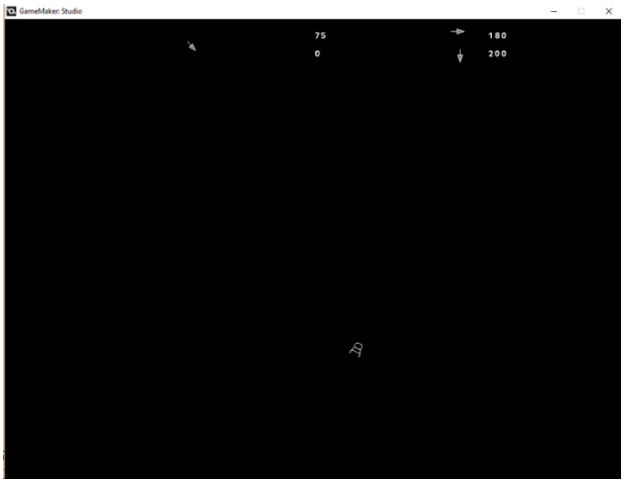
# Advanced Game Development Final Project Critique

Cargo Lander was created as the final for an Advanced Game Development class my freshman year of high school. It was created in an early version of GameMaker: Studio and based off the arcade game Lunar Lander. I did all of the development work; it was play tested by classmates and friends, and graded by the class professor. The project was published to the class on the last day, with limited play testing, and that actually lead to the identification of major flaws in the game.

While creating the project, my primary focus was on the technical elements of the game, creating smooth code, consistent frame rates, small features such as smooth sprite rotation, and a H.U.D. that included velocity, direction of travel, fuel consumption, and throttle. Limited time in and out of class, a focus on the technical elements and a desire to create a technically perfect game all lead to many poor design choices, which made the game almost unplayable for new users. Foremost among these oversights were an ineffective user interface and a poor level design for the tutorial.

The first design flaw the player encountered was that the interface was designed in such a way that the player would skip through all the messages thinking them a meaningless story.

**Figure 1: Tutorial Screen Capture**




As shown in Figure 1: Tutorial Screen Capture above, the Tutorial looks like a nearly blank screen. The indicators are un-labeled (e.g. left most indicator is the current direction of travel).

There isn't any reference on the screen for speed or direction, and the 'character' model is very small (refer to the middle lower third of the screen capture). This design flaw lead to confusion.

After the game had been published, the class was given time to play each other's games. As such when classmates found a game with a bug they would quickly move on to the next assuming the game broken. This is what happened with Cargo Lander; even though the game worked fine, the user interface and level design prevented new players from reaching the better designed levels. The most elegant and simple way to fix this problem would be to forgo the use of popup message boxes for the tutorial in favor of non-skippable background text. That said, players have been skipping tutorials and story alike for decades, and most still figure the controls of the game out on their own; this is accredited to good level design, intuitive controls, and a gentle learning curve. It seems obvious that the level design is what was lacking in my tutorial.

The learning curve was about as gentle as could be, and the controls, while not perfect, were self-explanatory. The level design, however, was far from both perfect and self-explanatory. The screen for this game was locked with the player's lander at the center, much like Arcade and Top Down games of the era. However, unlike those games, and the other levels in Cargo Lander there were no reference points, only a black screen. This gave the player no clues other than the speed read out that they were moving, or in what direction. A simple solution that would fit the setting well, would be to add stars and other reference points in the background to give players the missing frame of reference.

During the development of Cargo Lander, I only had my friend, who was already well versed with controls of the game, play test the tutorial until the turn in day. When new players tested the levels I would skip the tutorial and verbally tell them what the controls and readouts where. I figured that I was quoting the tutorial verbatim, so it wouldn't matter, and that the task of the tutorial was child's play compared to the levels they were testing. However, I didn't account for human impatience. This project showed me the importance of user interface and level design. Even though the game played incredibly smooth and was very responsive, it didn't matter because most players never got to play the game properly. In order to advance to the next level,

the player needed to complete the tutorial level, the goal of which was explained in the messages players deemed unnecessary.

**Figure 2: First Level Opening Message**

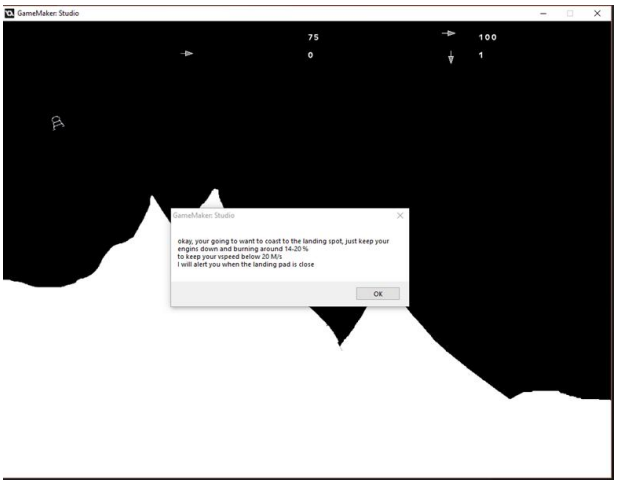



Figure 2 shows the First Level Opening Message. Pop up messages like this bombarded the play as soon as the level loaded in both the Tutorial and First Level. Messages are wordy and mix together with story and game instructions. And messages can be skipped by simply hitting "enter". Players would aimlessly fly through the blackness with both no clue of the controls or the goal of the level. This would lead players to quit the game in sheer frustration.

If given another 30 days to improve the game, I would not spend any time working on the core mechanics of the game. The biggest flaw of Cargo Lander is not just the tutorial, but the user interface in all levels. It is a clunky 'forced' system with no elegance: each message jarring and packed with visual cues left woefully unexplained.

My biggest goal for the rebuild would be to make the game more accessible. To do this I would:

1. Create a system of non-disruptive communication
2. Redesign H.U.D. to better display relevant information
3. Provide more background detail to help the player reference their speed
4. Provide a proper start menu with an optional tutorial
5. Create a simplistic sound design for the landers.

I would address the messages and H.U.D. design first as they are the biggest issues presented in list above. After these two issues were fixed and tested, given time I would move on to one of the other three issues.

Given the identified issue with the current pop up message boxes, a new system of non-disruptive communication needs to be added. A message could be delivered to the player in one of two ways. One way would be with narration done by a voice actor. The second would be text laid in the background of the scene. I believe that narration would be the highest-quality option, especially with a good voice actor, but would take the longest to complete possibly making it a worse option given a short deadline. Furthermore, I have done almost no work with audio in GameMaker: Studio and at the time of the game's development, there were known issues with the engine and sound files leading to corruption and distortion. This could make a narration a non-option simply due to the software the game was made in. As any changes were made I would consult play testers new to the game, or veterans of the style, to gain their opinions on the current or upcoming changes.

**Figure 3: H.U.D. Prior to Re-Design**

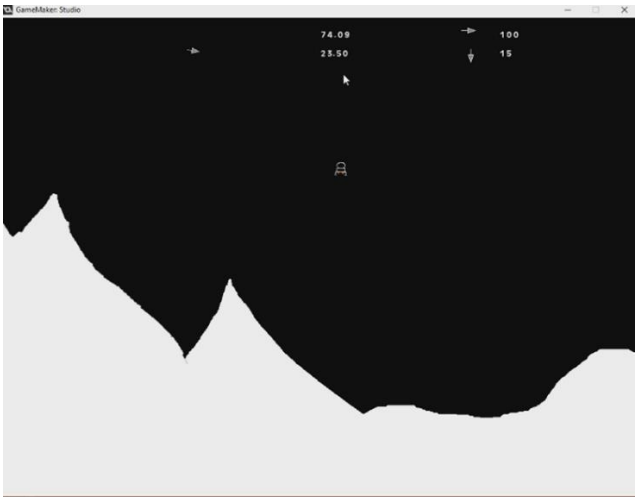
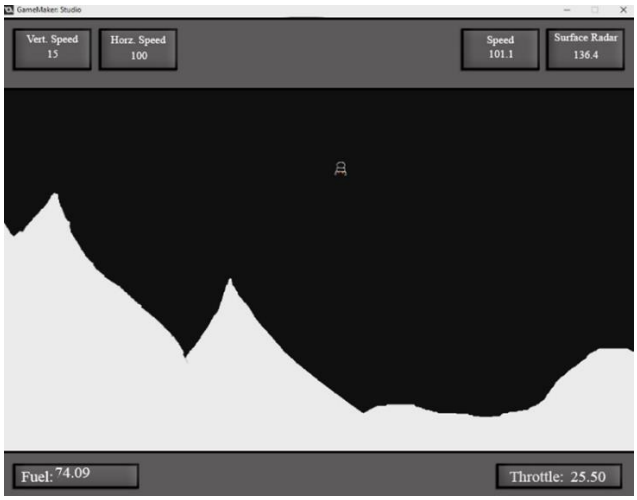



Figure 3 shows the original H.U.D. prior to redesign. The indicators are small and un-labeled and there is not any framing. The result is a very empty screen (semi by design). My goal for redesigning the H.U.D. would be to create a static image that looks much like a dashboard for the lander, with indicators for velocity, fuel, thrust, and direction of travel gauges. One issue with doing this is that it would take away a large piece of screen space, on an already low resolution

screen. This would force the design to be very compact. Figure 4: H.U.D. Mock-up for Redesign shows indicators are labeled; framed indicators are separated from each other and the game world; and future 'character' models are made more defined and in some cases larger.

**Figure 4: H.U.D. Mock-up for Redesign**




Another issue is that the game is presented on a 2D screen with a third person view of the lander the player is controlling. Having a first-person dashboard of the same lander might be disjointing to the player due to the mix of perspectives. Before starting work on the improved H.U.D. I would ask the play testers, who had been play testing the game, what they thought of the idea, or if they had any other ideas for a better display.

As I learned with the tutorial, having a few set play testers who know the game inside and out does not make for a conclusive play test. It is important to present different builds with big changes to players who have rarely or never played the game before. Using different play testers with different levels of skill is also important, as different groups will react differently to each change. An example of this is that the game is very precise, has little room for error, and requires quick and precise input; my friend and I found this suitably challenging and fun, but many others found it nearly impossible to play as it was too sensitive and precise.

My markers for success for this rebuild would be heavily reliant on player feedback, for both those who have often played the game, and those who just started to play. My goal would be to make the game more accessible, from what is mostly a level/U.I. design standpoint. I would say I

succeeded if I could hand the game to another student or play tester and have them be able to play though the tutorial and understand the controls, U.I. and goals of the game. From the ground up it is meant to be a challenging game, but not one that couldn't be learned. The design of Cargo Lander makes it very easy to visually assess player proficiency with the controls. I would also want to ask different groups of play testers what they thought about the game and ask for any feedback they had, or suggested improvements to the display or controls.

Despite everything I learned while programing the physics of the lander, the biggest take away I got from this game and the class was the importance of collecting detailed and diverse player feedback.