Matthew Baker

Engineering Journal

Senior Design Capstone II – Spring 2024 Semester

**Date: 01/16/24**

**Type of Meeting: Class**

**Present? Yes**

**Discussion:** Initial get together and update of TA. Researched proper connections to run arduino to program EMC2101 fan controllers.

**Date: 01/18/24**

**Type of Meeting: Class**

**Present? Yes**

**Discussion:** Discussed division of labor further, began work on wiring and pinouts of EMC2101 fan controllers.

**Date: 01/23/24**

**Type of Meeting: Class**

**Present? Yes**

**Discussion:** Received soldered pin version and completed programming of EMC2101 controllers. Received prototype of 3D printed external ventilation covers, gave relevant feedback to Kisellus for revisions to aid in connection to fan.

**Date: 01/25/24**

**Type of Meeting: Class**

**Present? No**

**Discussion:** Absent due to medical appointment. Researched best methods for creating driver boards to house EMC2101 controllers.

**Date: 01/30/24**

**Type of Meeting: Class**

**Present? Yes**

**Discussion:** Worked on basic driver board layout for controller boards with leads for connections to fan, Rpi, etc. Added diodes and screws to part list.

**Date: 01/31/24**

**Type of Meeting: N/A**

**Discussion:** Completed materials testing of vent covers vis-a-vis screw thread tolerances.

**Date: 02/01/24**

**Type of Meeting: Class**

**Present? No, due to disability**

**Discussion:** Pushed v1 of SDD/SRS to GitHub Repo.

**Date: 02/02/24**

**Type of Meeting: N/A**

Discussion: Added updates to Sprint 1 Demo slides

**Date: 02/06/24**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Found fan covers online to alleviate need for 3d printing.

**Date: 02/08/24**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** **Sprint 1** **presentation**

**Date: 02/11/24-2/17/24**

**Quarantined due to COVID**

**Date: 02/22/24**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Started process of prepping purchased fan covers for case, waiting on tools to make adjustments for left side cover and widening screw holes for installation. Found mesh material for covering inside of fans to prevent wiring damage

**Date: 02/27/24**

**Type of Meeting: Class**

**Discussion:** Made modifications to left-side fan cover to fit around latch, attached cover baseplates to both sides and made initial mounting for right-side internal fan. Awaiting screen mesh for internal side of fans to prevent wiring damage before finishing installations.

**Date: 02/29/24**

**Type of Meeting: Class**

**Discussion:** Did initial work on Sprint 2 Demo, not in class due to disability.

**Date: 03/06/24**

**Type of Meeting: Class**

**Discussion:** Finished my portion of sprint 2 demo.

**Date: 03/08/24**

**Type of Meeting: Class**

**Discussion:** Sprint 2 Presentation.

**Date: 03/19/24**

**Type of Meeting: Class**

**Discussion:** Cut mesh for internal fan coverings.

**Date: 03/21/24**

**Type of Meeting: Class**

**Discussion:** Unable to attend class due to disability appointment issues, implemented TA feedback into latest version of SRS, SDD, and Test Plan.

**Date 3/26/24**

**Type of Meeting: Class**

**Discussion:** Applied marine sealant to all external penetrations with exception of those sealed by putty, attempted to seal poorly installed fan cover, will fill with putty once dry.

**Date 4/4/24**

**Discussion:** Finalized updates to test plan, ensuring no missing inputs for test cases and combining redundant test cases. Final test for cooling system is marked Fail due to lack of fourth lead from obtained fans. Michael is working on a manual cut-off solution.