

Sprint 3 Report

Product Name: Arduino Micro-Controller for EVs

Team Name: Dream Team

Date: 12/10/14

Actions to stop doing:

If we were to continue working on this project, one thing we should stop doing is trying to retrofit the old codebase, as became clear towards the end of this sprint. The differences in hardware forced us to completely rethink our strategy for implementing certain features, such as reading the PWM inputs from the sensors. We wasted a huge amount of time trying to do a direct conversion with changes to adapt it to Arduino when we should have been just using the previous code as a guide with which to write a program from scratch.

Actions to start doing:

One thing we just started doing towards the end of this sprint that would also be helpful for a hypothetical next sprint was working extensively with the car itself to test our program. The main issue that held us back from doing so in the past was primarily scheduling conflicts. The Dagne was only available to us on weekends at an off-campus location, preventing many of us from making these meetings. In addition, the fact that the hardware was very new to us made it so that we spent a lot of our time just hooking everything up, and some things weren't even ready to hook up at all. If we had one more sprint during which each of us had fewer prior obligations, starting to do serious on-site testing would be a very beneficial option.

We should also get more familiar with the hardware itself. One of the major issues we had was that none of us had much hardware experience. As a result, it was difficult for us to familiarize ourselves with the hardware of the Arduino and of the car, leading to a number of missteps when implementing certain components in the program itself. If we took time to really comprehend how different elements of the Arduino and the car worked, we would probably manage to write more effective code quicker and with less trial and error.

Actions to keep doing:

The decision to reschedule the tri-weekly Scrum meetings to Monday, Wednesday, and Friday instead of being bunched up on Wednesday, Thursday, and Friday was an effective one. Its major benefit was encouraging a more evenly-distributed workload. In the old system, work could seldom be completed in one night due to conflicts with other classes, so often we weren't able to promise anything for these Scrum meetings or report any work done in the meetings following them. The long period in which work was more likely to be completed, in the stretch between Friday and Wednesday, was often so long that we'd forget some of the work we had completed early on. Additionally, this encouraged doing very little over the weekend, and instead waiting until Monday or Tuesday to finish the necessary work. This change in schedule alone, though not convenient for all of us, was incredibly effective in increasing the amount of work completed in this sprint compared to the previous two.

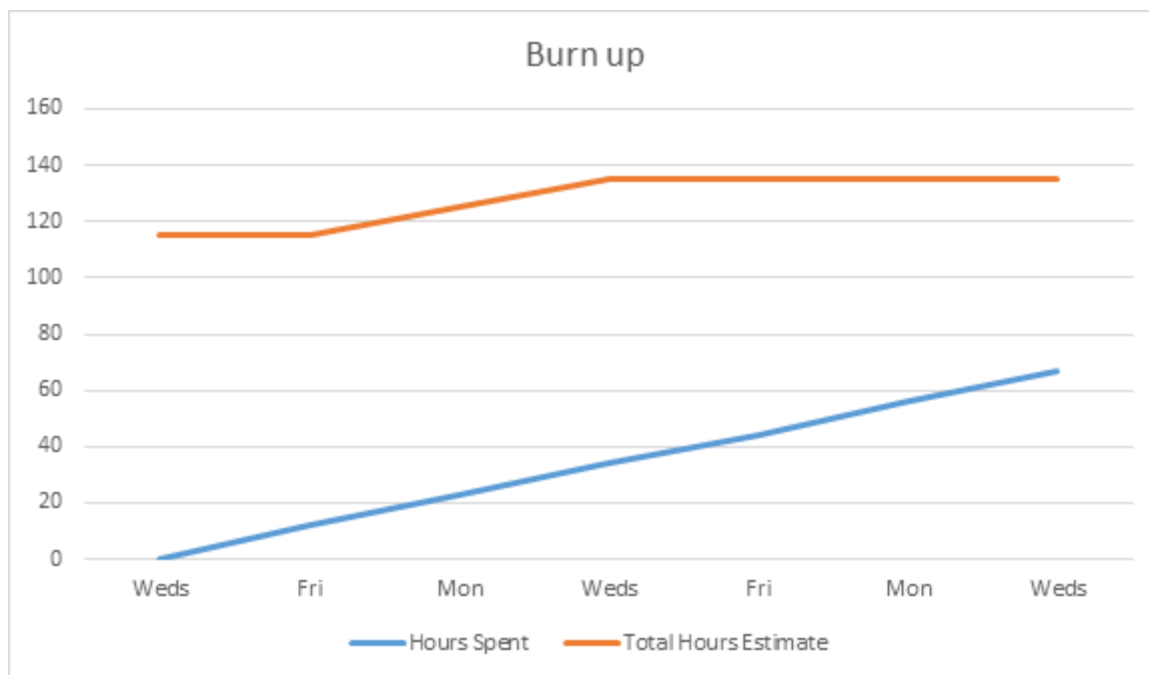
Another change that proved effective was making the Scrum meetings less strict. The format of reciting work completed, work to be done, and obstacles was helpful, but it wasn't very helpful in figuring out the logistics of which group member should do which portion, which order this work

should be done in, and how it should be done. Adding the discussion of these topics was very successful in coordinating our group successfully.

Work completed/not completed:

1. Read Joystick, Steer, and Lean sensors on the Dagne.
2. Documentation on how the micro-controller works.
3. Have a fully functional steer sub-system.
4. We were not able to implement the other sub-systems because of the reasons stated above.

Work completion rate/Burn Up Chart:



Total hours worked: 67

Average daily hours: ~6

Total ideal hours: 135

Average daily ideal hours: 12.3