EE/CprE/SE 491 - sdmay18-18

Fleet Monitoring System

Week 5-6 Report

2/8 - 2/21

Client/Faculty Advisor: Lotfi Ben-Othmane

Team Members:

Venecia Alvarez - Point of Contact
Kendall Berner - Project Manager
Matthew Fuhrmann - Report Manager
William Fuhrmann - Test Engineer
Anthony Guss - Technical Lead
Tyler Hartsock - Web Manager

Past Two Week Accomplishments

- Path Plotting and Dynamic Statististics Display - Venecia
  - Developed a web page and functionality for hiding and showing different categories of statistics on the main fleet page.
  - Worked on developing path plotting between certain times for a vehicle for the front-end.
- Edit Fleet and Statistic Selection Page - Kendall
  - Worked on the edit fleet page and a new page that allows managers to select which statistics they want to gather from their vehicles.
- Creating New APIs for Statistics Selection and PID Processing- Anthony
  - Worked on implementing the API for vehicle PID selection and processing. The server will now receive and process raw CAN data from the Pi and store the results in a database. The PIDs that will be collected will be chosen by a front-end page.
- Statistics Generation Prototyping for Idle Time - Will
  - Working to develop a prototype of using R to gather data from the MongoDB database to display the percentage of time a vehicle spends idle.

- ○ Looked into how R graphs may be done on the client side to make graphs natively for the browser.
- Developed Front End Functionality and Researched New Features- Tyler
  - ○ Worked on creating new front end functionality and researching new potential features.
- Raspberry Pi Application Implementation- Matt
  - ○ Tried to set up Raspberry Pi to allow SSH from remote locations, but this seems to be more correlated to the router settings than the Pi settings. Reverted the changes, but will probably add back a static hostname to make it easier to debug.
  - ○ Researched and recommended the use of a Hologram Nova to give mobile connectivity to the Raspberry Pi.
  - ○ Continued working on refactoring, waiting for APIs to be completed before finishing up.
  - ○ Moved code to new GitHub repository created by Lotfi, which required some extra setup because it started with an initial commit.

Individual Contributions

Team Member	Contribution	Hours for Current Report	Total Hours
Venecia Alvarez	Path Plotting and Dynamic Statististics Display	6	73.5
Kendall Berner	Edit Fleet and Statistic Selection Page	8	71
Matthew Fuhrmann	Raspberry Pi Application Implementation	5	92
William Fuhrmann	Statistics Generation Prototyping for Idle Time	7	70.75
Anthony Guss	Creating New APIs for Statistics Selection and PID Processing	8	77.25

Tyler Hartsock	Developed Front End Functionality and Researched New Features	4	49.5

Plans for Next Two Weeks

- Raspberry Pi - Matt
  - Test current PiCAN2 connection over OBD-II with vehicle using a truck.
  - Finish changing Raspberry Pi (working with server team) for new server API that receives raw OBD-II data and uses server PID requests.
- Server - Will, AJ, Matt
  - Implement server API to ingest OBD-II output data instead of already processed data.
  - Work to develop API for choosing which statistics the fleet managers want and connecting that to PID requests.
  - Begin creating framework for statistics calculation extensions to the server.
  - Finish R statistics prototype to do calculate the idle time percentage that outputs back to the database
- Front-end - Tyler, Kendall, Venecia
  - Work on integrating Google Roads API into front-end for more accurate descriptions of vehicle location.
  - Work with server team for developing API for statistics selection.
  - Debug issues with login/register pages.
  - Implement the Edit Fleet web page.
  - Finish the path plotting.
  - Change statistics viewing model to allow more charts to be created.