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ECEN 3753

Project: Planning

**Test Plan and results:**

* **Week 1:** At least 2 Desirable “Cutting Points”
  1. Cutting the output of the physics task is something that is a cutting point that will test the overall functionality of the game. A majority of game play logic is going to be coded here, it is essential that this logic is tested.
  2. Cutting at LED task. I think this implementation might be more complicated than initially thought. I would like to make sure I can properly display force magnitude and damaged caused using the LEDs.
* **Week 2:** Create your unit testing plan, utilizing three “cutting points” for testing

**Project Status:**

* Accurate statement of functionality deliverables and usability so far
  1. Week 1: This week I did the project planning. The task diagram and risk register are completed. I have identified 2 cutting points for unit testing. Actual implementation has not taken place yet.
  2. Week 2: This week I created my unit and testing plan. I began working on implementing and working through the physics task. I began with creating a flowchart for the task and expanding what I already has mapped out for the project. That work became the basis on where to start. It also gave me perspective and where the cutting points would best be placed.
* Summary of effort and estimate numbers
  1. Week 1: I have completed 5% of my currently scoped, estimated work (3 estimated for work completed thus far/54 total estimate) in 11% of the budgeted total-project time. (6 hours spent, of 54 hour total estimate). For the work that has been completed, I took 2x (6/3) as much time as I estimated.
  2. Week 2: I have completed 27% of my currently scoped, estimated work (15 estimated for work completed thus far/54 total estimate) in 33% of the budgeted total-project time. (18 hours spent, of 54 hour total estimate). For the work that has been completed, I took 1.2x (18/15) as much time as I estimated.

**List of In-scope work items:**

* Completed Week 1: I completed the task diagram and planning framework for this project. It is important for implementing the project. The more detailed and accurate the diagram is, the easier it will be to code the project.
* Completed Week 2: I completed a unit testing plan. I also began implementation on the physics task. Initially some time was spent on writing the unit test for the assignment, after lecture and learning we will not be required to write the unit, I had moved my focus to the physics task. The following are my three cutting points as part of my unit testing plan:
  1. The Projectile physics test:
     + Functional test: We want to check that, given the right conditions, the projectile’s position can register a hit to either the foundation, castle, or canyon base. We are only concerned about the vertical position of a fired projectile when it reaches the left barrier.
     + Summary of Tests: A hit to the foundation should free the prisoners and we should see a timer started as a result. A hit at the canon should result in no change in play other than a decrement in availability energy. A hit at the castle should result in the decrease in the health of the castle or destroy it completely.
  2. Satchel Charges:
     + Functional test: We want to test if a charge, at the same horizontal as the platform when landing, destroys the platform and ends the game or misses and a new satchel is generated We are not so much concerned with energy available, projectiles, or castle strength. We are concerned with the horizontal or x-axis position of the satchel charge when it lands after being generated.
     + Summary of Tests: The desired results are either the horizontal position of the satchel and platform do not match up and a new satchel is generated, or they do match up and the game ends because the platform is destroyed.
  3. Shield Generation
     + Functional Tests: We want to check if the shield will protect the platform if a satchel is present. The conditions are that there is enough energy to generate a shield and the satchel will land on the platform. We want to observe the results when a satchel lands on the platform and a shield is generated.
     + Summary of Tests: The result that should be observed is that the satchel has no impact and a new one is generated. The result should be the same as if the satchel missed.

In Scope Work Items:

* Button Tasks – 4 hours
* Touch Slider – 3 hours
* Display Task – 10 hours
* Physics – 20 hours
* Unit testing – 10 hours
* LED Task – 4 hours
* Week 1 initial planning – 3 hours