapter Select (Comprised of + and - for incrementing and decrementing chapters)
* Position/File Control
* Text to speech output

1/30: Did the Team Scavenger Hunt to learn about what is already supplied by the ECE Shop. Decided to not include NEMETH braille translation in the project. Also did individual research on designing/coding buttons to work with microcontroller as well as the equipment, peripherals, and programming software code needed to interface USB and Micro SD card with the STM32F413 microcontroller.

1/31: Finished up my subsystem information, generated my subsystem block diagram, and submitted Design document 2 on blackboard

Next week (week 4), I plan to work on making an SPST-NO push button borrowed from the ECE Shop work by supplying 3.3 V to the push button in Active High configuration (with resistor attached directly to ground, and creating C-language test code that can set up I/O pins to be inputs and creating variables that read from the I/O pins to turn on the built-in LED lights of the microcontroller. The goal of this test is to make sure that I can set up buttons as inputs that can trigger an event to happen when pressed once.