Justin Robert

# Project Final Week

Unit Testing Codes [Finished]:

- Platform Direction Tests:
- Test if platform doesn't move when force is applied and velocity is 0
- Test is platform maintains nonzero velocity when no force is applied
- Test if platform increases velocity when force is applied in the same direction of the velocity
- Test if platform decreases velocity when force is applied in the opposite direction of the velocity
- HM Tests:
- Test if HM screen is the same as the Platform Direction given
- Test LEDs turnon when HM crashes
- Test both functions of each LEDs. Left LED current force magnitude, Right LED showing MAX_FORCE
- Error HM Tests:
- Test to make sure CapSense works with new setup
- Test to make sure PushButtons work with new setup
- Test physics

All are now passing (Changed a few equations because it wasn't working when implementing)

Functional Testing:

- When resetting see if the LED is blinking very slow (Pass)
- Finger controls the platform acceleration with the touch slider, also releasing does not fully stop platform [LEFT CONTROL] (Pass)
- Finger controls the platform acceleration with the touch slider, also releasing does not fully stop platform [RIGHT CONTROL] (Pass)
- Make sure that the ball bounces off the platform correctly, including repeated bounces and how they change the ball (Pass)
- Make sure Button 0 makes the peak of the parabola higher (Pass)
- Slider matches the LED's pwm while it blinks and will collide with the ball (Pass)
- Make sure when button 1 is pressed the ball bounces outside of the canyon (Pass)
- Make sure when pressing the opposite direction of slider, the platform decelerates before accelerating otherway (Pass)
- Make sure button1 resets everything and the ball goes back to the top of the screen (Pass)
- Make sure you cannot press button 1 a lot of times. AKA make it do nothing after a lot of presses (Pass)
- Game over screen activates when appropriate (Pass)
- Make a cool game :) Pass Pass Pass!

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Project Stands:

This week finishing the project was a mission and a half but I got it done. The functional tests came together to become an actual game. Most of the time was reorganizing and redistributing the capsense and eld code to their tasks. Everything has been initialized and most functions have been integrated into the project code itself. A lot of functions and implementations were easier to identify once I started first. I did not add a risk to the registers, a lot of work but nothing came up that was a risk.

Summary - I have completed 100% of my currently-scoped, estimated work time (64/ actually spent /60 hr total estimate) in 107% of the initially-estimated time. (64 estimated for the items I have completed, of 60 hr total estimate). For the work that has been completed, I took about 1.067x as much time as I estimated. I think I did a pretty good job at estimating my estimated time with my actual time, a very fun but challenging project. Once it was getting started I tried to make it as fun as possible, but there was a lot that I missed.

Very Productive week overall.

List of in-scope work items:

Completed works:
Task Diagram
LCD drawings
Laser Implementation
Task Integration
LED Control
Slider Control with LED PWM
Task Creations
Using Segger with Tasks
Platform Motion
Platform Bounce
Collision

- This Week
  Finished all

- Not Completed
  Nothing

Risk Register:
(Added 0 Risks)

| Item | P | I | Risk (P*I) | Recognized | Mitigated/ Resolved | ROAM | How |
|---|---|---|---|---|---|---|---|
| Late office hours so I could not get to them | | | 4 | 8-Mar-22 | Resolved | R | Since I didn't have class afterwards, just come later |
| Office hours were same time as this class lab | | | 200 | 6-Mar-22 | Mitigated | M | Decided to go to other class office hours but instead went to more office hours this week |
| Slept during office hours | | | 120 | 15-Mar-22 | None | A | I fell asleep and that was my bad, got little sleep |
| Test during lab | | | 200 | 13-Mar-22 | Mitigated | M | Went to office hours as long as lab was |
| Original math was incorrect for unit tests | | | 65 | 10-Apr-22 | Resolved | R | Changed a few of the equations to make sure they actually work when implementing |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |
| | | | 0 | | | | |