EE/CprE/SE 491 WEEKLY REPORT 2

Jan 28 – Feb 10

Group number: 05

Project title: Race of Doom

Client &/Advisor: Dr. Bigelow

Team Members/Role:
Andy Nguyen - Electrical Hardware Design and integration
Aaron Gienger - Embedded Hardware Programming
Ben Dubin - Software Development Programming
Blake Carlson – Embedded Hardware Programming
Carson Tow - Hardware Security Programming and Team Representative

o **Weekly Summary**

During the last two weeks our team has worked on implementing the hardware aspects of the design and testing their implementation and addition the RC base. We have thus far tested the range, angle, and precision/accuracy of both our ultrasonic and infrared sensors. We also worked on adding measures to secure and extend the mounting points for our components using foam padding. Additionally, we've begun integration with our and our servo (steering) and speed controller. Allowing us to test speed and steering aspect to use for our automation.

o **Past week accomplishments**

Andy Nguyen – Worked on hardware/electrical implementations. Spear heading the circuit design, breadboarding, and calculating power differences to determine which resistors will be necessary for our circuit design. Andy also went with part of the team to multiple stores to research and acquire foam options. Taking a lead on considerations for foam types and sellers. Andy also worked with ETG to get new/additional components.

Aaron Gienger – Worked on researching test code for our hardware design. Aaron continually worked on finding and making adjustments to test code for the multiple iterations of our hardware design. Aaron also worked on the debugging of test code during the servo and speed controller during testing. Aaron also went with part of the team to multiple stores to research and acquire foam options.

Ben Dubin – Worked on developing test code for our hardware design. Before developing any code for the semester, Ben set up the team's GitHub repository and lead the team in setting up the GitHub via GitHub desktop. Ben took the lead on making changes and adjustments using the Arduino libraries during our testing process. Ben also went with part of the team to multiple stores to research and acquire foam options.

Blake Carlson – Worked on testing hardware for the design. Primarily Blake spearheaded sensor testing. Blake's testing consisted of research/finding test program and developing the test programs for Ultrasonic and Infrared sensors. He flashed his program to Arduino and used it to test range and accuracy of the sensors. Blakes testing showed that we needed to change our choice in infrared sensor, so we ordered new sensors. Blake also went with part of the team to multiple stores to research and acquire foam options.

Carson Tow – Worked on design integration between hardware and software during initial testing. Additionally, Carson contributed to working on the design for the new front bumper/mounting points. Carson also is continually working with the other teams for the project (who are working on the other Car and Track) to discuss specification, locations, and discuss concerns regarding the integration of the three team for the end of the project. Carson also worked on drafting the bi-weekly reports and other documentations.

- **Plans for the upcoming week**

  - **Andy Nguyen** – *Continue to work and refine the electrical design. Including combining servo and motor control.*

  - **Aaron Gienger** – *Aaron will continue to help contribute to work on test code for the servo and motor control.*

  - **Ben Dubin** – *Ben will continue to develop test code and begin a more substantial code base.*

  - **Blake Carlson** – *Blake will continue working with the hardware and integrating sensors into the design, as well as continuing sensor development.*

  - **Carson Tow** – *Carson will continue to contribute to integrating design between software and hardware. Additionally, Carson will continue to be the team representative and coordinate with the other teams.*