WEEKLY WRITE UP RTOS

Week 1:Diagram: See Diagram.

Test Plan and Results:

Week 1: Unit test Description

1. Button ISR-Test the ISR functionality

Status: Not Run

1. Slider-Test the slider functionality

Status: Not Run

1. Button FIFO-Test the functionality of the button FIFO

Status: Not Run

1. Gain Task-Test the functionality of the gain task specifically the pwm generation

Status: Not Run

1. SysTick ISR-Test the functionality of the SysTick ISR

Status: Not Run

1. Movement Task-Test the functionality of the movement task specifically that the base

of the pendulum moving and xmin and xmax.

Status: Not Run

1. Physics Task-Test the functionality of the physics task, specifically the physics

calculations and the updating of the physics data structure.

Status: Not Run

1. LCD Display Task-Test the functionality of the LCD display task. Specifically that it

displays the correct output clears and updates ion a reasonable amount of time

Status: Not Run

1. LED Output Task-Test the functionality of the leds, specifically that they turn on and

and off when they are supposed to.

Status: Not Run

1. Final Test-Test each task run and output what is expected based on the inputs, as well as working together with each other, and test responsiveness.

Status: Not Run

Week 2: Unit test Description

1. Fifo:

3 tests for push and pop variations

Finished and passed all

1. Gain:

3 tests for incrementing/ decrementing gain

Finished and passed all

1. Movement:

5 tests for each slider position and not touching the slider

Finished and passed all

1. Physics:

7 tests for checking physics computations are correct

Finished the tests but do not have physics functions written so has not passed them.

Total Pass = 11

Total Fail = 7

Statement of Where Project Stands:

Week 1:

This week I completed the project diagram, as well as the initial planning for unit tests and estimates on how long each part will take along with risk analysis.

Week 2:

This week I wrote all the unit tests and the fifo, movement and gain functions. I also began to think about physics implementation. I also set up all the tasks, mutexes, semaphores, and flags.

Summary effort and estimate numbers:

Total estimated hours: 40hrs

Week 1:

I estimate I have completed 5% of my scope, estimated work (3hrs/40hrs) which is 7.5% of the initial estimated time. My best guess of my say/do ratio is 5/7.5 = 66.7%, so to unbias my estimates after this class I may want to multiply my estimates by 1.5 (100/66.7).

Given the scope changes I’ve made my original scope is 100% of my latest scope (40 hrs vs. 40 hrs)

Week 2:

I estimate I have completed 25% of my scope, estimated work (11hrs/40hrs) which is 27.5% of the initial estimated time. My best guess of my say/do ratio is 25/27.5 = 90.9%, so to unbias my estimates after this class I may want to multiply my estimates by 1.1(100/90.9).

Given the scope changes I’ve made my original scope is 88.88% of my latest scope (40 hrs vs. 45 hrs)

List of in-scope work Items:

Week1:

* Diagram

Completed

I’m glad my diagram is detailed because it will make the rest of the project easier and give me a good idea of the project overall as a whole.

* Btn ISR/Unit Test
* Btn FIFO/Unit Test
* SysTick ISR/Unit Test
* Touch Slider/Unit Test
* Movement Task/Unit Test
* Gain Task/Unit Test
* Physics Task/Unit Test
* LCD Task/Unit Test
* LED Task/Unit Test

List of in-scope work Items:

Week2:

* Diagram

Completed

I’m glad my diagram is detailed because it will make the rest of the project easier and give me a good idea of the project overall as a whole.

* Btn ISR
* Btn FIFO/Unit Test

Completed

I’m glad the fifo works well and passed all the unit tests

* SysTick ISR

Completed

I am glad that we got the systick interrupt working and it also drives our PWM

* Movement Unit Test

Completed

Checked the movement function in the movement task is working correctly and it was

* Movement Task

Completed

Completed the movement task based on lab 7

* Gain Unit Test

Completed

Checked to see that the gain function inside of the gain task is working correctly and it was

* Gain Task

Completed

Completed the gain task based on lab 7

* Physics Unit Test

Completed

Completed the Unit tests, but will need modifications as the physics function and tasks are not complete yet.

* Physics Task
* LCD Task
* LED Task

Risk Register:

Week 1:

See XCEL spreadsheet

Week 2:

See XCEL spreadsheet