

# Project Final Submission

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## Summary:

My project is now fully complete. It achieves all basic project guidelines including falling satchels, sliding platform, force field, and functional rail gun. I also had time to add additional bells and whistles. These included a main menu with a rules screen, prisoner stick figures, shield animations, evacuation animations, and an end game screen for each losing and winning possibility.

I have completed **100%** of my estimated work (**35** hr estimated for work completed out of 35 hr total estimate) in **%** of the budgeted total project time. (**35.5** hrs spent out of 35 hr total estimate). For the work that has been completed, I took **1.01x** (35.5hrs/35hrs) as much time as I estimated.

### List of Work Items:

Item	Status	Estimate	Actual (so far if inc.)
Task Diagram	Complete	1 hour	1 hour 30 min
Unit Testing	Complete	5 hours	3 hours
Risk Register	Complete	4 hours	1 hour
Config Data Structs	Complete	2 hours	2 hours
Button Input & FIFO	Complete	1 hour 30 min	1 hour 30 min
Slider Input	Complete	1 hour 30 min	1 hour
Physics Model	Complete	6 hours	8 hours
Satchel Throwing	Complete	3 hours	2 hours 30 min
LED Display	Complete	2 hours	2 hours 30 min
LCD Display	Complete	6 hours	10 hours
Summary/List Work	Complete	3 hours	2 hours 30 min
Total:	11/11	35 hours	35 hours 30 minutes

### Analysis:

1. I had the game over task as the highest priority so the game would not continue once the game over task was called. I had the slider task as the next highest to prevent erroneous slider values, which I learned from the last lab assignment. The other tasks were at equal priority so they would update at the same rate.
2. –
3. I grouped the physics update by element. For example, I completed the satchel data update first, then the rail gun data, then the platform data. This was done so that once the platform was updated, the task could evaluate its position in contrast with other objects to check for possible collisions. An unexpected limitation was ensuring the physics task

worked in sync with other tasks to make sure each task was sharing and working with the correct data.

4. I had to scale back the canyon size to make the game move as fast as I wanted it to. I also tweaked other data such as the tau values for each task, the max slider speed, and the generator power rate. I found most of the configuration data useful and ended up adding some additional variables to them except the CastleHeight and FoundationDepth, as I made my own version of the castle. I enjoyed having the freedom with design of the game, but I wish certain useful functions or code snippets were provided for additional guidance.
5. If I had 2 more weeks on the project, I would add additional satchel methods in addition to AlwaysOne. I would also add to the menu so the user can adjust configuration data, such as the satchel method and difficulty (satchel speed/slider health). I think this would add a cool aspect of the game and add some variability to it.