

CPRE 492 -May20-04

CPRE 288 Embedded Systems Platform Movement and Code Optimization

Bi-Weekly Report 1

January 13 ~ January 27, 2020

Client: ISU 288 Dr. Jones and Rover. Matthew

#### Team Members:

Jacob Aspinall – Team communication leader

Geonhee Cho – Report manager

Issac Klein – Note taker

Jisoo Han – Team Git master

Sam Rai – Team web master

Nathan Nordling – Team data manager

#### Weekly Summary

We could not meet the advisor for last 2 weeks. We continue to work on the project from last semester. Unfortunately, we could not meet the team members after the first lecture of CPRE 492, however, everyone works what we planned to work from the last CPRE 491 plans.

#### Past Week Accomplishments

Jacob Aspinall

Over Winter break:

- LCD simulation
- USB connection from simulation micro to PC, useful for debugging
- Started working on a GUI to display state of simulation
- LCD and UART(only receive) can be displayed

First 2 weeks of Spring semester:

- Verified functionality of Open Interface API with datasheet code lines up with datasheet
- Fixed roomba LED lights not turning on consistently
- Added integer overflow handling for wheel encoder values
- Proof of concept for preventing roombas from not charging when turned on
- Put roomba into passive mode when not driving
- Currently working on a fix for when wheels are turning at different speeds

Geonhee Cho

- To fine the git CI/CD work to figure out about the show the test result (fail or passed)
- Set up the new git-runner at git repository.
- Help Jisoo to make the git repository
- Write the bi-weekly report 1

Jisoo Han

- Review our design document
- Establish the repository and submodule, then test if it can copy repository correctly
- Since the repository is private, found an issue when it submodules. So research about this problem.

- Make two separated repositories.

#### Sam Rai

- Soldering is done for the DAC device, which will be used when we do the automated test.
- Doing some research on DAC device to use for the automated test.

#### Issac Kleinsd

- Did tests for the wait mills function like I did with the wait micros.
- Wrote manual test cases for the timer.c file that track timing using GPIO pins and displays the accuracy using oscilloscope
- The other tests consist of print out statements using the system clock

#### Nathan Nordling

- Wrote manual uart tests and began work on potentially automating them

### Individual contributions

Team Member	Contribution	Weekly H	Total H
Jacob Aspinall	USB, LCD, Simulation GUI, Open Interface	24	24
Geonhee Cho	Set up the new git-runner and tried to set up the continuous integration work (to show the test result whether fail or pass the test result) at yml file at the git repository.	12	12
Jisoo Han	Git repo work, tried to set up the submodules	12	12
Sam Rai	Doing some research on DAC device to use for the automated test	12	12
Issac Klein	Continue to make test cases in a similar manner for all the timer methods	12	12
Nathan Nordling	UART unit testing written, began potential automation of them	12	12

#### Plans for next 2 weeks:

Jacob Aspinall

- Finish fixing wheels turning at different speeds
- Implement fix for roombas losing power when students forget to turn them off
- Create simulation of Roomba

Geonhee Cho

- Add yml file to make it work to show the test fail or pass result (if it is failing, it will show the result as fail).
- Finish git repository work.

Jisoo Han

- Move to the next testing topic in git lab issue after discussing with team.

Sam Rai

- ADC testing will be continuing until the IR is functioning well with automated test.

Issac Klein

- Testing the accuracy of the other time related timer..c functions using a similar approach.

Nathan Nordling

- Spreadsheets for data, write more UART tests, continue to look into potential automation for UART tests

### [Summer of weekly adviser meeting](#)

Last two weeks, we could not meet advisor since he is busy with his work. So, we worked individually that we planned from the last CPRE 491 presentation.