Sprint 2 Plan

Product Name: Arduino Micro-Controller for Electric Vehicles
Team Name: Dream Team
Sprint Completion Date: 11/14/14 (tentative)
Revision Number: 0.1
Revision Date: Tuesday, November 3, 2014

Sprint 2 Goal: To create a design document outlining the code to help us better comprehend its inner workings of the code we were given as well as one assisting future developers to understand the code we have written.

User Stories

Story 1: *As a future developer I want to analyze a design document that covers what the existing microcontroller code does.* [Listed below are various functions and code chunks that exist in the current code, split into individual tasks for documenting them.]

- Task 1.1*:* PID_Controller()
- Task 1.2: ComputePWMOutputs()
- Task 1.3: SampleVoltage()
- Task 1.4: Init_Device()
- Task 1.5: SampleSensors()
- Task 1.6: SpeedSteeringControlMap()
- Task 1.7: Adjust for lean mode
- Task 1.8: Steer Control
- Task 1.9: Lean Control
- Task 1.10: Brake Control
- Task 1.11: Hydraulic System Control loop
- Task 1.12: Traction Motor Command Processing
- Task 1.13: Set throttle
- Task 1.14: Timer3_ISR()
- Task 1.15: UART0_ISR()
- Task 1.16: PCA_ISR()

Story 2: *As a developer I want to read a pin diagram that describes the inputs and outputs of the system so that I can connect our controller to the car.*

- Task 2.1: Determine all inputs and outputs and their type (PWM/Analog/Digital). May require more communication with sponsor. List these in the design document under I/O Configuration. Include diagram if possible.
- Task 2.2: If there is a PWM is it an analog signal that is being converted? Ask sponsor if optimization is possible by accepting an analog signal.
- Task 2.3: Develop a pin diagram in the I/O Configuration of the design doc.

Story 3: *As a developer I want a simulator that covers input and output.*

- Task 3.1: Build a simulator based on the I/O section developed in story two using 123D.

Story 4: *As a developer I would like to read a design document detailing the design of our new Arduino code.*

- Task 4.1: Section on how to accept PWM input under Arduino Concepts (How to Read PWM Input)
- Task 4.2: Build design based on analysis of existing code (should be broken into tasks)

Team Roles

Alejandro Aguilar - Product Owner
Nikolai Kallhovde - Scrum Master
Aravind Sambamoorthy - Scrum Master
Leland Miller - Team member/developer
Navjot Singh - Team member/developer
Hemant Ramachandran - Team member/developer
Wallace Luk - Team member/developer

Initial Task Assignment

Alejandro - Task 3.1, assist w/ 4.1, 4.2
Nikolai - Tasks 1.7, 1.8, 1.9, 1.10 (all steer, lean, & brake control loops), assist w/ 2.3, 4.1, 4.2
Aravind - Task 1.4, assist w/ 2.1, 2.2
Leland - Tasks 4.1, 1.1, 1.2, 1.3, 1.14, 1.15, 1.16
Navjot - Tasks 1.12 assist w/ 1.6
Hemant - Tasks 1.11, 1.13, assist with 4.2
Wallace - Tasks 1.5, 1.6

Scrum Times

Wed 3:30pm
Thu 10:00am
Fri 10:00am