Week 1 Statement on Project Standing

This week I did the project planning, created my task diagram, wrote my unit test plan to ensure that my project will function as intended. Also set up github repo and did overall project designing. I decided on using the slider to adjust fuel burn rate and buttons to adjust the angle of attack. Currently planning on having five total tasks.

I have completed 6% of the currently scoped work, estimated work (2/34hr) in 6% the initially estimated time (4/34hr). Still early and the fact that more time was spent planning than expected is probably a good thing. The more time spent planning the better.

Scoped Work

Work Item	Description	Estimated Time	Status
Project Planning	Create an initial task diagram and documents for week1. Have an idea of project design.	2 hrs	Complete
Data Structure Setup	Setup initial data structures for rocket, message queue, angle setpoint, and throttle setpoint.	2 hrs	Not Yet Complete
Writing Unit Tests	Write initial unit tests. Should fail until further development. Challenge in porting in data needed between cutpoints.	3 hrs	Not Yet Complete
ITC and Shared Resource Setup	Establish the structures needed between tasks, such as semaphores, timers, mutexes, and the tasks themselves.	1 hr	Not Yet Complete
Angle Task	Develop code for angle task to pend on semaphore from button ISR and write to angle setpoint.	0.5 hrs	Not Yet Complete
Throttle Task	Develop code for throttle task to pend on semaphore from timer and write to throttle setpoint.	0.5 hrs	Not Yet Complete

LED/PWM Task	Develop code to drive LED's based on PWM. PWM code created in a separate work item.	0.5 hrs	Not Yet Complete
Rocket Design	Practice with the micrium graphics library to design how the rocket will look and what are the meaningful points.	1 hr	Not Yet Complete
Display Task	Develop code for display task to take data from rocket data structure and display the rocket. Challenge is to display the rotation of the rocket graphic, here the math is done to move the vertices of the rocket.	5 hrs	Not Yet Complete
Physics Task	Develop code for physics task. This is the bulk of the project. Includes programming kinematic equations to computing the acceleration, thrust, fuel, position, and rotation of logic. Will also be responsible for knowing if a win or loss has occurred.	8 hrs	Not Yet Complete
PWM config	Create the routines necessary to program configurable PWMs using software timers. Needed by LED task.	2.5 hrs	Not Yet Complete
Configurability Implementation	Program a home screen on the game that takes in input via the buttons. Also takes config either through config file or changing settings in project code.	3 hrs	Not Yet Complete
Debug	Built in time to debug. After all previous work items complete it is expected that the project is not fully functional without substantial debug work.	5 hrs	Not Yet Complete

Completed this Week

Project planning - It took more time to plan the project and get these documents set up than expected but it feels good to have it laid out. I have a decision for how the angle change will work and how the configurability will be accomplished but I would call them “soft decisions” and want to spend more time on both of these items after I have some code written.